



# ANWARUL ULOOM COLLEGE (AUTONOMOUS)

(Accredited by NAAC with 'A' Grade & An ISO 9001:2015 Certified Institution)

(Affiliated to Osmania University, Hyderabad)

## DEPARTMENT OF ARABIC

### COURSE OUTCOMES

BA/B.SC/B.COM/BBA/BBM

YEAR: 2017 -2018

#### Programme Objective (General)


1. The Arabic language makes the students learn their religious book , the holey Quran.
2. It provides knowledge related to culture & civilization and development of social behaviour.
3. Students gain proficiency in an additional language while supporting maintenance of their mother tongue and cultural heritage.
4. Teaching and learning of languages is to enable the student to become a critical & competent communicator.
5. The Dept. Of Arabic is one of the oldest dept. Of AUC.

#### PROGRAMME OUTCOMES (GENERAL)

1. Learning Arabic can help the students better communicate with Arabs, they came to know Arab culture, including its religion Islam.
2. Arabic is a very popular second language to be learned as it allows businesses to grow their international relations and expand to new markets.
3. Learn the Arabic language opens up many employment avenues and possibilities such as oil, travel finance industrial collaboration & translation.
4. Students achieve advanced language proficiency in the four areas of language performance, speaking, listening, reading and writing.
5. students graduating with a foreign language(Arabic) from the Dept.of Arabic will be able to: Communicate effectively in the Arabic language

#### Program specific outcomes:

1. Communication skills in Arabic and English provide immense career and business opportunities.
2. Arabic based computer skills would help in Arabic data entry and back end operations for banks and software companies.
3. work as translators in Arab speaking world.
4. Became freelance writers, journalists and creative artists.
5. Develop competence and calibre to serve as efficient teachers in Arabic.

  
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DEPT. OF ARABIC  
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New Malapally, Hyderabad



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## PROGRAMME OUTCOMES

ARABIC B.A/ B.SC/ B.COM/B.BA /BBM

UP TO COMPLETION OF DEGREE PROGRAMME, THE GRADUATES WILL BE ABLE TO:

1. Build themselves with rich life skills.
2. Secure prospective careers in international bodies, journalism, translation and Administrative services and teaching Arabic.
3. Pursue critical research in methods of Arabic language learning and literature teaching.

SEMESTER -1 GRAMMAR AND TRANSLATION

1. Students will be able to distinguish the Arabic alphabet.
2. Students will understand the basic grammar.
3. Students develop their reading skill.
4. They Enhance the skill of writing of Arabic language.

SEMESTER -1 CLASSICAL AND MODERN PROSE


1. Students will understand the style of classical prose.
2. Students evaluate the narrative style of the classical and modern prose writing.
3. Students will understand the morals and ethics of Arabic traditional stories.
4. They analyze the different style of writings.
5. Enhance knowledge about the stylistic features of the classical and modern prose.

SEMESTER -1 HISTORY OF THE PROPHETS

1. Students gain the knowledge of prophets of Almighty Allah.
2. Students come to know about the water of Zam Zam.
3. Students learn about the life & work of prophet Mohammed (SAW).
4. Students gain more knowledge about their prayers.

SEMESTER -1 HISTORY OF ARABIC LITERATURE

1. closely observe the customs and cultures of the Arabs.
2. Know the culture in pre Islamic period
3. learn the literature (poetry) in pre Islamic period.

  
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4. Gain the knowledge of Assahab e moullaqat.

SEMESTER - II *applied grammar and translation*

1. Students able to identify the nouns.
2. Students able to understand the application of preposition.
3. Students will identify the interrogative words in Arabic.
4. Students are able to differentiate definite & indefinite nouns.
5. Students able to know the types of noun.

SEMESTER - II *grammar*

1. Learn the classification of different particles in Arabic.
2. Understand the rules of Arabic Grammar.
3. Understand & evaluate the types of Arabic Sentences.
4. Students Analyze the functioning of Arabic Prepositions.

SEMESTER - II *PROSE*


1. Students understand the style of classical prose.
2. Students Analyze the different styles of writings.
3. Students will study the Arabic vocabulary, Sentence structures and the diction.
4. Students understand and assimilate the crux of the hadeeth.

SEMESTER - II *HISTORY OF ARABIC LITERATURE*

1. Students gain the knowledge about the features of Arabic language.
2. Students are familiar with the social environment of Arabs.
3. They know about the pre Islamic period.
4. They educate themselves with the lessons gained from the eminent poets of pre Islamic period.

SEMESTER - III *classical prose*

1. Students came to know about the introduction of Quran.
2. Students understand the style of classical prose.
3. Students are critically examine the niceties of the Quranic verses.

  
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4. Students Develop proficiency in comparative analysis of classical and modern prose.

SEMESTER - III

MODERN PROSE

1. Students gain their knowledge about the King (Nizam) of Hyderabad.
2. Students know about the industrial exhibition.
3. They learn about the historical places of hyd.
4. Students understand and assimilate the crux of the hadeeth.

SEMESTER - III

GRAMMAR

1. Students came to know about verb and its kinds.
2. Students understand the genders.
3. Students are identify grammatical errors in sentences.
4. Students Develop proficiency in writing flawless sentences in Arabic.

SEMESTER - III

HISTORY OF ARABIC LITERATURE

1. Students gain their knowledge about the literature in Ummavi period.
2. Students learn how the compilation of Quran takes places.
3. They learn about poets of ummavi period.
4. Students learn about the companions of prophet (saw)

SEMESTER -IV


PROSE

1. Students gain the knowledge about the Female companions of prophet ( saw)
2. Students came to know about the battle of Islam.
3. Students came to know how prophet Mohammed saw face difficulties while preaching of Islam
4. They educate themselves with the brief life history of Prophet Mohammed (saw)

SEMESTER -IV

GRAMMAR

1. Learn about verb and its kinds.
2. Students understand and learn to make sentences.
3. Students learn about imperfect and perfect verb

  
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4. learn the conjugations.

SEMESTER -IV      *history of Arabic literature*

1. Closely observe the customs and culture of the Arab.
2. They came to know about the development of Abbasid period.
3. Enrich themselves with the knowledge of the eminent writers of Abbasid period.
4. Educate them, changes takes place in Islamic Period.

  
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## Course Objectives , Outcomes and Program Outcomes

BBA – Bachelor of Business Administration

Programme Code: 684

Academic Year – 2017-2018

### Programme Objective (General)

1. An Understanding of Business Functions
2. Providing Global Perspectives
3. Developing Critical and Analytical Thinking Abilities
4. Interpersonal Skill Development
5. Developing Entrepreneurship Acumen.

### Programme Outcomes (General)

- PO- 1: Acquiring Conceptual Clarity of Various Functional Areas.
- PO- 2: Ability to analyze various functional issues affecting the Organizations
- PO- 3: Analysis and Interpretation of the data which is used in Decision Making
- PO- 4: Demonstrate Effectively Oral and Written Communication
- PO -5: Analyze Global Environment and its Impact on Business

### Programme Specific Outcomes

- PSO-1: Understand the Ecosystem of start up in the Country
- PSO -2: Demonstrate the Ability to create Business Plans
- PSO -3: Analyze Global Environment and its Impact on Business
- PSO -4: Demonstrate Ability to work in Groups
- PSO -5: Demonstrate the ability to develop models / frameworks to reflect critically on specific business contexts

### Course Objective-

#### PAPER – I : BUSINESS ORGANIZATION AND MANAGEMENT

- CO1: To understand the concept Business Organization.
- CO2: To make the student learn the principles, functions and practice of management.
- CO3. To know the evaluation of Management, thought, difference between management and other fields.
- CO4. To provide and understand the knowledge of staffing and Functions of Management.
- CO5. To know how to develop the techniques for managerial control.

#### PAPER – II : BUSINESS ECONOMICS (MICRO)

- CO1. To Understand the fundamentals of Business Economics
- CO2. To understand the concept of Theory of Demand
- CO3. To provide and understand the knowledge of Theory of Supply
- CO4. To impart the knowledge of Theory of Distribution.
- CO5. To provide the knowledge of Theories of Profit.

#### PAPER – III : FINANCIAL ACCOUNTING

- CO1: To familiarize the students with the basic concepts of Financial Accounting
- CO2: To familiarize the students with the mechanism of preparing Subsidiary books.
- CO3: To provide the student with the knowledge of Accounting Process
- CO4: To provide the student with the knowledge of Bank Reconciliation statement.
- CO5: To familiarize the students to accurately prepare an organization's Final accounts.

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## PAPER – IV : INFORMATION TECCHNOLOGY IN BUSINESS

CO1:To familiarize management students to basics of IT, its applications and importance to present day management and organization.

CO2:The focus of the subject is on introducing skills relating to IT basics, computer applications, programming, interactive medias, Internet basics etc.

CO3: It give a management students practical experience on working in typical office software like MS-OFFICE.

CO4:To understand Information Technology and its practices in managing the business

CO5: Conceptualize the process of Technology acquisition in an Industry.

## SEMESTER – II

### PAPER – I: ORGANIZATION BEHAVIOUR

CO1:The main objective is to explain the fundamentals of managing business

CO2:To Understand individual and group behavior at work place so as to improve the effectiveness of an organization.

CO3:To understand the concepts of Leadership & Motivation

CO4:To understand the concepts of Management of Change

CO5: To provide the students with the knowledge of Organizational Culture and Conflict Management.

### PAPER – II : FINANCIAL ACCOUNTING – II

CO1:To provide the student with the knowledge of Depreciation.

CO2: To understand the concept of Statement of Affairs and Conversion Methods.

CO3: To provide the knowledge of Accounting for Not-For- Profit Organization.

CO4: Understand the meaning and features of Non-Profit Organizations , prepare Receipts & Payment Account, Income & Expenditure Account and Balance Sheet for Non-Profit Organizations.

CO5: To impart the knowledge of Company Accounts.

### PAPER – III: BUSINESS ECONOMICS (MACRO)

CO1:The purpose of this course is to help students learn the fundamentals of economics and they can apply these concepts to their lives and to the world in which they live.

CO2: Economic theory is useful and interesting only if it can be applied to understanding actual events in energy sector and policies.

CO3: To understanding about economic news and issues of energy around the world.

CO4: It helps in decision making in order to achieve desired economic goals. It enhances the capability of participants to understand the prevailing economic and business policy in totality and its impact on the energy sector.

CO5: It improves the ability of the students to apply economic concepts to complex business realities as well as support them to forecast in the energy business.

### PAPER-IV : RELATIONAL DATABASE MANAGEMENT SYSTEM

CO1:Understand terms related to database design and management & objectives of data .

CO2: Understand the database development process , relational model and relational database management system .f

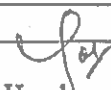
CO3:Evaluate the normality of a logical data model, and correct any anomalies. f

CO4: Implement relational databases using a RDBMS. f Retrieve data using SQL f

5.Understand the basics of data management and administration

## SEMESTER – III

### PAPER – I: PRINCIPLES OF MARKETING

  
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CO1: To provide a broad and integrative introduction to the theories and practice of management.

CO2: The course focuses on the basics as of the management process and functions from an organizational view point.

CO3: To enable the students to understand the role, challenges, and Opportunities of management in contributing to the successful operations and performance of organizations.

CO4: To learn the application of the principles in an Organization.

CO5: To study the system and process of effective controlling in the organization.

## PAPER – II: ADVANCED ACCOUNTING

CO1: To introduce the students to Hire Purchase and Installment System, Branch and Departmental Accounts.

CO2: To understand the principles and procedures of accounting and their application to different practical situations.

CO3: To gain the ability to solve simple problems and cases relating to Hire Purchase System, including special type of corporate entities, partnership accounts

CO4: To understand the concept of Departmental Accounts.

CO5: To understand how to prepare the final accounts of a company

## PAPER – III : BUSINESS STATISTICS- I

CO1: To provide the student an understanding of basic statistical tools to apply for management problems and analysis.

CO2: To apply measures of central tendency

CO3: To understand the significance of Measures of Dispersion

CO4: To provide the knowledge of Correlation.

CO5: To learn about correlation and Regression Analysis.

## PAPER – IV: DIRECT TAXES

CO1: To understand The Indian Income Tax Act, 1961.

CO2: To know the fundamental concepts of taxation, compute taxable income under five heads of income.

CO3: To know the various deductions under different heads of income.

CO4: To compute the income from house property, depreciation and business and profession.

CO5: To understand his responsibility to pay taxes and avail deductions as per Income tax act and updates with budget presentation every year.

## SEMESTER – IV

### PAPER – I : ACCOUNTING FOR MANAGEMENT

CO1: To impart conceptual knowledge of Management Accounting.

CO2: To equip basic skills of analysis of financial information to the management for decision making.

CO3: To know how to assess the Past Performances, current position and operational efficiency of business organization.

CO4: To know the different methods of analysis of financial statement & Ratio Analysis.

CO5: To Explain the difference between the funds flow statement and cash flow statement and understand the benefits of using each.

### PAPER-II: BUSINESS STATISTICS – II

CO1: To provide the student an understanding of basic Statistical tools

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CO2: To enable the students how to apply Statistical tools for management problems and analysis.

CO3: To enable the students to know the concepts of Association of attributes.

CO4: To Understand the concepts of Index Numbers.

CO5: To Understand and appreciate the construction of consumer price index and methods of cost of Living Indices.

### PAPER- III: BANKING & INSURANCE

CO1: To make the students understand the various services offered and various risks faced by banks.

CO2: To impart knowledge on Banking and Insurance its concepts and to gain an insight into working of Banking systems and its regulation.

CO3: To give insight into different types of loans regulation insurance and its regulations.

CO4: To impart knowledge of Insurance and its types.

CO5: To make the students understand the concepts of Financial Markets. Difference between Primary and Secondary Markets, Online Trading and role of SEBI, BSE & NSE

### PAPER- IV: ACCOUNTING PACKAGES

CO1: To understand the importance of computerized accounting and difference between manual accounting and computerized accounting.

CO2: To define the concept chart of accounts, how to create & delete a company, groups and ledgers in Tally & types of vouchers.

CO3: To explain how to create inventory, stock groups and stock items in tally & prepare Funds and Cash Flow statements.

CO4: To know the financial position of the company using different ratios.

CO5: To understand the concept of VAT, its structure and generate its related registers & Service tax and its application in various businesses.

### SEMESTER – V

#### PAPER-I : COST ACCOUNTING

CO1: To define cost accounting and Distinguish between cost accounting, Management Accounting and Financial Accounting.

CO2: To understand the purposes of cost Accounting and explain the importance of contribution in Decision Making.

CO3: To describe the relationship between contribution and profit

CO4: To define Relevant and irrelevant costs and explain the elements of cost, cost Sheet, Methods of costing and the use of techniques of Costing.

CO5: To understand how to ascertain income from marginal costing and absorption costing.

#### PAPER-II: PRODUCTION AND OPERATIONAL MANAGEMENT

CO1: Provide an introductory course in production and operations management.

CO2: Place the historical development of production and operations management.

CO3: Present the student with an overall view of decision making process as it relates to the major areas of production and operations management.

CO4: Know the techniques of production management.

CO5: To understand the techniques and benefits of Inventory Control in Stores Management

#### PAPER-III: BUSINESS LAW

CO1: Make a student aware about law.

CO2: Maintain business in legal ways & Secure business.

*[Signature]*  
Head

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CO3: Aware of the legal issues involving businesses and how to deal with them.

CO4: Know the cases of Contract act and able to create a written contract.

CO5: To understand the various ways in which the parties may become discharged (released) from their contractual obligations.

### PAPER- IV: E-COMMERCE

CO1: To introduce the students about on-line business using internet.

CO2: To provide the information about Application of E-Commerce and its various protocols for communication.

CO3: To impart the knowledge of E-Commerce payment systems.

CO4: To instruct the students about Electronic Data Interchange and its Applications.

CO5: To convey the working of how E-marketing works and its techniques.

### PAPER-V: HUMAN RESOURCE MANGEMENT

CO1: Examine the historical steps in the development of the HRM function and the strategic role of HRM in contemporary Organizations

CO2: Evaluate the factors impacting on the strategic role of HRM and the processes that facilitate HRM contributing to the achievement of organizational goals and objectives.

CO3: Apply the insights from relevant literature to the development and assessment of HRM policies and practices.

CO4: Assess the challenges facing HRM to ensure that policies, procedures and activities are consistent with the principles of ethics, good corporate governance and sustainability

CO5: To know the training process and objectives training and development programme

### PAPER – VI: FINANCIAL STATEMENT ANALYSIS

CO1: To impart the knowledge of Financial Statement Analysis

CO2: Problem solving and decision making skill

CO3: To provide the knowledge of return on invested capital, Profitability, Analysis and Prospective analysis

CO4: Student able to understand the concepts of Equity Valuation

CO5: Leadership, Teamwork and Interpersonal Skill

### SEMESTER – VI

#### PAPER – I: ENTREPRENUERSHIP DEVELOPMENT

CO1: Uderstand the concept of Entrepreneur and Entrepreneurship Development Programme.

CO2: Know the role of Entrepreneurship in Economic Development

CO3: Learn the selection and formulation of project

CO4: now the types and sources of Finance

CO5: Understand the concept of Institutional Support Licenses and Clearances for New Entrepreneurs & Scheme of NSIC, SIDO, SSIB, SSICS, etc.

#### PAPER – II : BUSINESS COMMUNICATION

CO1: To acquaint the student with the knowledge of Business Communication

CO2: To provide an overview of Prerequisites to Business Communication.

CO3: Student should know the concepts of Verbal and Non-verbal Communications

CO4: To put in use the basic mechanics of Grammar

CO5: To provide an outline of Media communication & underline the nuances of Business communication.

#### PAPER –II: INDUSTRIAL RELATIONS MANAGEMENT

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CO1: To understand the importance of healthy industrial relations

CO2: To know the Industrial conflicts and disputes

CO3: To know the role of Trade unions in Industry

CO4: To Learn the different act of wage payment and importance of social security

CO5: To know the objectives of labour welfare and statutory provisions for health of workers.

## PAPER-III: WEB TECHNOLOGIES

CO1: To gain skills of usage of Web Technologies to Design the Web Pages

CO2: To familiarize with scripting language

CO3: To learn JAVA script for creating Web Pages

CO4: To learn Events and Event Handlers

CO5: To familiarize Extensible Markup Language

## PAPER- IV: INVESTMENT MANAGEMENT

CO1: To understand the concepts of Investment Management,

CO2: To familiarize with concepts of risk and return relating to investment

CO3: To know the Time value of money

CO4: Learn about Financial Markets and Instruments & Investment strategies

CO5: To familiarize the concept of Portfolio Analysis

## PAPER – V: INTERNATIONAL FINANCE

CO1: To understand the theory of International Financial Environment

CO2: To familiarize with Balance of payment

CO3: To know the International Capital Markets

CO4: Learn about the Derivatives Instruments

CO5: Student should know the concepts of Foreign Exchange

## COURSE OUTCOMES:

### SEMESTER – I

#### PAPER-I : BUSINESS ORGANIZATION AND MANAGEMENT

CO1: Understand the concepts related to Business.

CO2: Demonstrate the roles, skills and functions of management.

CO3: Analyze effective application of PPM knowledge to diagnose and solve organizational problems and develop optimal managerial decisions.

CO4: Understand the complexities associated with management of human resources in the organizations and integrate the learning in handling these complexities.

CO5: Demonstrate how the organizational behavior can integrate in understanding the motivation (why) behind behavior of people in the organization.

#### PAPER –II: BUSINESS ECONOMICS (MICRO)

CO1. To understand the concepts of cost, nature of production and its relationship to Business operations.

CO2. To apply marginal analysis to the "firm" under different market conditions.

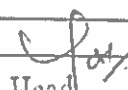
CO3. To analyze the causes and consequences of different market conditions

CO4. To integrate the concept of price and output decisions of firms under various market structure.

CO5: Analyze the behavior of consumers in terms of the demand for product

#### PAPER – III: FINANCIAL ACCOUNTING – I

CO1: Acquire conceptual knowledge of basics of accounting

  
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CO2: Identify events that need to be recorded in the accounting records.

CO3: Describe the role of accounting information and its limitations

CO4: Identify and analyze the reasons for the difference between cash book and pass book balances

CO5: Recognize circumstances providing for increased exposure to errors and frauds

## PAPER – III : INFORMATION TECHNOLOGY

CO1: Understand basic concepts and terminology of information technology.

CO2: Acquire knowledge about generation of computers and types of computers & Know about hardware/software methods and tools.

CO3: Know about different versions in windows operating system & Understand types of operating system and booting process.

CO4: Identify uses of spreadsheets in accounting application.

CO5: Understand the applications of power point presentation and types of slides & Learn about Internet and browsing services available in internet-WWWISP- Browsers.

## SEMESTER – II

### PAPER-I:ORGANIZATIONAL BEHAVIOUR

CO1:Upon the Completion of the course, students will be able to demonstrate the applicability of the concept of Organizational behavior to understand the behavior of people in the organization.

CO2:Demonstrate the applicability of analyzing the complexities associated with management of individual behavior in the organization.

CO3:Analyze the complexities associated with management of the group behavior in the organization.

CO4:Demonstrate how the organizational behavior can integrate in understanding the motivation (why) behind behavior of people in the organization

CO5:Analyze the concepts of Organizational Culture, Conflict and effectiveness organizational culture and climate.

### PAPER –II: FINANCIAL ACCOUNTING – II

CO1: Student differentiate between Depreciation, Amortization and Depletion

CO2: Understand the concept of Statement of Affairs & Conversion Methods

CO3: Know the ascertainment of profit under Single Entry system.

CO4: Understand the meaning and features of Non-Profit Organizations

CO5: Learn to prepare Receipts & Payment Account, Income & Expenditure Account and Balance Sheet for Non-Profit Organizations.

### PAPER- III: BUSINESS ECONOMICS (MACRO)

CO1: To explain the concept of macroeconomics.

CO2. To apply the circular flow of income and expenditure.

CO3: Compute different measures of macroeconomic activity such as the national income accounts, inflation, and unemployment, and evaluate the shortcomings of traditional economic measures

CO4. To Analyze the income determination through classical and Keynesian economics.

CO5: To integrate the role of fiscal and monetary policies in regulating economy.

### PAPER – IV: RELATIONAL DATABASE MANAGEMENT

CO1: have a broad understanding of database concepts and database management system software

CO2: have a high-level understanding of major DBMS components and their function

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CO3: be able to model an application's data requirements using conceptual modeling tools like ER diagrams and design database schemas based on the conceptual model.

CO4: To able to write SQL commands to create tables and indexes, insert/update/delete data, and query data in a relational DBMS.

CO5: be able to program a data-intensive application using DBMS APIs

### SEMESTER – III

#### PAPER-I: PRINCIPLES OF MARKETING

CO1: Use a vocabulary of marketing terms correctly.

CO2: Demonstrate the ability to critically evaluate a marketing program from consumer and marketing practitioner viewpoints, including consideration of ethical implications.

CO3: Communicate clearly, in an organized fashion, the concepts of marketing in both oral and written work

CO4: Demonstrate an understanding of how marketing fits with the other business disciplines within an organization.

CO5: : Demonstrate an understanding of 4 Ps of Marketing.

#### PAPER – II: ADVANCED ACCOUNTING

CO1: Prepare financial accounts for partnership firms in different situations of admission, retirement, death and insolvency of the partners.

CO2: Prepare financial statements for partnership firm on dissolution of the firm.

CO3: Understand the various types of capital structure of the company and their representation in the balance sheet.

CO4: Demonstrate an understanding about the profits of the company and their division

CO5: Employ critical thinking skills to understand the difference between the dissolution of the firm and dissolution of partnership.

#### PAPER – III: BUSINESS STATISTICS-I

CO1: Understand basic statistical concepts such as statistical collection, statistical series, tabular and graphical representation of data

CO2: Calculate measures of central tendency, dispersion and asymmetry, correlation and regression analysis

CO3: Apply knowledge to solve simple tasks using computer & Independently calculate basic statistical parameters viz- mean, measures of dispersion, correlation coefficient, indexes)

CO4: Based on the acquired knowledge to interpret the meaning of the calculated statistical indicators

CO5: Predict values of strategic variables using regression and correlation analysis.

#### PAPER- IV: DIRECT TAXES

CO1: Acquire the complete knowledge of basic concepts of income tax Calculate Residential status of a person

CO2: Understand the concept of exempted incomes & provisions of agricultural income

CO3: Identify and comply with the relevant provisions of the Income Tax Act as it relates to the income tax of individuals

CO4: Compute the income under the head "Income from Salary"

CO5: Compute income under the head "Income from House Property" and also Compute income under the head "Income from Business or Profession"

### SEMESTER-IV

#### PAPER- I: ACCOUNTING FOR MANAGEMENT

*Jos*  
Head

Department of Business Administration  
Anwarul Uloom College  
(Autonomous)  
(Affiliated to Osmania University)  
New Mallepally, Hyd-01, T.S. India.



## Anwarul Uloom College (Autonomous)

(Affiliated to Osmania University)  
Accredited with 'A' Grade by NAAC  
New Mallepally, Hyderabad- 500001, T.S., India.



CO1: Acquire the complete knowledge of basic concepts of Management Accounting
CO2: Identify and comply process and techniques of Financial Statement Analysis & Trend Analysis
CO3: Understand the concepts of Ratio Analysis
CO4: Acquire the complete knowledge of Fund Flow Analysis and Income Statement
CO5: Acquire the complete knowledge of Cash Flow Statement
<b>PAPER-II: BUSINESS STATISTICS –II</b>
CO1: Understanding the concepts of Skewness & Measures
CO2: Based on the acquired knowledge to interpret the meaning of the calculated statistical indicators
CO3: Identify and comply process and techniques of Association of Attribute
CO4: Calculate measures of Index Number
CO5: Understanding the concept of Cost of Living Index Number
<b>PAPER-III: ACCOUNTING PACKAGES</b>
CO1: Demonstrate basic skills in entering accounting information into a computerized accounting system.
CO2: Demonstrate an understanding of the need for quality of data entry in accounting
CO3: Demonstrate an understanding of accounting and business records and reports.
CO4: Demonstrate basic knowledge of computers and computerized accounting software.
CO5: Demonstrate knowledge of a basic accounting vocabulary.
<b>SEMESTER – V</b>
<b>PAPER-I: COST ACCOUNTING</b>
CO1: Understand various costing systems and management systems
CO2: Analyze and provide recommendations to improve the operations of organizations through the application of Cost and Management accounting techniques
CO3: Apply cost accounting methods for both manufacturing and service industry
CO4: Differentiate methods of schedule costs as per unit of production
CO5: Analyze cost-volume-profit techniques to determine optimal managerial decisions
<b>PAPER-II: PRODUCTION AND OPERATIONS MANAGEMENT</b>
CO1: At the end of the course the students can apply the concept of operations management in manufacturing and service sector and will be able to plan and implement production and service related decisions.
CO2: At the end of the course the student will be able to plan production schedules and plan resources (material and machine) required for production
CO3: At the end of the course the students can design maintenance schedules in manufacturing units, identify and propose material handling equipments and implement industrial safety rules
CO4: At the end of the course the students will be able to apply the concepts of purchase, stores and inventory management and analyze and evaluate material requirement decisions
CO5: At the end of the course the students can measure performance related to productivity and will be able to conduct basic industrial engineering study on men and machines.
<b>PAPER-III: BUSINESS LAWS</b>
CO1: Demonstrate an understanding of the Legal Environment of Business.
CO2: Communicate effectively using standard business and legal terminology.
CO3: Demonstrate recognition of transactions involving the Sales of Goods Act
CO4: Demonstrate recognition of consumer protection and intellectual property rights

*for*  
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CO5: Understand the various provisions of Company Law

### PAPER-IV: E-COMMERCE

CO1: Understand the fundamental and importance of E-commerce and Analyze the impact of E-commerce on business models and strategy.

CO2: Be familiarize with E-Marketing & E-Advertising in E-commerce

CO3: Understand EDI as an exchange of business documents in a standard electronic format between business partners.

CO4: Know the legal issues and privacy in E-Commerce • Assess the electronic payment systems

CO5: Learn about the infrastructure for E-commerce and features of Internet, Intranets, Extranets and web technology and how they relate to each other.

### PAPER-V: HUMAN RESOURCE MANAGEMENT

CO1: Critically assess existing theory and practice in the field of HRM

CO2: Apply knowledge about qualitative and quantitative research to an independently constructed piece of work

CO3: Be able to advance well-reasoned and factually supported arguments in both written work and oral presentations

CO4: Be able to evaluate HRM related social, cultural, ethical and environmental responsibilities and issues in a global context

CO5: Work effectively with colleagues with diverse skills, experience levels and way of thinking

### PAPER-VI: FINANCIAL STATEMENT ANALYSIS

CO1: Students can pursue entry-level jobs in the accounting and finance fields upon graduation

CO2: To prepare the Accounting Option graduate with an in-depth course in the analysis of financial reports in order for students to provide much of the information users need to make economic decisions about businesses.

CO3: To interpret corporate annual reports and accompanying notes in addition to the management discussion and analysis as well as the independent auditor's report so that students are able to assess the efficiency and effectiveness of operations.

CO4: To enhance analytical and critical thinking skills for Accounting and Managerial graduates so that students can apply financial statement analysis to assess the solvency, profitability, liquidity, and debt paying ability of a business.

CO5: To provide students with a comprehensive exposure to developing the meaning of financial reports in order for students to assess past performance and predict future results so that information and recommendations can be made to both internal and external users.

### SEMESTER- VI

#### PAPER-I: ENTREPRENEURSHIP DEVELOPMENT

CO1: Understand the development of entrepreneurship as a field of study and as a profession.

CO2: Understand the creative process of opportunity identification and screening. • Understand the entrepreneurial process.


CO3: Analyze new concept/product/service ideas as an entrepreneur

CO4: Understand the business decisions involved in starting a new business venture

CO5: Understand the role of government in promoting entrepreneurship, need and importance of budgets in running of a firm & importance of building a support network for the new venture.

#### PAPER- II: BUSINESS COMMUNICATION

CO1: The students should be able to write correctly and properly with special reference to Letter writing.

  
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CO2: Develop a resume for oneself

CO3: Ability to handle the interview process confidently

CO4: Communicate fluently and sustain comprehension of an extended discourse

CO5: Demonstrate ability to interpret texts and observe the rules of good writing

## PAPER-III: INDUSTRIAL RELATIONS MANAGEMENT

CO1: Be aware of the present state of Industrial relations in India

CO2: Be acquainted with the concepts, principles and issues connected with trade unions,

CO3: Collective bargaining, workers participation, grievance redressal, and employee discipline and dispute resolution.

CO4: Understand the various processes and procedures of handling Employee Relations

CO5: Understand the payment of wages Act 1936 & payment of Bonus Act 1965

## PAPER-IV: WEB TECHNOLOGIES

CO1: Students are able to develop a dynamic webpage by the use of java script and DHTML

CO2: Students will be able to write a well formed / valid XML document.

CO3: Students will be able to connect a java program to a DBMS and perform insert, update and delete operations on DBMS table

CO4: Students will be able to write a server side java application called Servlet to catch form data sent from client, process it and store it on database.

CO5: Students will be able to write a server side java application called JSP to catch form data sent from client and store it on database.

## PAPER-V: INVESTMENT MANAGEMENT

CO1: Demonstrate a basic understanding of investments and the nuances of investing

CO2: Students will understand the benefit of diversification of holding a portfolio of assets, and the importance played by the market portfolio.

CO3: Exhibit the acquaintance of the securities market and its constituents

CO4: Apply knowledge gained to perform analysis of various securities

CO5: Analyze and apply models to securities performance and forecasting

## PAPER-VI: INTERNATIONAL FINANCE


CO1: Student can demonstrate basic understanding of foreign exchange market and exchange rates

CO2: Demonstrate basic understanding of how to use foreign exchange derivatives and other techniques to manage foreign exchange exposures of firms

CO3: Demonstrate basic understanding of the issues pertaining to multinational financing and investment decisions

CO4: Demonstrate critical and analytical skills

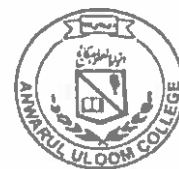
CO5: they should be able to make sense out of a mass of information to address relevant issues pertaining to international finance theory.

  
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**ANWARUL ULOOM COLLEGE (AUTONOMOUS)**  
(Affiliated to Osmania University)



**CHEMISTRY DEPARTMENT**

**Under Graduate - B.Sc. (M.P.C \*\* B.Z.C \*\* N.Z.C\*\*&BT.M.C)**

**Program Educational Objectives - Outcomes (2017 - 2018)**

**Programme Objective: B.Sc.**

1. Read, understand and interpret physical information – verbal, mathematical and graphical.
2. Impart skills required to gather information from resources and use them.
3. To give need based education in science of the highest quality at the undergraduate level.
4. Perform experiments and interpret the results of observation, including making an assessment of experimental uncertainties.
5. Provide an intellectually stimulating environment to develop skills and enthusiasms of students to the best of their potential.

**Programme Outcomes: B.Sc.**

- PO-1. This course forms the basis of science and comprises of the subjects like Mathematics, Physics, Electronics, Chemistry, Biology and Zoology.
- PO-2. It helps to develop scientific temper and thus can prove to be more beneficial for the society as the scientific developments can make a nation or society to grow at a rapid pace
- PO-3. After the completion of this course students have the option to go for higher studies i.e. M.Sc. and then do some research for the welfare of mankind
- PO-4. After higher studies students can join as scientist and can even look for professional job oriented courses.
- PO-5. This course also offers opportunities for serving in Indian Army, Indian Navy, Indian Air Force as officers.
- PO-6. Students after this course have the the option to join Indian Civil Services as IAS, IFS etc..
- PO-7. Science graduates can go to serve in industries or may opt for establishing their own industrial unit.
- PO-8. Apart from the research jobs, students can also work or get jobs in Marketing, Business & Other technical fields
- PO-9. Science graduates also recruited in the bank sector to work as customer service executives. Students can also find employment in government sectors.
- PO-10. Often, in some reputed universities or colleges in India and abroad the students are recruited directly by big MNC's after their completion of the course.

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### What is Chemistry ?

Chemistry is the branch of science that deals with the properties, composition, and structure of elements and compounds, how they can change, and the energy that is released or absorbed when they change.

change, and

#### Programme Specific Outcomes: B.Sc. (M.P.C \*\* B.Z.C \*\* N.Z.C\*\*&BT.M.C.) - Chemistry

PSO - 1. To develop interest among students in various branches of chemistry.

PSO - 2. Help the students to impart a broad outline of the methodology of science in general and Chemistry in particular.

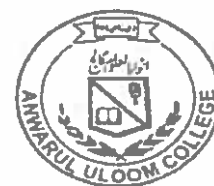
PSO - 3. Students will grasp fundamental insight into chemical compounds with applications ranging from medicine, catalysis and alternative energy sources.

PSO-4. Students will be able to know the needs and working methods for research industry, administrators and education.

PSO-5. The master's degree program in chemistry also forms the foundation for doctoral program in chemistry.

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**B.Sc. I year - Semester I  
Paper - I  
Code No. 6109  
Subject – CHEMISTRY**



#### Course Objective: CHEMISTRY

1. The students will be able to understand the concept of chemical bonding and p- block elements.

2. The students will learn the concept of Structural theory in organic chemistry, Acyclic Hydrocarbons & Aromatic Hydrocarbons.

ANWARUL ULOOM COLLEGE, DEPARTMENT OF CHEMISTRY

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3. The students will be able to explain the concept of Atomic Structure And Elementary Quantum Mechanics, Gaseous state, Liquid state and Solutions.

4. The student will be able to learn the concept of General Principles Of Inorganic Qualitative Analysis, Isomerism and Solid state chemistry.

### Course Outcomes: CHEMISTRY

CO-1. The student will be able to explain about The Lone pairs and Bond pairs. They can able to plot molecular orbital energy diagram of diatomic molecules & P-Block elements in terms of classification their reactivity and their applications.

CO-2. Students will able to explain about polarization, mesomeric effect difference between carbocations and carbanions and about hyperconjugation & certain rules mentioned in the chapter and chemical reactions for the synthesis of alkanes, alkenes and alkynes and their reactivity.

CO-3. The students will be able to explain about the principle of certain laws discussed in this Chapter & They will understand how to derive equations and relationship between the Constant. The intermolecular forces, viscosity and effect of temperature on solids, liquids and gases. They also know about fractional distillation and they will be knowing about the miscible and immiscible liquids.

CO-4. Students will be able to describe the complete group from I to VI cations as well as they will be having a knowledge of cation and anion analysis & different isomers, stereoisomers projection and conformational and configurational isomers analysis and they will be also able to explain derivations of equations and determine the structure of several molecules using some specific methods.

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**B.Sc. I year - Semester II**  
**Paper - II**  
**Code No. 6209**  
**CHEMISTRY**



**Course Objective: CHEMISTRY**

1. The student will be able to describe P-block elements – II , Chemistry of Zero group Elements & Chemistry of d –Block Elements.
2. The student will be able to describe Halogen compounds, Hydroxy compounds and ethers & Carbonyl compounds.
3. Understand the relationship between  $E_{\text{ocell}}$ ,  $\Delta_r G^\circ$ , and K for oxidation-reduction reactions and be able to calculate the parameters of Electrochemistry.
4. The student will be able to describe the theory of quantitative analysis , Stereoisomerism and Dilute Solutions and colligative properties.

**Course Outcomes: CHEMISTRY**

- CO-1. Students will be able to describe Zero Group Elements, their reactivity and their applications, d – Block Elements with special reference to Electronic Configuration, Variable Valence, ability to form Complexes, Magnetic properties and Catalytic properties. Comparative treatment of second and third Transition series.
- CO-2. Students will be able to tell about Halogen compounds-their classification and chemical reactivity. Able to plot energy profile diagram of SN1 and Sn2 reactions. Alcohol, Phenols and Ethers. Their physical and chemical properties and reactivity. Preparation of Aldehydes and Ketones, Physical properties, Chemical reactivity
- CO-3. Students will be able to tell about Nernst Equations, Oxidation and reduction half reactions, Theories related to electrolytes and Applications of conductance and DMF values.
- CO-4. Students will be able to tell about Various volumetric titrations, role of  $p^H$  Gravimetry wave nature of light, plane polarized light, optical rotation and specific rotation, chiral centers, Chiral molecules. R,S configuration, Molecules with constitutionally symmetrical chiral carbons. Prelog rules Analysis- filtration and washing, drying and incineration of precipitate. Laws measurements and derivations of relation between molecular weight and Elevation of Boiling Point and Depression of Freezing Point.

**B.Sc. II year - Semester III**  
**Paper - III**  
**Code No. 6309**  
**CHEMISTRY**

**Course Objective: CHEMISTRY**

1. Students will be able to learn the concept of Chemistry Of f-Block Elements and Coordination Compounds-I.
2. To learn the concept of Carboxylic Acids and Derivatives, Nitro Hydrocarbons, Amines, Cyanides and Isocyanides.
3. To learn the concept of Thermodynamics I, Thermodynamics II.
4. To describe about the concept of Evaluation of analytical data, carbanions and Phase rule.

**Course Outcomes: CHEMISTRY**

- CO-1. Students will gain thorough knowledge regarding elements that come under f-Block of periodic table, coordination compounds present in the chapter.
- CO-2. The student will be able to tell about the properties and preparations of carboxylic acids and their derivatives, the nomenclature, classification of nitro hydrocarbons, their aromaticity, the physical and chemical properties and their reactivities. the nomenclature, classification, principles, preparations, properties of amines, cyanides and isocyanides.
- CO-3. The student will be able to tell about heat and energy, first and second law of thermodynamics, several equations and few theorems involved in thermodynamic studies. At the end of this unit the learners will be able to tell about Proton Magnetic resonance Spectroscopy, mass Spectroscopy, Thermodynamics and derivations and equations involved in Thermodynamics and determination of molecular formulas.
- CO-4. At the end of this unit the learners will be able to tell about how to evaluate the data, and Problems based on mean, median, range, standard deviation, the synthesis and application of carbanions and the knowledge about phases, one and two component system.

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**B.Sc. II year - Semester IV**  
**Paper - IV**  
**Code No. 6409**  
**CHEMISTRY**

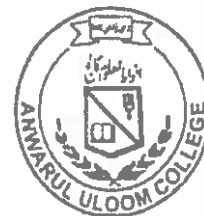


**Course Objective: CHEMISTRY**

1. To gain thorough knowledge about the concepts of Coordination Compounds- II Bioinorganic Chemistry.
2. To explain the concept of Carbohydrates, Amino Acids And Proteins and Heterocyclic Compounds.
3. To gain knowledge about Chemical Kinetics, Photochemistry
4. To impart knowledge about Theories of bonding in metals, Carbanions II And Colloids and Surface Chemistry.

**Course Outcomes: CHEMISTRY**

- CO-1. The student will be able to learn about thermodynamics and kinetic energies of complexes, CFT, Magnetic Susceptibility, Composition of complexes and Catalyst polymerization. biological significance of essential element, toxicity and about electron transport system.
- CO-2. The student will be able to learn about biological significance of essential element, toxicity and about electron transport system.  
carbohydrates, protein and amino acids and their structure, classification, nomenclature and their properties and preparations. Importance of heterocyclic compounds, their structures, reactivity and their properties.
- CO-3. At the end of this chapter the students will be able to tell about Kinetic studies of chemicals, factors influencing the rate of reaction, few terminologies, order of reactions, equations and derivations, photo chemical combinations and fluorescence.
- CO-4. At the end of this unit the learner will be able to tell about theories involved in this chapter and regarding types of conductors and semiconductors. the carbanions-preparation and their applications. Also gain knowledge about named reactions, to explain about the equilibrium of component system and properties of colloids. They will know about different types of adsorption and its applications



**B.Sc. III year - Semester V**  
**Paper - V**  
**Code No. 6509**  
**CHEMISTRY**

**Course Objective: CHEMISTRY**

1. To explain the concepts of Coordination Compounds II, Boranes And Carboranes.
2. To describe about the concept of Amines, Cyanides And Isocyanides, Heterocyclic Compounds.
3. To impact the knowledge about Chemical Kinetics
4. To explain about the concept of Molecular Spectroscopy, Photochemistry,

**Course Outcomes: CHEMISTRY**

- CO-1. The student will be able to learn about thermodynamics and kinetic energies of complexes., CFT, Magnetic Susceptibility, Composition of complexes and Catalyst polymerization. And boranes and its clusters.
- CO-2. The student will be able to tell about the nomenclature, classification, principles, preparations, properties of amines, cyanides and isocyanides.
- CO-3. The student develop scientific attitude through proper recording, interpretation, precise statements, judgment and independent thinking. And importance of heterocyclic compounds, their structures, reactivity and their properties. At the end of this chapter the students will be able to tell about Kinetic studies of chemicals, factors influencing the rate of reaction, few terminologies, order of reactions, equations and derivations.
- CO-4. At the end of this unit the learner will be able to tell about electromagnetic radiations and different types of Spectroscopy -molecular, infrared and electron spectroscopy and photo chemical combinations and fluorescence.

**B.Sc. III year - Semester VI  
Paper - VI  
Code No.6609  
CHEMISTRY**



Course Objective: CHEMISTRY

1.To describe about the concept of Inorganic Reaction Mechanism, Bio Inorganic Compounds, Hard And Soft Acid Bases (HSAB).

2.To explain the concept of Carbohydrates, Amino Acids And Proteins.

3.To understand the concept of Thermodynamics

4.To impact the knowledge on the concept of Proton Magnetic Resonance Spectroscopy, Mass Spectrometry and Thermodynamics II.

**HEAD**  
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**Anwarul Uloom College,**  
**New Malleshpally, Hyderabad.**





ANWARUL ULOOM COLLEGE (AUTONOMOUS)

(Affiliated to Osmania University)

DEPARTMENT OF CHEMISTRY

M.Sc. ORGANIC CHEMISTRY



**Program Educational Objectives-Outcomes (2017 2018)**

**Programme Objectives (General)**

1. To provide students with broad theoretical and applied background all specialization of chemistry
2. To provide knowledge of interdisciplinary branches of chemistry such as Inorganic, organic, physical and Analytical
3. To make the students to carry out scientific experiments and research work
- 4.. To make the students to understand Patterns in shapes structure hybridizations, solubility activity
- 5.To help the student to explain the concept of. Organic chemical Structure and bonding and stability

**Programme Outcome (General)**

- PO-1. The students will have in-depth and detailed knowledge of fundamental theoretical and experimental methods of chemistry
- PO-2. The students will have well define knowledge in area of research chemistry
- PO-3. The students. Will have specific skills in planning and conducting advanced chemical experiments
- PO-4. the students will have knowledge in Structural chemical characterization techniques.
- PO-5. The students will able to innovate new applications of chemical research
- PO-6. Students after this course have the option to join Indian Civil Services as IAS, IFS etc.
- PO-7. Science graduates can go to serve in industries or may opt for establishing their own industrial unit.
- PO-8. Apart from the research jobs, students can also work or get jobs in Marketing, Business & Other technical fields
- PO-9. Science graduates are also recruited in the bank sector to work as customer service executives. Students can also find employment in government sectors.
- PO-10. Often, in some reputed universities or colleges in India and abroad the students are recruited directly by big MNC's after their completion of the course.



**Programme Specific Outcomes: M.Sc.**

PSO-1. To explain students the role of chemistry in nature and in Society.

PSO-2. To explain to students to develop the concepts of chemistry and problem-solving skills.

PSO-3. To explain to students to develop the concepts of chemistry and problem-solving skills.

PSO-4. To help students to develop skills in the proper handling of apparatus and chemicals

PSO-5. To explain the basic facts and concepts in chemistry and applications in various spheres of Chemical Sciences.

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M.Sc. 1 Year- Semester 1  
Paper- 1  
Code No. - 511T  
Subject - Inorganic Chemistry



**Course Objective:**

1. This Course will provide a foundation for further education in chemistry.
2. To explain to the students about the symmetry of molecules and arrange a set of Symmetry operations into classes.
3. To explain to the students about Bonding in metal complexes high spin and low spin complexes.
4. To make the students understand about coordination Equilibria, stability constant by P.H Metry
5. To explain the students ligational aspects of diatomic molecules

**Course Outcomes:**

- CO-1. The students will learn Symmetry of molecules.
- CO-2. The students will have knowledge in bonding in Metal complexes
- CO-3. The students will Learn coordination Equilibria.
- CO-4. The students will know Ligational Aspects of diatomic molecules.
- CO-5. The students will learn about the practicals in Inorganic Chemistry

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M.sc 1 year – semester 1  
Paper-II  
Code no.512 T  
Subject: Organic chemistry



Course objective:

- 1.This course classify organic molecules by their functional groups.
- 2.To explain the students about stereochemistry.
- 3.To explain the students about reaction mechanisms.
- 4.To explain the students about conformational analysis recycling system.
- 5.To make the students understand about the heterocyclic compounds and Natural Product

Course outcome:

- CO-1. The students will learn about Stereochemistry
- CO-2. The students will learn about Reaction Mechanism
- CO-3. The students will learn about Conformational Analysis Recycling System.
- CO-4. The students will get to know about the Heterocyclic Compounds and Natural Products.

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M.SC 1 Year Semester I  
Paper: III  
Code No:513T  
Subject: Physical Chemistry



**Course Objective:**

1. This course introduces students to the core area of chemistry.
2. To explain to the students about Thermodynamics.
3. To explain to the students about Electrochemistry I.
4. To acquire knowledge in Quantum chemistry.
5. To make the students understand Chemical Kinetics I.

**Course Outcomes:**

- CO-1. The students will learn about Thermodynamics.
- CO-2. The students will learn about Electrochemistry I.
- CO-3. The students will learn about Quantum chemistry.
- CO-4. The students will learn about Chemical Kinetics I.

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M.SC 1 Year Semester I  
Paper: IV  
Code No:514T  
Subject: Analytical Techniques and  
Spectroscopy- I



**Course Objective:**

1. This course explains basic concepts, principles and techniques of modern analytical chemistry.
2. To explain the students about the Techniques of chromatography.
3. To explain the students about the NMR Spectroscopy I (<sup>1</sup>HNMR).
4. To acquire knowledge in Rotational Vibrational and Raman Spectroscopy.
5. To make the students understand Electronic Spectroscopy.

**Course Outcome:**

- CO-1. The students will learn about the techniques of chromatography.
- CO-2. The students will learn about the NMR Spectroscopy I (HNMR).
- CO-3. The students will learn about Rotational, Vibrational and Raman Spectroscopy.
- CO-4. The students will learn about Electronic Spectroscopy.

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M.S.C I Year Semester II  
Paper: I  
Code No: 521T  
Subject: Inorganic Chemistry



Course Objective:
1.This course explains the chemistry of organometallic compounds, metal carbonyl and metal Clusters
2.To explain to the students about Reaction Mechanism of transitions metal complexes.
3.To explain to the students about the bonding in Metal complexes II.
4.To explain to the students about the Metal clusters.
5.To make the students understand about the Bio Coordination Chemistry

Course outcomes:
CO-1. The students will learn about the Reaction Mechanism of Transitions Metal Complexes
CO-2. The students will learn about the bonding in Metal Complex II.
CO-3. The student will learn about Metal Clusters.
CO-4. The students will learn about Bio Coordination Chemistry

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M.sc 1 Year Semester II  
Paper: II  
Code No: 522 T  
Subject: Organic Chemistry



**Course Objective:**

1. This course explain the fundamental reactions of alkane, halocarbons, alkenes, dienes
2. To explain the students about Reaction Mechanism II
3. To explain the students about the Pericyclic Reactions
4. To explain to the students about Photo Chemistry.
5. To make the students understand about the Reactive Intermediates and Molecular Rearrangement.

**Course Outcomes:**

- CO-1. The students will learn about Reaction Mechanism II.
- CO-2. The students will learn about Pericyclic Reactions.
- CO-3. The students will learn about Photo Chemistry.
- CO-4. The students will learn about Reactive Intermediates and Molecular Rearrangement.

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M.sc. 1 Year, Semester II  
Paper: III  
Code No: 523 T  
Subject: Physical Chemistry



**Course objectives:**

1. This course explains the relationship between physical phenomena and molecular structure
2. To explain the students about Thermodynamics II and Statistical Thermodynamics.
3. To explain the students about the Photo chemistry I.
4. To explain the students about Quantum Chemistry.
5. To make the students understand Solid State Chemistry.

**Course outcomes:**

- CO-1. The students will learn about Thermodynamics II and Statistical Thermodynamics.
- CO-2. The students will learn about Photo chemistry I.
- CO-3. The students will learn about Quantum Chemistry.
- CO-4. The students will learn about the Solid-State Chemistry

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**M.sc 1 Year Semester II**  
**Paper: IV**  
**Code No: 524 T**  
**Subject: Analytical Techniques**  
**and Spectroscopy**



**Course Objectives:**

1. This course helps in understanding the range and uses of analytical methods in chemistry
2. To explain the students about the Electro and Thermal Analysis Techniques
3. To explain the students about the NMR Spectroscopy II ( $^1\text{H}$ ,  $^{19}\text{F}$  and  $^{31}\text{P}$  NMR)
4. To explain the students about Mass Spectroscopy.
5. To make the students understand about the Photo electron and ESR Spectroscopy.

**Course Outcomes:**

- CO-1. The students will learn about the Electro and Thermal Analysis Techniques
- CO-2. The students will learn about the NMR Spectroscopy II ( $^1\text{H}$ ,  $^{19}\text{F}$  and  $^{31}\text{P}$  NMR)
- CO-3. The students will learn about the Mass Spectroscopy
- CO-4. The students will learn about the Photo electron and ESR Spectroscopy

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M.Sc. II Year Semester III  
Paper: I  
Code No: 531 T  
Subject: Synthetic Reagents, Advanced  
NMR, Conformational Analysis and  
Techniques and ORD Theory



Course Objectives:
1.To explain to the students about the Synthetic Reagents I
2.To explain the students about synthetic Reagents II
3. To explain the students about the $^{13}\text{C}$ NMR and 2D NMR Spectroscopy.
4.To make the students understand about the Conformational Analysis.

Course Outcomes:
CO-1. The students will learn about Synthetic Reagents I.
CO-2. The students will learn about Synthetic Reagents II.
CO-3. The students will learn about the $^{13}\text{C}$ NMR and 2D NMR Spectroscopy.
CO-4. The students will learn about Conformational Analysis.

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**M.Sc. II Year, Semester III**  
**Paper: II**  
**Code No: 532 T**  
**Subject: Modern Organic Synthesis**



**Learning objectives:**

1. To explain the students about Asymmetric Synthesis.
2. To explain the students about Synthetic Strategies.
3. To explain the students about the New Synthetic Reactions.
4. To make the students understand about the New Techniques and Concepts in Organic Synthesis.

**Course Outcomes:**

- CO-1. The students will learn about Asymmetric Synthesis.
- CO-2. The students will learn about Synthetic Strategies.
- CO-3. The students will learn about the New Synthetic Reactions.
- CO-5. The students will learn about the New Techniques and Concepts in Organic Synthesis.

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**M.Sc. II Year, Semester III**  
**Paper: III**  
**Code No: 533 T**  
**Subject: Bio Organic Chemistry**



**Course Objectives:**

1. To explain the students about the Carbohydrates.
2. To explain the students about Nucleic acids and Lipids.
3. To explain the students about the Proteins and Enzymes
4. To make the students to understand about the Coenzymes and Vitamins.

**Course Outcomes:**

- CO-1. The students will learn about the Carbohydrates.
- CO-2. The students will learn about Nucleic acids and Lipids.
- CO-3. The students will learn about the Proteins and Enzymes.
- CO-4. The students will learn about the Coenzymes and Vitamins.

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**M.Sc. II Year, Semester III  
Paper: IV  
Code No: 534 T  
Subject: Green Chemistry and  
Organic Materials**



**Course Objectives:**

1. To explain the students about the Principles of Green Chemistry.
2. To explain to the students about the Green Synthesis.
3. To explain to the students about the Nanomaterials.
4. To make the students understand Supramolecular Chemistry.

**Course Outcomes:**

- CO-1. The students will learn about the Principles of Green Chemistry.
- CO-2. The students will learn about the Green Synthesis.
- CO-3. The students will learn about Nanomaterials.
- CO-4. The students will learn about the Nanomaterials.

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**M.Sc. II Year, Semester IV**  
**Paper: I**  
**Code No: 541 T**  
**Subject: Drug Design And Drug**  
**Discovery**



**Course objectives:**

1. To explain the students about the Principles of Drug Design and Drug Discovery.
2. To explain the students about the Lead Modification And SAR studies.
3. To explain the students about the QSAR Studies and Computer Aided Drug Design.
4. To explain the students about the QSAR Studies and Computer Aided Drug Design.

**Course Outcomes:**

- CO-1. The students will learn about the Principles of Drug Design and Drug Discovery
- CO-2. The students will learn about the Lead Modification And SAR studies.
- CO-3. The students will learn about QSAR Studies and Computer Aided Drug Design.
- CO-4. The students will learn about the Combinational Synthesis.

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**M.Sc. II Year, Semester IV**  
**Paper: II**  
**Code No: 542 T**  
**Subject: Drug Synthesis And**  
**Mechanism of Action**



**Course Objectives:**

1. To explain the students about the Drugs acting on metabolic process, cell wall and specific Enzymes.
2. To explain the students about the Drugs acting on genetic materials and Immune system.
3. To explain the students about the Action on receptors and ion channels.
4. To make the students to understand about the Chiral Drugs.

**Course Outcomes:**

- CO-1. The students will learn about the Drugs acting on metabolic process, cell wall and specific Enzymes.
- CO-2. The students will learn about the Drugs acting on genetic materials and Immune system.
- CO-3. The students will learn about the Action on receptors and ion channels.
- CO-4. The students will learn about the Chiral Drugs.

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M.Sc. II Year, Semester IV  
Paper: III  
Code No: 543 T  
Subject: Advanced Heterocyclic  
Chemistry [Elective 3A]



**Course Objectives:**

1. To explain the students about the Non-Aromatic Heterocyclic and Aromaticity.
2. To explain the students about the Five and Six membered Heterocyclics with Two Hetero Atoms.
3. To explain the students about the Heterocyclic with more than two Hetero Atoms.
4. To make the students to understand about the Large Ring and Other Heterocyclics.

**Course Outcomes:**

- CO-1. The students will learn about Non-Aromatic Heterocyclic and Aromaticity.
- CO-2. The students will learn about the Five and Six membered Heterocyclics with Two Hetero Atoms
- CO-3. The students will learn about the Heterocyclic with more than two Hetero Atoms.
- CO-4. The students will learn about the Large Ring and Other Heterocyclics.

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**M.Sc. II Year, Semester IV**  
**Paper: III**  
**Code No: 543 T**  
**Subject: Organic Polymers Dyes And**  
**Pigments [Elective 3B]**



**Course Objectives:**

1. To explain the students about Organic Polymers.
2. To explain the students about Polymers 2.
3. To explain the students about Dyes-I.
4. To make the students to understand about the Dyes -II and Pigments.

**Course outcomes:**

- CO-1. The students will learn about the Organic Polymers.
- CO-2. The students will learn about the Polymers 2.
- CO-3. The students will learn about the Dyes-I.
- CO-4. The students will learn about Dyes -II and Pigments.

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**M.Sc. II Year, Semester IV**  
**Paper: IV**  
**Code No: 544 T**  
**Subject: Advanced Natural Products**  
**[Elective 4A]**



**Course objectives:**

1. To explain the students about the Biosynthesis of natural products.
2. To explain the students about the Structural Determination of natural products - I.
3. To explain the students about the Structural Determination of Natural Products - II.
4. To make the students to understand about the Total Stereo Selective Synthesis of Natural Products

**Course Outcomes:**

- CO-1. The students will learn about the Biosynthesis of natural products.
- CO-2. The students will learn about the Structural Determination of natural products - I.
- CO-3. The students will learn about the Structural Determination of Natural Products - II.
- CO-4. The students will learn about the Total Stereo Selective Synthesis of Natural Products.

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M.Sc. II Year, Semester IV  
Paper: IV  
Code No: 544 T  
Subject: Pharmaceutics and  
Pharmacodynamics [Elective 4B]



**Course Objectives:**

1. To explain the students about the Pharmacokinetics.
2. To explain the students about the Pharmacodynamics.
3. To explain the students about the Principles of Therapeutics.
4. To make the students to understand about the Drug Interactions.

**Course Outcomes:**

- CO-1. The students will learn about the Pharmacokinetics.
- CO-2. The students will learn about the Pharmacodynamics.
- CO-3. The students will learn about the Principles of Therapeutics.
- CO-4. The students will learn about the Drug Interactions.

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*L. S. Pa*  
Chairperson, BOS

**HEAD**  
Department of Chemistry,  
Anwarul Uloom College,  
New Mallepally, Hyderabad.



# **Anwarul Uloom Degree College (Autonomous)**

**(Affiliated to Osmania University)**

**Accredited with A Grade by NAAC**

**New Mallepally, Hyderabad-500001, T.S. India.**

## **Department of Commerce**

### **OBJECTIVES & OUTCOMES**

**For The Academic Year**

**2017 - 2018**

# ANWARUL ULOOM COLLEGE (AUTONOMOUS)

(Affiliated to Osmania University)

Accredited by NAAC with 'A' Grade

New Mallepally, Hyderabad – 500001, T.S, India

## DEPARTMENT OF COMMERCE

### Objectives & Outcomes

Academic year 2017 -2018

FIRST YEAR

I-Semester

Sl. No.	Subjects	Objectives	Outcomes
1	Financial Accounting – I	1.The objective of this course is to introduce problems of financial accounting such as measuring and reporting issues related to assets and liabilities and preparing the financial statements. Students are expected to gain the ability of using accounting information as a tool in applying solutions for managerial problems, evaluating the financial performance, and interpreting the financial structure.	<ol style="list-style-type: none"><li>1. Acquire conceptual knowledge of basics of accounting.</li><li>2. Identify events that need to be recorded in the subsidiary books</li><li>3. Identify and analyze the reasons for the difference between cash book and pass book balances.</li><li>4. Recognize circumstances providing for increase exposures errors and frauds.</li><li>5. Equip with the knowledge of accounting process and preparation of final accounts of sole trader</li></ol>
2	Business Organization	<ol style="list-style-type: none"><li>1. To Understand the concepts related to Business.</li><li>2. To equip the knowledge about joint stock company.</li><li>3. Demonstrate the roles, skills and functions of management</li><li>4. Organise and present information to a satisfactory standard in oral presentations, essays and reports.</li><li>5. Understand the complexities associated with management</li></ol>	<ol style="list-style-type: none"><li>1. Identify the legal documents necessary to form a sole proprietorship, partnership, limited partnership and a limited liability.</li><li>2. To familiarize company and documents required to start a business.</li><li>3. To develop knowledge about evolution of management thoughts.</li><li>4. To understand better understanding the functions of management.</li><li>5. To give an idea about planning and organizing logistics.</li></ol>
3	Foreign Trade	<ol style="list-style-type: none"><li>1. To equip the students with introduction to Foreign trade.</li><li>2. To impart knowledge about BOT &amp; BOP.</li><li>3. To know about Indian Trade Policy.</li><li>4. To impart knowledge about foreign trade &amp; trade blocs</li><li>5. To know about International Economic Institutions</li></ol>	<ol style="list-style-type: none"><li>1. To provide knowledge about foreign trade.</li><li>2. To provide knowledge about BOT &amp; BOP.</li><li>3. To introduce about Indian trade policy.</li><li>4. To provide knowledge about trade blocs.</li><li>5. To gain knowledge about international economic institutions.</li></ol>
4	Information Technology	The objective is to introduce IT in a simple language to all undergraduate students, regardless of their specialization. It will help them to pursue specialized programs leading to technical and professional careers and certifications in	<ol style="list-style-type: none"><li>1. Basic concepts and terminology of information technology.</li><li>2. Basic understanding of personal computers and their operations.</li><li>3. Basic understanding of using software's</li><li>4. Basic understanding of Operating systems</li></ol>

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		the IT industry. The focus of the subject is on introducing skills relating to IT basics, computer applications, programming, interactive medias, Internet basics etc	5. Basic understanding of Data Communication by using MS.DOS, MS.Excel, MS. Word and MS PowerPoint
	<b>Introduction To International Business</b>	<p>An understanding of international business is essential for students in today's interdependent global world.</p> <p>2. This course will provide students with the knowledge, skills, and abilities to understand the global economic, political, cultural and social environment within which firms operate. It will examine the strategies and structures of international business and assess the special roles of an international business's various functions. It will also prepare students to formulate and execute strategies, plans, and tactics to succeed in international business ventures.</p>	<p>1. Understand the most widely used international business terms and concepts.</p> <p>2. Identify the role and impact of political, economical, social and cultural variables in international business.</p> <p>3. Analyze international business from a multi-centric perspective, avoiding ethnocentric.</p>
	<b>Marketing Management</b>	<p>1. To understand the concepts of marketing management</p> <p>2. To learn about marketing process for different types of products and services</p> <p>3. To understand the tools used by marketing managers in decision situations</p> <p>4. To Understand the marketing environment.</p>	<p>1. Students will demonstrate strong conceptual knowledge in the functional areas of marketing.</p> <p>2. Students will demonstrate effective understanding of relevant topics related to consumer, product and application of computers in marketing management.</p> <p>3. Students will display analytical skills in identification and resolutions of problems pertaining to marketing management.</p>
7.	<b>Income Tax -I</b>	<p>1. To equip the students with introduction to income tax</p> <p>2. To impart knowledge about agricultural income</p> <p>3. To know about income from salaries &amp; house property</p> <p>4. To impart knowledge about profits and gains of business or profession.</p>	<p>1. To provide knowledge about income tax.</p> <p>2. To provide knowledge about agricultural income</p> <p>3. To introduce about Income from salary &amp; house property.</p> <p>4. To gain knowledge about profits and gains of business or profession.</p>

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**FIRST YEAR**

**II-Semester**

Sl. No.	Subjects	Objectives	Outcomes
1	Financial Accounting –II	The main objective of the course is to study in depth the rules for compiling the financial information reflected in the financial statements, so that they may become a useful tool for decision-making in business. In order to achieve this, students must dominate the methodological foundations of Accounting, the tools of technical accounting and elementary measurement standards.	<ol style="list-style-type: none"> <li>1. Appreciate the need for negotiable instruments and procedure of accounting for bills honored and dishonored.</li> <li>2. Understand the concept of Consignment and learn the accounting treatment of the various aspects of consignment.</li> <li>3. Distinguish Joint Venture and Partnership and to learn the methods of maintaining records under Joint Venture</li> <li>4. Distinguish between Single Entry and Double Entry.</li> <li>5. Understand the meaning and features of Non-Profit Organizations.</li> </ol>
2	Business Laws	<ol style="list-style-type: none"> <li>1. To equip the students with introduction to Indian contract act.</li> <li>2. To impart knowledge about sale of goods act and consumer protection act</li> <li>3. To know about providing guidance on intellectual property rights</li> <li>4. To enhance students determination in management of companies and meetings</li> <li>5. To develop knowledge about winding up.</li> </ol>	<ol style="list-style-type: none"> <li>1. To provide knowledge about Indian contract act.</li> <li>2. To provide knowledge about sale of goods act and consumer protection act.</li> <li>3. To introduce about intellectual property rights</li> <li>4. To provide knowledge about management of companies and meetings.</li> <li>5. To gain knowledge about winding up of companies</li> </ol>
3	Banking And Financial Services	<ol style="list-style-type: none"> <li>1. To equip the students with introduction to banking.</li> <li>2. To enable the students about Banker And Customer Relationship</li> <li>3. To provide knowledge about Negotiable Instruments:</li> <li>4. To equip the students with Introduction To Financial Services</li> <li>5. To gain knowledge about financial services.</li> </ol>	<ol style="list-style-type: none"> <li>1. To provide knowledge the students about the concepts of banking.</li> <li>2. To know about banker and customer relationship.</li> <li>3. Acquire the knowledge about negotiable instruments</li> <li>4. Acquaint the students about Financial Services.</li> </ol>

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4	Programmi ng with C	This course is designed to provide complete knowledge of 'C' Language. Students will be able to learn and develop logics which will help them to create programs, applications in C	Student will learn 1. To create Flow chart basic structure of C program, Algorithms and basic programming skills 2. Control structures for looping in the programs. 3. Define functions and different types of functions 4. Developing programs using Arrays 5. Ability to develop programs using Pointers 6. Understand the difference between the top-down and bottom-up approach 7. Describe the object-oriented programming approach in connection with C++ 8. Illustrate the process of data file manipulations using C++
5.	Export Marketing	<ol style="list-style-type: none"> <li>1. To understand the basic concepts and features of Export Marketing.</li> <li>2. To learn about the Marketing Environment Organization and policies are formulated for export.</li> <li>3. To learn new product planning and pricing</li> <li>4. To understand the different sources of Export Finance.</li> </ol>	<ol style="list-style-type: none"> <li>1. The display the ability to apply the fundamentals of marketing for Export Business and solve problems of Export Marketing.</li> <li>2. To analyze the barriers and select the particular market for export business</li> <li>3. To explore and select the best available distribution channel abroad.</li> </ol>
6	Fundament als of Advertising	<ol style="list-style-type: none"> <li>1. Understand what advertising is and its role in advertising and brand promotion and the direct marketing</li> <li>2. Understand the structure of the advertising industry.</li> <li>3. Be able to identify, analyze, and understand the advertising environment.</li> <li>4. Be able to prepare the advertising message and fully integrate the creative process.</li> </ol>	<ol style="list-style-type: none"> <li>1. To understand and analyze the economic effects and social effects advertising.</li> <li>2. Understand the importance of placing the message in conventional and "new" media.</li> <li>3. Be able to identify, understand, and apply integrated brand promotion.</li> <li>4. To understand the effects of Ethics in advertising.</li> </ol>
7	Income Tax-II	<ol style="list-style-type: none"> <li>1. To equip the students with introduction to capital gains.</li> <li>2. To impart knowledge about income from other sources.</li> <li>3. To know about clubbing and aggregation of income.</li> <li>4. To impart knowledge about assessment of individuals &amp; assessment procedures.</li> </ol>	<ol style="list-style-type: none"> <li>1. To provide knowledge about capital gains.</li> <li>2. To provide knowledge about income from other sources</li> <li>3. To introduce about clubbing and aggregation of income.</li> <li>4. To gain knowledge about assessment of individuals &amp; assessment procedures.</li> </ol>
8.		The student will be able to understand terms related to database design. Understanding the objectives of database development process. Define the	<ol style="list-style-type: none"> <li>1. Describe DBMS architecture, physical and logical database designs, database modeling, relational, hierarchical and network models.</li> <li>2. Identify basic database storage</li> </ol>

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	<p><b>Relational Database Management System</b></p>	<p>relational model and relational database management system</p>	<p>structures and access techniques such as file organizations, indexing methods including B-tree, and hashing.</p> <p>3. Learn and apply Structured query language (SQL) for database definition and database manipulation. d) Demonstrate an understanding of normalization theory and apply such knowledge to the normalization of a database.</p> <p>4. Write sub queries and understand their purpose</p> <p>5. Understand Data selection and operators used in queries and restrict data retrieval and control the display order</p>
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**SECOND YEAR- III Semester**

Sl. No.	Subjects	Objectives	Outcomes
1.	<b>Advanced Accounting</b>	<ol style="list-style-type: none"> <li>1.To acquire accounting knowledge of partnership firms</li> <li>2.To acquire accounting knowledge of Dissolution and Insolvency of Partnership firms</li> <li>3.To acquire the knowledge of issue of shares and debentures</li> <li>4.To acquire the accounting knowledge of company final accounts</li> <li>5.To know the accounting knowledge of Goodwill and shares</li> </ol>	<ol style="list-style-type: none"> <li>1. The students are well equipped with partnership Accounts</li> <li>2.The students are aware of issue of Shares Debentures</li> <li>3.The students are well equipped with company final accounts</li> <li>4.The students able to know valuation of Goodwill and Shares</li> </ol>
2.	<b>Business Statistics</b>	<ol style="list-style-type: none"> <li>1.Student is able to describe methods of collection of data</li> <li>2.Analyze Statistical Data Graphically using frequency distribution and cumulative frequency distribution.</li> <li>3.Analyze statistical data using measures of central tendency</li> <li>4.Understanding Concept of Symmetrical distribution</li> <li>5.Understand the Concept of Correlation and the difference between positive and negative correlation</li> </ol>	<ol style="list-style-type: none"> <li>1. Students will able to do classification and tabulation of data.</li> <li>2. Able to construct graphical presentation by using different techniques</li> <li>3. Calculate and Interpret measures of central tendency(mean, median, mode) for set of data</li> <li>4. Students will able to calculate and describe skewness and Kurtosis as measures of non symmetry and diverging from normality</li> <li>5. Students will able to calculate correlation coefficient using different formulas to describe how two variables correlate with one another.</li> </ol>
3	<b>Financial Institution And Markets</b>	<ol style="list-style-type: none"> <li>1. To enrich student's understanding of the fundamental concepts and working of Indian financial system.</li> <li>2. To equip students with the knowledge of financial institutions.</li> <li>3. To acquire the knowledge of money market.</li> <li>4. To know about the debt Market, Government Securities, Bonds etc.</li> <li>5. To acquire the knowledge about equity market.</li> </ol>	<ol style="list-style-type: none"> <li>1. To apply an economics perspective to the study of financial assets and institutions</li> <li>2. Students will able to do to about Indian money market and debt market.</li> <li>3. To acquire an understanding of various concepts related to equity market.</li> </ol>
4.	<b>Relational Database Management System</b>	<ol style="list-style-type: none"> <li>1. Understand the Basic Concepts and Applications of Database System</li> <li>2. Understand the Normalization</li> </ol>	<ol style="list-style-type: none"> <li>1.Demonstrate the Basic Elements of a Relational Database Management System</li> <li>2.Extend Normalization for the</li> </ol>

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		<p>Roles</p> <ol style="list-style-type: none"> <li>3. Master the Basics of SQL and Constraint Queries using SQL</li> <li>4. Understand Relational Database Security and Recovery Issues</li> <li>5. Familiar with Database Structures and Access Techniques</li> </ol>	<p>Development of Application Software.</p> <ol style="list-style-type: none"> <li>3. Design Entity Relationship and Convert Entity Relationship Diagrams into RDBMS and Formulate SQL Queries</li> <li>4. Demonstrate the Understanding of blocking protocols</li> <li>5. Students are able to Demonstrate Different Structures of Databases</li> </ol>
5	<b>International Business Procedures &amp; Documentation</b>	<ol style="list-style-type: none"> <li>1. To acquaint the students with the trade practices, procedures and documentation of International Trade.</li> <li>2. To acquaint the students with International trade terms and Export payment terms</li> <li>3. To know about sources and scheme of trade finance</li> <li>4. To know about credit risk management</li> <li>5. To know about central excise clearance</li> </ol>	<ol style="list-style-type: none"> <li>1. The students are well equipped with FEMA</li> <li>2. The students are well equipped with sources and schemes of Trade finance</li> <li>3. The students are aware with credit risk management and EIA</li> </ol>
6	<b>Media Management</b>	<ol style="list-style-type: none"> <li>1. To know about the Importance of media management and cover new aspects of communication and media</li> <li>2. To develop new insights in media research of mass media and Audit Bureau of Circulation</li> <li>3. To understand different forms of media mix and media strategy.</li> <li>4. To develop skills in media budgeting, buying &amp; scheduling</li> <li>5. To understand that how developments in international marketing in creating effective communication</li> </ol>	<ol style="list-style-type: none"> <li>1. The students were able to learn importance of media management, aspects of communication and media and its research.</li> <li>2. The students were able to learn about media mix and its strategy .</li> <li>3. The students were able to develop skills in media budgeting, buying &amp; scheduling</li> <li>4. The students were able to understand that how developments in international marketing in creating effective communication international marketing</li> <li>5 Explain relationship and differences between marketing research and marketing information systems.</li> <li>6. After completing the syllabus the students are confident about their employment opportunities to work at prestigious companies like JP MORGAN, AMAZON, APPLE, and much more.</li> </ol>

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7	<b>ASSESSMENT OF OTHER ENTITIES</b>	<ol style="list-style-type: none"> <li>1. To explain Students to understand a concept of assessment of HUF</li> <li>2. To prepare students to know about partnership firms and assessment u/s 184 and 185</li> </ol> <p>To provide knowledge to student how to treat a partnership firm as association of persons and how to assess them</p> <ol style="list-style-type: none"> <li>4. To provide knowledge to students regarding assessment of companies</li> <li>5. To give information and knowledge to students how to assess co operative societies and trust</li> </ol>	<ol style="list-style-type: none"> <li>1. Student is able to compute HUF Tax liabilities</li> <li>2. Students are able to understand how to compute partnership firms income u/s 184 &amp; 185</li> <li>3. Student know how to apply various provision while assessing a partnership firm as association of persons</li> <li>4. Students are able to assess different types of companies</li> <li>5. Students are able to assess co operative societies and trust.</li> </ol>
8	<b>PROGRAMMING WITH C</b>	<ol style="list-style-type: none"> <li>1. Understand the concept of the programming, types of languages, structure of a c programme, variables and data types</li> <li>2. Understand the concept of a loop – that is, a series of statements which is written once but executed repeatedly- and how to use it in a programming language</li> <li>3. Be able to use an array to store multiple pieces of homogeneous data, and use a structure to store multiple pieces of heterogeneous data</li> <li>4. Write and use functions, and understand how function calls are carried out, including passing parameters</li> <li>5. Program effectively with pointers, arrays, structures, and dynamically allocated</li> </ol>	<ol style="list-style-type: none"> <li>1. Ability to define variables and data types and execute a c programme.</li> <li>2. Ability to define loops in the programme.</li> <li>3. Ability to work with arrays of complex objects.</li> <li>4. Ability to write programmes using functions.</li> <li>5. Ability to define and manage data structures based on problem subject domain.</li> </ol>

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**SECOND YEAR- FOURTH SEMESTER**

Sl. No.	Subjects	Objectives	Outcomes
1.	<b>Income Tax</b>	<ol style="list-style-type: none"> <li>1.To know and understand the concept of Income Tax</li> <li>2.To know about salary income and tax levy on it</li> <li>3.To provide knowledge of income from various properties</li> <li>4.To provide knowledge to students regarding income earned from business and profession and tax provision pertaining to it</li> <li>5. To know information and knowledge on capital gains and other sources of income of an individual</li> </ol>	<ol style="list-style-type: none"> <li>1. The Students are able to understand the Incidence of taxes.</li> <li>2. The Students are able to work out computation of tax under the head of salaries</li> <li>3. The Students are able to know how to apply various provision while computing income from salaries.</li> <li>4. Students are able to calculate income from business and profession and tax liabilities</li> <li>5. Students are able to work out problems by computing capital gains and other sources of income and tax liabilities</li> </ol>
2	<b>Business Statistics-I</b>	<ol style="list-style-type: none"> <li>1. Student is able to understand a simple linear regression and multiple linear regression</li> <li>2. To define the index number and explain its uses and methods</li> <li>3. Student will equip with various forecasting techniques and knowledge on modern statistical methods for analyzing time series data</li> <li>4. Studying the theoretical foundation of probability theory</li> <li>5. Able to solve problems related to discrete and continuous probability distribution.</li> </ol>	<ol style="list-style-type: none"> <li>1. Student is able to compute regression coefficient and fit a regression line to a set of data.</li> <li>2. Students are able to construct index numbers</li> <li>3. Student know how to apply various forecasting methods which includes obtaining the relevant data and carrying out the necessary computation</li> <li>4. Students are able to calculate probabilities by applying probability loss and theoretical results.</li> <li>5. Students can apply selected probability distribution to solve problems</li> </ol>
3	<b>Corporate Accounting</b>	<ol style="list-style-type: none"> <li>1. To know and understand the concept of liquidation and solve problems</li> <li>2. To know about amalgamation procedure and solve the problems</li> <li>3. To know how companies reconstruct themselves and acquire other businesses, to solve the problems</li> <li>4. To know regarding Banking business and maintaining the books of accounts</li> <li>5. To know the information and knowledge to students how insurance business runs in India and maintain books of accounts</li> </ol>	<ol style="list-style-type: none"> <li>1. Students are able to understand the company's liquidation and solve problems of this unit.</li> <li>2. Students are able to solve problems on amalgamation of this unit</li> <li>3. Students know how to apply various provision while solving problems on these topics</li> <li>4. Students are able to calculate profits of banking companies and maintain books of Accounts.</li> <li>5. Students are able to learn the maintenance of insurance company's accounts</li> </ol>
4	<b>Web Technologies</b>	<ol style="list-style-type: none"> <li>1. Introduction to basics of HTML.</li> <li>2. Learn the language of the CSS and CSS grid layout.</li> <li>3. Develop basic programming skills using</li> </ol>	<ol style="list-style-type: none"> <li>1 To learn technologies that makes the web pages and publishing them.</li> <li>2. Make the web pages more</li> </ol>

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		<p>Java script.</p> <ol style="list-style-type: none"> <li>4. To incorporate event handlers in a web page.</li> <li>5. To understand the XML basics</li> </ol>	<p>dynamic and interactive using CSS</p> <ol style="list-style-type: none"> <li>3. Client side scripting likeHTML, JavaScript and server side scripting</li> <li>4. The students can create dynamic web pages.</li> <li>5. The students learn about XML basics and program the server side.</li> </ol>
5	<b>Marketing Research</b>	<ol style="list-style-type: none"> <li>1.To know the marketing and its importance through research dynamics in Indian scenario.</li> <li>2.To know. the research problem and purpose, be well balanced and the multiple interpretations, so that, researchshould be clear and focused.</li> <li>3.To know the importance of collecting accurate information, define the type of information sought and understand the sources of gathering it</li> <li>4.To know The Market Research Application (MRA) is an intuitive point-and-click interface that provides statistical and graphical techniques for market research data analysis.</li> <li>5. To know how to identify emerging markets, why they're attractive to investors, and what to watch for.</li> </ol>	<ol style="list-style-type: none"> <li>1. Define the basic concepts related to marketing research and contemporary marketing research</li> <li>2.Explain relationship and differences between marketing research and marketing information systems.</li> <li>3. Interpret development of marketing research and process.</li> <li>4. Evaluate the corporate public relations and tools and apply a research in the marketing area.</li> <li>5. Code the data, Analyze the data and arrange a marketing research report.</li> </ol>
6	<b>Customs Procedure and Practice</b>	<ol style="list-style-type: none"> <li>1. To explain Students about customs act and its important terms</li> <li>2. To provide information to students of different types of duties and its procedure</li> <li>3. To provide knowledge to student about goods and procedure of duty drawback</li> <li>4. To provide knowledge to students regarding different customs officers penalties and exemption on different goods</li> <li>5. To give information and knowledge to students about export policy and its promotion</li> </ol>	<ol style="list-style-type: none"> <li>1.Student is able to understand regarding customs act</li> <li>2.Students are able to understand how the customs duty imposed</li> <li>3.Student know regarding term goods and procedure of duty</li> <li>4.Students gets knowledge of different customs officers their duties and how they imposes penalties and what are exempted goods</li> <li>5.Students are able to know about Indian export policy and export promotion</li> </ol>

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7	<b>Object Oriented Programming with C++</b>	<ol style="list-style-type: none"> <li>1. Understanding oops concepts. Structure vs Object oriented programming</li> <li>2. Understand the concept of Constructors and Destructors</li> <li>3. Understand the concept of overloading of functions derived classes and Reusability of functions</li> <li>4. Define the concepts of Polymorphism virtual functions</li> <li>5. Understand the concepts of exceptions in C++, lists and queues</li> </ol>	<ol style="list-style-type: none"> <li>1. Students are able to write c++ programmes using variables and data types</li> <li>2. Students are able to write programmes using constructors and Destructors</li> <li>3. Understanding the concepts of inheritance using this concepts including single and multiple inheritance in object oriented programmes.</li> <li>4. Using virtual functions and file pointers able to write the C++ programmes</li> <li>5. Demonstrate the programmes using exceptions, data structures ,list and queues</li> </ol>
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THIRD YEAR- FIFTH SEMESTER

Sl. No.	Subjects	Objectives	Outcomes
1	<b>Cost Accounting</b>	<ol style="list-style-type: none"> <li>1. To enable students to explain the objectives and scope of Cost Accounting</li> <li>2. To enable students to evaluate the material procurement procedure, inventory control techniques and inventory accounting</li> <li>3. To enable students to evaluate the direct and Indirect labour Cost, Methods of Payment and Methods of Allocation</li> <li>4. To enable students to evaluate unit and job costing</li> <li>5. To enable students to explain contract and process costing.</li> </ol>	<ol style="list-style-type: none"> <li>1. Students would explain the objectives and scope of Cost Accounting .</li> <li>2. To develop about direct and indirect material cost/</li> <li>3. To develop knowledge about labour and overheads.</li> <li>4. Keep them aware about unit and job costing.</li> <li>5. Keep them aware about contract and process costing.</li> </ol>
2	<b>COMPUTERIZED ACCOUNTING</b>	<ol style="list-style-type: none"> <li>1. To introduce students basic knowledge of erp</li> <li>2. To keep knowledge about inventory masters in erp.</li> <li>3. To know about recording day-to-day transactions in erp</li> <li>4. To keep knowledge about accounts receivable and payable management in erp</li> <li>5. To enable the students about mis reports in erp</li> </ol>	<ol style="list-style-type: none"> <li>1. To provide knowledge about the basics of ERP .</li> <li>2. To provide knowledge about maintaining stock keeping units</li> <li>3. To provide knowledge recording day-to-day transactions in ERP.</li> <li>4. Enable the students to gain an idea of accounts receivable and payable management IN ERP.</li> <li>5. Keep them aware about MIS reports.</li> </ol>
3	<b>Auditing</b>	<ol style="list-style-type: none"> <li>1. Understand meaning, types of audit, and difference between auditing and book keeping.</li> <li>2. Understand qualification, Duties, Rights, and different types of auditors</li> <li>3 Know the meaning of internal control, internal check and audit.</li> <li>4. Identify different types of vouchers</li> <li>5. It helps management in detecting and preventing errors and frauds</li> </ol>	<ol style="list-style-type: none"> <li>1: Understand the environment and types relating to the auditing function</li> <li>2: To ensure that all books of accounts are done in a fair manner</li> <li>3: Identify the steps needed to prepare for an audit</li> <li>4: To define the auditor's role and the terms of engagement which is usually in the form of a letter which is duly signed by the client</li> <li>5: An auditor audits the accounts of a company, the findings are usually put out in a report or compiled in a systematic manner.</li> </ol>
4	<b>MANAGEMENT INFORMATION SYSTEMS</b>	<p>Applying sound managerial concepts and principles in the development and operations of information system. Effectively apply system analysis information system design and project management concept. To provide information for decision making on Planning, Initiating, Organizing in the process. It facilitates the decision making process by furnishing information in the proper time frame.</p>	<p>Student will understand the organization structure and decision making process of the organization. Ability to analyze a complex computing problem and to apply principles to identify the solutions.</p> <ol style="list-style-type: none"> <li>2. Student will have an ability to design, implement and evaluate a computing based solution to meet a given set of requirement.</li> <li>3. Student will have an ability to use tools and techniques for identification, evaluation and implementation of MIS in the Organization, using ERP System</li> </ol>

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			<p>(Enterprise Resource Planning)</p> <p>4. Student will understand the need of the org. and finding solutions to complex problems in the org. Ability to use decision support system (DSS), business intelligence process management in the org.</p> <p>5. Student will learn the usage of web and social media and ability to find weakness in planning and design of business org.</p>
5	<b>FUNDAMENTALS OF E-COMMERCE</b>	To impart knowledge about the relevance of E-Commerce in current competitive environment. To make the students aware about the common legal, ethical and tax issues involved in e-commerce. To develop understanding of the working of online shopping and e-payment. To enable the students how to use various tools to build a dynamic website.	<p>1: Understand the E-Commerce and E- business infrastructure and trends</p> <p>2: Analyze different types of portal technologies and deployment methodologies commonly used in the industry.</p> <p>3: Analyze the effectiveness of network computing and cloud computing policies in a multi-location organization.</p> <p>4: Analyze real business cases regarding their e-business strategies and transformation processes and choices.</p> <p>5: Integrate theoretical frameworks with business strategies.</p>
6	<b>Logistics Management</b>	<p>1.To give knowledge and understand the importance of Water transport in logistics management.</p> <p>2.To provide the awareness of air transport and its role in logistics</p> <p>3.The provide knowledge and application of Insurance, marine and cargo insurance</p> <p>4.To know functions of warehousing.</p>	<p>1. To describe the increasing significance of logistics and its impact on both costs and service in business and commerce.</p> <p>2. To understand functions of shipping and different types of containers and ships.</p> <p>3. To understand role of Air Transport and its problem and prospects</p> <p>4. To understand the basics of risks and how to file a claim</p> <p>5. To able to design warehouse and its location strategies.</p>
7	<b>International Advertising</b>	<p>1. Knowledge of advertising and its classification and functions and its impact on marketing.</p> <p>2. Effects of advertising of advertising on sales promotion</p> <p>3. Role of advertising in planning .</p> <p>4. Impact of advertising on profit</p> <p>5. advertising regulating bodies in India as per Our ethics</p>	<p>1: Comprehending the its meaning, importance and nature and complexities of International advertising, International Communication model, Major international advertising decisions and influencing factors; Determination of target audience in international markets; Determining advertising budget.</p> <p>2: Determining international advertising message and copy - Headline, body copy, logo, illustration and layout; Creative styles and advertising appeals; International Media planning –</p>

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			<p>Types of media, media selection and scheduling Advertising through Internet.</p> <p>3: Developing an understanding about In-house arrangements; Using advertising agencies – selection, compensation and appraisal of advertising agency; Evaluating Advertising Effectiveness - Before and after advertising tests and techniques.</p> <p>4: Enabling the students to have a handle on Complexities and issues; Ethical issues in international advertising; Integrated international marketing communications.</p>
8	<b>TAX PLANNING &amp; MANAGEMENT</b>	<ol style="list-style-type: none"> <li>1. To impart knowledge about tax planning, tax management, tax evasion, tax avoidance.</li> <li>2. To provide the knowledge about tax planning with reference to setting up of new business.</li> <li>3. To impart the knowledge about tax planning with reference to specific management decisions.</li> <li>4. To know about tax planning in respect of non residents.</li> <li>5. To develop partial knowledge about planning with reference to all five heads of income for individuals.</li> </ol>	<ol style="list-style-type: none"> <li>1. To provide knowledge about tax planning, tax management, tax evasion, tax avoidance.</li> <li>2. Gain the knowledge of tax planning with reference to setting up of new business &amp; specific management decisions.</li> <li>3. To learn about tax planning in respect of non-residents.</li> <li>4. To give knowledge about planning with reference to all five heads of incomes.</li> </ol>

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THIRD YEAR – SIXTH SEMESTER

Sl. No.	Subjects	Objectives	Outcomes
1.	<b>Cost Control and Management</b>	<p>To introduce the students about management accounting and marginal costing</p> <p>2. To aware the students about budgetary control and standard costing.</p> <p>3. To provide knowledge about techniques of financial statement analysis</p> <p>4. To enable the students about funds flow analysis</p> <p>5. To enable the students about cash flow analysis</p>	<p>To provide knowledge about management accounting and marginal costing.</p> <p>2. Gain the knowledge of budgetary control and standard costing.</p> <p>3. To evaluate techniques of financial statement analysis.</p> <p>4. To learn about funds flow analysis.</p> <p>5. To give knowledge about cash flow analysis.</p>
2	<b>THEORY AND PRACTICE OF GST</b>	<p>1. To equip the students with introduction to GST</p> <p>2. To impart knowledge about enabling GST and intrastate supply, sales of goods.</p> <p>3. To know about GST advancedment and return filing.</p> <p>4. To enhance students determination of supply of services and defining tax rates</p> <p>5. To develop practical knowledge about recording advance entries and migration to ERP.</p>	<p>1. To provide knowledge about goods service tax</p> <p>2. To provide knowledge about getting started with GST.</p> <p>3. To introduce recording advanced entries, GST adjustments and return file</p> <p>4. To provide knowledge about determination of supply of services.</p> <p>5. To understand recording advanced entries and migration to ERP.</p>
3	<b>Accounting Standards</b>	<p>1. To equip the students with introducing to Accounting standards.</p> <p>2. To impart knowledge about enabling standards relating to financial reporting disclosure.</p> <p>3. To know about providing guidance on financial statement items.</p> <p>4. To enhance students determination of standards relating to business acquisitions.</p> <p>5. To develop knowledge about financial reporting.</p>	<p>1. To provide the knowledge about Accounting standards.</p> <p>2. Gain the knowledge of standards relating to financial reporting &amp; disclosure, standards providing guidance on financial statement items &amp; standards relating to business acquisitions and consolidations</p> <p>3. To learn about financial reporting.</p>
4	<b>Multimedia Systems</b>	<p>Using different types of media, which can be processed and presented by computers. Multimedia can be used in various application areas in business environment. Evaluate the appropriate multimedia systems and develop effective multimedia applications</p>	<p>1. Learning of implementation of digital interfaces</p> <p>2. Learning of video presentation and digitalization transmission</p> <p>3. Learning of Data storage concepts and devices</p> <p>4. Learning of multimedia communications and synchronization of data</p> <p>5. Learning of multimedia application and integrating with other systems.</p>
5	<b>MANAGEMENT</b>	Applying sound managerial concepts and	Students will understand the

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	<b>INFORMATION SYSTEMS</b>	principles in the development and operations of information system. Effectively apply system analysis information system design and project management concept. To provide information for decision making on Planning, Initiating, Organizing in the process. It facilitates the decision making process by furnishing information in the proper time frame	organization structure and decision making process of the organization. Ability to analyze a complex computing problem and to apply principles to identify the solutions. 2. Students will have an ability to design, implement and evaluate a computing based solution to meet a given set of requirement. 3. Students will have an ability to use tools and techniques for identification, evaluation and implementation of MIS in the Organization, using ERP System (Enterprise Resource Planning) 4. Students will understand the need of the org. and finding solutions to complex problems in the org. Ability to use decision support system (DSS), business intelligence process management in the organization. 5. Students will learn the usage of web and social media and ability to find weakness in planning and design of business organization.
6	<b>Cross-Cultural Consumer &amp; Industrial Buyer Behaviour</b>	1. To Equip the students with introduction to consumer behavior. 2. To impart knowledge about internal & external determinants of buying behavior. 3. To know about providing guidance on consumer and industrial buying behavior. 4. To develop knowledge about innovation, diffusion and consumer adoption process.	1. To develop basic understanding related to the concept of "Consumer Behavior" and "consumer buying behavior" 2. To understand how the needs of consumer are formed, how they are motivated to buy goods, how consumer perceives the marketing initiatives of marketers, how attitudes and beliefs are formed and how they influence consumer buying behavior. 3. To understand the various social factors responsible in developing consumer tastes and preferences; how family, friends, neighborhood, acquaintances influences consumer buying behavior. 4. To understand the consumer behaviour across various cultures and identifying the marketers strategies for each of the different culture consumers. 5. To study the issues related to consumer research i.e. how the primary and secondary research is conducted in order to understand the consumers psychology; to study the innovation adoption.

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7	<b>Brand Management</b>	<ol style="list-style-type: none"> <li>1. Analyze the fundamental principles involved in managing products and their brands;</li> <li>2. Explain the critical importance of branding for superior business performance;</li> <li>3. Apply branding principles by conducting an in-depth brand management project using a real-world company as an example.</li> </ol>	<ol style="list-style-type: none"> <li>1. To expose the students to the concepts, principles, techniques and application of contemporary branding.</li> <li>2. To provide the students with insights into the design and implementation of branding strategies</li> <li>3. To help the students to build, measure and manage brand-equity</li> </ol>
8	<b>International Tax and Regulation</b>	<ol style="list-style-type: none"> <li>1. To give knowledge on the computation of Incomes and submission Income tax Return</li> <li>2. The student will get thorough knowledge on the tax practice prevailing in Heads of Incomes.</li> <li>3. The students will learn about application of statutory regulations</li> <li>4. To know about how to create and defend and principled and ethical argument.</li> </ol>	<ol style="list-style-type: none"> <li>1. To understand the objectives of tax treaties.</li> <li>2. To understand and apply method for application of tax treaties to present, orally as well as in writing, complicated problems and arguments for objective-oriented solutions.</li> <li>3. To understand the relationship between tax treaties and (strictly) internal laws.</li> <li>4. To a knowledge of the methods for interpretation of tax treaties.</li> </ol>

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**HEAD**  
**Department of Commerce**  
 (REGULAR)  
**ANWARUL-ULOOM COLLEGE**  
 (AUTONOMOUS)  
 New Mallepally, Hyderabad-T.S. India.

# ANWARUL ULOOM COLLEGE (AUTONOMOUS)

(Affiliated to Osmania University)

Accredited by NAAC with 'A' Grade  
New Mallepally, Hyderabad – 500001, T.S,India

DEPARTMENT OF COMMERCE

M.COM SYLLABUS

2017-18

## Objective of the Program

The main objective of this program is to train the students to develop conceptual, applied and research skills as well as competencies required for effective problem solving and right a decision making in routine and special activities relevant to financial management , Investment management, Security market transactions and Tax planning

## Program Outcome

- To provide a systematic and rigorous learning and exposure to Accounting and Finance related disciplines
- To train the students to develop conceptual , applied and research skills as well as competencies require for effective problem solving and right decision making in routine and special activities relevant to financial management and business transactions
- To acquaint a student with conventional as well as contemporary areas in the discipline of Commerce.
- To enable a student well versed in national as well as international trends.
- To facilitate the students for conducting business, accounting practices, role of regulatory bodies in corporate and financial sectors
- To provide in depth understanding of all core areas specifically managerial accounting, cost accounting and control, financial management, marketing management, business environment, research methodology and tax planning

## Program Specific Outcome

- After completing Masters in Commerce students are able to develop and apply knowledge in different areas of Financial Management, Management Accounting and Tax Planning
- To develop the decision making skill through costing methods and practical application of management accounting principles
- To enhance the computer skills and its applicability in business through latest version on Tally and E-Commerce principles.
- Able to work in teams with enhanced interpersonal skills and communication.
- Students can work in different domains like Accounting, Taxation, HRM, Banking and Administration.

For

Shobha Danti

HEAD

Department of Commerce  
(REGULAR)  
ANWARUL-ULOOM COLLEGE  
(AUTONOMOUS)  
New Mallepally, Hyderabad-T.S. India.

**Academic year 2017- 2018**

**I-Semester**

**Objectives & Outcomes of M.Com Course**

Sl. No.	Subjects	Objectives	Outcomes
1	Managerial Economics	<ul style="list-style-type: none"> <li>• To help the students form a clear idea of Managerial Economics.</li> <li>• To enable the students understand determination of demand analysis.</li> <li>• To enable the students understand about production analysis.</li> <li>• To describe the concept of cost analysis including practical knowledge.</li> <li>• To illustrate the calculation of market structure.</li> </ul>	<ol style="list-style-type: none"> <li>1. To equipt the knowledge about nature &amp; scope of managerial economics.</li> <li>2: Ability to forecast demand in light of changing circumstances and to formulate business plans</li> <li>3: To gain knowledge for students about production analysis..</li> <li>4: To gain practical Knowledge on cost.analysis.</li> <li>5: To integrate the concept of Perfect and Imperfect market condition&amp; monopoly, oligopoly.</li> </ol>
2	Principles of Marketing	<ul style="list-style-type: none"> <li>• To understand the concepts of marketing.</li> <li>• To learn about marketing environment &amp; international marketing.</li> <li>• To understand the tools used by marketing segments, targeting &amp; positioning.</li> <li>• To understand about consume behavior.</li> <li>• To impart knowledge on issues related to marketing planning &amp; strategy.</li> </ul>	<ol style="list-style-type: none"> <li>1. Students will demonstrate strong conceptual knowledge in the functional area of marketing management.</li> <li>2. Students will demonstrate effective understanding of marketing environment &amp; international marketing.</li> <li>3: Students will demonstrate analytical skills in market segmentating, targeting &amp; positioning.</li> <li>4 Students will able to understand about consumer behavior.</li> <li>5: Students will able to know about marketing planning &amp; strategy</li> </ol>
3	OT &OB	<p>To help the students to develop the basic conceptional knowledge of; organizational behaqvour.</p> <ul style="list-style-type: none"> <li>• To enable the students describe how people behave under different conditions</li> <li>• To provide the students to analyse motivation morale &amp; culture.</li> <li>• To enable students to understand the influence of organisationalpower,politics,conflict &amp;stressmanagement</li> <li>• To provide knowledge of leadership, communication &amp; change.</li> </ul>	<ol style="list-style-type: none"> <li>1: Demonstrate the applicability of the basic concepts of organizational behavior to understand the behavior of people in the organization.</li> <li>2: Demonstrate the applicability of analyzing the complexities associated with management of individual &amp; group behavior in the organization.</li> <li>3: Demonstrate how the organizational behavior can integrate in understanding the motivation, morale &amp; culture behind behavior of people in the organization</li> <li>4: Students will able to know about organisational power,</li> </ol>



			power, politics, conflict & stress management. 5: Analyse the organizational leadership, communication & change.
4	Financial Management	<p>1. To introduce the students about the importance of Finance Management for a business.</p> <ul style="list-style-type: none"> <li>• To enable them to understand the various modes of capital budgeting techniques.</li> <li>• To acquaint the students regarding working capital management.</li> <li>• To acquaint the students regarding the various types of decisions taken by financial managers in current competitive environment.</li> <li>• To know about the various dividend decisions.</li> </ul>	<p>1. Demonstrate the applicability of the concept of Financial Management to understand the Managerial decisions and to understand time value of money.</p> <p>2. Apply the Capital Budgeting techniques and to find out risk analysis in capital budgeting decisions</p> <p>3. Analyse working capital requirements and Cash management, Accounts receivable management .</p> <p>4. To acquaint with cost of capital, leverages. and capital structure</p> <p>5. Demonstrate with dividend policy and Dividend theories.</p>
5.	Indian Accounting Standards	<ul style="list-style-type: none"> <li>• To provide a standard for the diverse accounting policies and principles</li> <li>• To provide standards which are transparent for users</li> <li>• To define the standards which are comparable over all periods presented.</li> <li>• To provide a suitable starting point for accounting.</li> </ul>	<p>1. To introduce and develop knowledge of Indian Accounting Principles.</p> <p>2: To make them aware about Indian Accounting Standards.(1 to 21)</p> <p>3: Keep them aware about Indian Accounting Standards (23 to 41)</p> <p>4: To make the students aware about Indian Accounting Standards (101 to 106)</p> <p>5: To develop knowledge of Indian Accounting Standards (107 to 115)</p>

### II-Semester

Sl. No.	Subjects	Objectives	Outcomes
1	International Business and Business Environment	<p>1.To equipt the students with the knowledge business environment.</p> <p>2. To equipt the students about liberalization.</p> <p>3. To make the students aware about privatization &amp; globalization.</p>	<p>1. Students will able to know the basic concepts of business environment.</p> <p>2. Students will able to know about liberalization.</p> <p>3. Students will able to know about privatization and globalisation:</p> <p>4. Students will able to know about foreign direct investment.</p>

		<p>4. To provide knowledge of foreign direct investment.</p> <p>5. To know the ledge of WTO &amp; trade policy.</p>	<p>5. Students will able to know about WTO &amp; trade policy</p>
2	Marketing Management	<ul style="list-style-type: none"> <li>• To understand about the product management.</li> <li>• To understand about price management.</li> <li>• To familiarize the students about the techniques of , Promotion management.</li> <li>• To sensitize the students about channel management and retailing.</li> <li>• To equint the students about digital markwting, marketing information system &amp; marketing research.</li> </ul>	<p>1: To understand the concepts of product management.</p> <p>2: To understand the concepts of pricing management.</p> <p>3: Students will able to know about promotional management.</p> <p>4: To understand the channels of distribution and retailing</p> <p>5: To understand tge knowledge of digital marketing, marketing information systemandmarketing research</p>
3	Human Resource Management	<ul style="list-style-type: none"> <li>• To enable students the role of HRM &amp; HRD in an organisation.</li> <li>• To learn about acquisition of human resource.</li> <li>• To design and development of different methods for training of human resources</li> <li>• To study about maintainance of human resource.</li> <li>• To evaluate recent trends in HRM.</li> </ul>	<p>1. To develop the understanding of the concept of human resource management and to understandHuman resource development.</p> <p>2. To understand Job design, Human planning, recruitment and selection p</p> <p>3 To know methods and evaluation of training and development and performance Management andconcept of empowerment.</p> <p>4 .To acquaint with compensation management, employe relations and industrial relation system.</p> <p>5. To understand HRM in the knowledge Era and virtual organisation and learning organisations.</p>
4	Investment Management	<ul style="list-style-type: none"> <li>• To familiarize the students with principles of investment management.</li> <li>• To equip about Indian capital markets.</li> <li>• To know about risk and return analysis.</li> <li>• To study in detail about Portfolio analysis and Markowitz model.</li> <li>• To help the students understand about Portfolio selection and sharpe single index model.</li> </ul>	<p>1: Students will able to know the basic concepts, principles of investment and financial assets.</p> <p>2: Analyze and evaluate indian capital markets.</p> <p>3: Students wil able to know risk and retuen analysis.</p> <p>4: Students will able to know portfolio analysis and Markowitz model.</p> <p>5: To know about portfolio slection and sharpe single index model.</p>

5.	Advanced Managerial Accounting	<ul style="list-style-type: none"> <li>• To develop students about analysis of financial statement.</li> <li>• To impart knowledge on Human Resource Accounting and Responsibility accounting.</li> <li>• To know about inflation accounting and income measurement .</li> <li>• To equant the students about financial measures of performance.</li> <li>• To sensitize the students about contemporary issues in management accounting.</li> </ul>	<p>1: Students will able to understand analysis of financial statement.</p> <p>2: Develop knowledge on human resource accounting &amp; responsibility accounting</p> <p>3: Students will able to know about inflationaccountingandincomemeas urement.</p> <p>4: Develop the skills in financialmeasuresofperformance</p> <p>5: To understand various contemporary issues in management accouting.</p>

For

*Shobha Rani*

**HEAD**

**Department of Commerce**

(REGULAR)

ANWARUL-ULOOM COLLEGE

(AUTONOMOUS)

New Mallepally, Hyderabad-T.S. India.

### III SEMSTER

Sl. No.	Subjects	Objectives	Outcomes
1	Research Methodology & Statistical Analysis	<ol style="list-style-type: none"> <li>1. To enable the students to understand the Quantitative and Qualitative Methods for conducting research.</li> <li>2. Describe data analysis planning processes, Understand appropriate statistical measures, Understand data management approaches Appreciate the importance of tailored / audience sensitive data presentation</li> <li>3. To Guide To The Methods, Benefits &amp; Problems of the Interpretation of Data</li> <li>4. Estimation is the computation of a statistic from sample data, often yielding a value that is an approximation</li> <li>5. Sampling is the most common and widely used method of collecting information</li> </ol>	<ol style="list-style-type: none"> <li>1. Understanding of the Quantitative and Qualitative Methods of research</li> <li>2. Data analysis plan Quantitative data analysis Data management</li> <li>3. The students are able to interpret the data analyse the same and able to do a report writing</li> <li>4. Inference statistics involves testing a hypothesis, specifically</li> <li>5. To measure activities and delays while a man is working and percentage of that he is not working</li> </ol>
2	E-Commerce	<ol style="list-style-type: none"> <li>1. Introduction to Fundamentals of E-Commerce</li> <li>2. Students will gain knowledge of about EDI and E-Commerce business models.</li> <li>3. Students will get awareness about Electronic payments systems</li> <li>4. Introduction Tally Accounting Software.</li> <li>5. Students will learn about the statements generated in Tally.</li> </ol>	<p>After Completion of the subject student should able To:</p> <ol style="list-style-type: none"> <li>1. Know the basic concepts and technologies used in the field E-commerce.</li> <li>2. Understand the working EDI and Internet</li> <li>3. Will be able to create a Static web page using HTML.</li> <li>4. Can generate the account groups and ledgers.</li> <li>5. Generate Profit &amp; Loss Account Balance sheet and Other MIS reports.</li> </ol>
3	Cost Accounting and Control	<ol style="list-style-type: none"> <li>1. To explain Students to understand a concept of cost accounting and its basics</li> <li>2. To provide information to students how to maintain accounts when a product passes through different processes,</li> <li>3. To provide knowledge to student about marginal absorption and differential costing</li> <li>4. To provide knowledge to students regarding budgets and its controls</li> <li>5. To give information and knowledge to students about standard costing</li> </ol>	<ol style="list-style-type: none"> <li>1. Student will be able to know what is cost accounting and how its is implemented in manufacturing concerns.</li> <li>2. Students are able to understand how to maintain books of accounts in process costing</li> <li>3. Student know how to apply different costing techniques</li> <li>4. Students are able to prepare different types of budgets</li> <li>5. Students are able to know about standard costing</li> </ol>

4	International Financial Management	<ol style="list-style-type: none"> <li>1. . To Explore the complexities of corporate financial management in an international setting. The course emphasis on the drawing of balance of payments,</li> <li>2. Determination of exchange rates and their relationship. Different types of foreign exchange risk face by MNC.</li> <li>3. Different types of foreign risks face by the MNC. Identification and measurement of these risks.</li> <li>4. To explain about international investment decision, FDI and international capital budgeting</li> </ol> <p>To explain the scope and structure of international financial market</p>	<ol style="list-style-type: none"> <li>1. . To recognize the difference in the operations in international and domestic financial market To analyse and prepare the balance of payment for a country.</li> <li>2. To explain the various ways the exchange rate prevailed over the years in the international market.</li> <li>3. To recognize the operations in the currency market and solve exchange rate determination in spot and forward market.</li> <li>4. Able to do problems on capital budgeting decisions, discounting and non discounting methods.</li> <li>5. Give broad view about selection of sources of funds in international financial market.</li> </ol>
5.	Security Analysis and Portfolio Management	<ol style="list-style-type: none"> <li>1. To analyse various fundamental basic factors that affect the risk-return of the securities</li> <li>2. To provide insight about the relationship of the risk and return.</li> <li>3. To acquaint the students with latest concepts and trends in the securities market.</li> <li>4. Portfolio management practices in India.</li> <li>5. To familiarize the students with the fundamental and technical analysis of the diverse investment avenues.</li> </ol>	<ol style="list-style-type: none"> <li>1. To understand different investment alternatives in the market.</li> <li>2. To understand how securities are traded in the market.</li> <li>3. To able to manage a portfolio</li> <li>4. To understand basics in the derivatives</li> </ol>

For

*Shobha Rao*

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**Department of Commerce**

(REGULAR)

ANWARUL-ULOOM COLLEGE

(AUTONOMOUS)

New Mallepally, Hyderabad-T.S. India.

### IV-Semester

Sl. No.	Subjects	Objectives	Outcomes
1	Quantitative Techniques for Business Decisions	<ol style="list-style-type: none"> <li>1. To understand quantitative skills that are required to make business decision.</li> <li>2. To understand of role of between – group and within group variability in testing difference between group of means.</li> <li>3. To understand the calculation of Chi square test.</li> <li>4. To understand non-parametric tests.</li> <li>5. Identify the one best decision alternative for decision situations of uncertainty.</li> </ol>	<ol style="list-style-type: none"> <li>1. Able to interpret the results from a one- way ANOVA test and a two-way tests.</li> <li>2. Accurately interpret results from a Chi square test.</li> <li>3. Able to characterize, compare and contrast different non-parametric test.</li> <li>4. Able to identify decision alternatives.</li> </ol>
2	Business and Corporate Taxation	<ol style="list-style-type: none"> <li>1. To prepare students to know about partnership firms and assessment u/s 184 and 185. To provide knowledge to student how to treat a partnership firm as association of persons and how to assess them.</li> <li>2. To provide knowledge to students regarding assessment of companies.</li> <li>3. To provide knowledge to students regarding assessment of companies and how corporate tax be imposed.</li> <li>4. To give information and knowledge to students how to assess co operative societies and trust.</li> <li>5. To provide students knowledge of GST and customs act its implementation</li> </ol>	<ol style="list-style-type: none"> <li>1. Student know how to apply various provision while assessing a partnership firm as association of persons</li> <li>2. Students are able to assess different types of companies.</li> <li>3. Students are able to assess different types of companies compute tax liability.</li> <li>4. Students are able to assess co operative societies and trust.</li> <li>5. Students are able to assess GST and customs duty.</li> </ol>
3	Strategic Management	<ol style="list-style-type: none"> <li>1. Introduction to essentials of strategic management</li> <li>2. Students are introduced to SWOT Analysis and PEST Analysis.</li> <li>3. Students will learn about</li> </ol>	<p>After Completion of the subject student should able:</p> <ol style="list-style-type: none"> <li>1. Strategic Management Process and Corporate Governance</li> <li>2. To evaluate environmental analysis.</li> </ol>

		<p>Merges and Acquisitions</p> <p>4. Students gain knowledge of Organizational issues</p> <p>5. Students are introduced to Evaluation strategy.</p>	<p>3. To design vision and mission of the organization.</p> <p>4. To Performance Evaluating (ROI, EVA, and MVA)-Balanced Score</p> <p>To Control Evaluation techniques for strategic and operational control</p>
4	Financial Services	<p>1.To know the fundamental of Financial services</p> <p>2.To know about Leasing, Hire purchase and House finance</p> <p>3.To know about Mutual funds</p> <p>4.To know about Discounting, Factoring and forfeiting</p> <p>5.To know about Securitisation of Deb.</p>	<p>1.The students are able to know the fundamentals of financial services</p> <p>2.The students are know about Lease,Hirepurchase and House purchase</p> <p>3.The students are able to know about Mutual fund</p> <p>4.The students able to know Discounting factoring and forfeiting</p> <p>5.To know about Seturitisation of debt</p>
5	Financial Derivatives	<p>1. Understand the meaning and Evaluation of derivatives. Describe the features and types of financial derivatives</p> <p>2. Distinguish between futures and forward contract</p> <p>3. Understand the concept of options</p> <p>4. Understand the basic concepts of swaps and types of swaps.</p> <p>5. Explain the basics of stock index features.</p>	<p>1. Understand the concept of various derivatives products such as futures, options and swaps. Analyse and price diverse derivatives products to generate an optimal risk management strategy.</p> <p>2. Demonstrate the features of forward and futures market. Demonstrate critical thinking, analytical and problem solving skills in the context of derivatives pricing and hedging practices</p> <p>3. Explain black schole trading model and binomial trading model</p> <p>4. Able to solve the problems of pricing of currency swaps and interest rate swaps</p> <p>5. Able to solve the problems of pricing of currency swaps and interest rate swaps</p>

For  
Shobha Ravi

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# ANWARUL ULOOM COLLEGE

## DEPARTMENT OF BIOTECHNOLOGY

B.Sc. (BT.MC) 2017- 2018

- **Programme Outcomes (General)**

PO1.	Critical Thinking: Apply critical thinking and enhance learning in the three major subjects of their choice with scientific reasoning and analytical skills.
PO2.	Problem solving: Think logically and organize task into a structured form for problem solving by applying the knowledge of basic science.
PO3.	Effective communication: To develop the ability of effective communication of scientific information in written and oral format.
PO4.	Individual and team work: Function effectively as an individual and as a member or leader in diverse teams and in multi-disciplinary settings.
PO5	Ethics: Apply ethical, moral and social values in personal and professional life leading to holistic development of the individual.
PO6.	Environment and sustainability: Develop interdisciplinary approach to provide better solution and innovative ideas for sustainable development and conservation of natural resources.
PO7.	Self-directed and lifelong learning: Recognize the need for and have the ability to engage in independent, lifelong learning and adapt to technological changes to be globally competent.

- **Programme Objective (General)**

PO1	To make our students competent in the field of biotechnology and its allied areas.
PO2	To inculcate the capability to work as entrepreneurs and techno managers with strong ethics and communication skills.
PO3	To equip the students to pursue higher education and research in reputed institutes at national and international level
PO4	. To develop a working knowledge of biotechnology product and processes.



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• Programme Specific Outcome (General)

PSO -1	Student is empowered with knowledge of disciplinary and interdisciplinary aspects of Biotechnology.
PSO - 2	Develops critical thinking and is able to apply appropriate tools and techniques in Biotechnological manipulation.
PSO - 3	Develops an ability to justify social, health, safety, legal issues and understand the responsibility towards ethical practices in biotechnology
PSO - 4	Acquire laboratory skills necessary for Biotechnology research, gains practical and theoretical knowledge in Biological chemistry, Structure and functions of carbohydrates, proteins and lipids.
PSO - 5	Acquires knowledge on fundamentals of Microbiology, basic concepts of Prokaryotes, Eukaryotes and different branches of Microbiology.
PSO - 6	Gains an insight into various aspects of Immunology, Virology and realizes the principles of prevention and treatment of microbial diseases
PSO - 7	Grasps the fundamental aspects in the field of Environmental Microbiology and Quality sustenance in industry.
PSO - 8	Understands the concepts and application aspects of Microbiology in Food and Dairy industry, production of metabolites and bioinoculants
PSO - 9	Students can effectively translate the metabolic processes in biological research
PSO - 10	Acquire methodical and logical understanding of the fundamental concepts in Physical, Organic, Inorganic, Analytical and all other integrated Chemistry subjects
PSO - 11	Achieve the ability to synthesize, separate, estimate and characterize compounds using experimental and instrumentation techniques
PSO - 12	Develop critical thinking and problem solving skills through solving by adopting research based pedagogical tools



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- **Course Objective (B.Sc. Biotechnology)**

1	<b>Semester I Genetics</b>	To comprehend the Mendelian Genetics principles in human, plants and animals.
2	<b>Semester II Nucleic acid, Bioinformatics</b>	To understand the structure of Nucleic acid. Alignment and to deal with computational Biology.
3	<b>Semester III Biological Chemistry</b>	To understand the carbohydrate classification. To comprehend metabolism of lipids, nucleic acid and amino acids.
4	<b>Semester IV Microbiology and Immunology</b>	To learn about Viruses, Algae, Fungi, Protozoa. To learn about the general characteristics of Immune System.
5	<b>Semester V r.DNA Technology</b>	To know the technologies-cloning and DNA sequencing. It is used to identify, map and sequence genes.
6	<b>Semester VI Applied biotechnology</b>	Applied biotechnology is biotechnology with an industry focus with an emphasis on practical skills that allow graduates to pursue jobs in a variety of settings, such as industrial, food, agriculture, environmental, and healthcare.



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- **Course Outcome (B.Sc. Biotechnology)**

CO - 1	Semester I Genetics	Ability to apply Mendelian inheritance principles to humans, plants and animals
CO - 2	Semester II Nucleic acid, Bioinformatics	Understanding the basics of enzymology. Help in derive inferences based on statistical comparison
CO - 3	Semester III Biological Chemistry	Acquaintance with carbohydrate metabolism and networks.
CO - 4	Semester IV Microbiology and Immunology	Understanding the basics of microbiology and microbial classification and immunology
CO - 5	Semester V r.DNA Technology	To learn the application of recombinant DNA in basic research. To learn about medicinally useful recombinant products
CO - 6	Semester VI Applied Biotechnology	Students develop global competencies in the area of basic and applied biological sciences.



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# ANWARUL ULOOM COLLEGE

## DEPARTMENT OF BIOTECHNOLOGY

M.Sc. Biotechnology 2017-2018

- Programme Outcomes (General)

PO - 1	Develops an understanding of scientific theory principles and perspectives in sciences by critical thinking.
PO - 2	Develops problem solving skills and is able to design and carry out innovative research projects.
PO - 3	Communicates effectively, comprehends knowledge, writes effective reports, designs documentation and makes effective presentations.
PO - 4	Functions effectively as an individual, as a member and leader of diverse teams in multidisciplinary settings for Holistic development.
PO - 5	Applies ethical principles and is committed to professional ethics, responsibilities in the field of research, is able to design, analyse, interpret data and find solutions for complex problems by applying the right tools. This study provides an excellent bridge between undergraduate study and Ph.D research.
PO - 6	Realizes and promotes environmental sustainability through various eco-friendly measures that encourage judicious use of resources.
PO - 7	Postgraduate studies boosts the self directed career progress and outline the career paths. It improves the ability to tackle complex and challenging assessment tasks and helps in lifelong learning to be globally competent.
PO - 8	Takes up responsibilities in production, quality testing, designing and marketing which contribute to the growth of industry and thus increases employability.




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- **Programme Objective (General)**

1	Recapitulate the previous knowledge of cell biology and to establish thorough understanding of various cell structure and function at molecular level.
2	Provide a thorough understanding of the various molecular biology concepts in study of cell biology and to study the different tools and techniques used to study the biology of cell at molecular level
3	Provide students with a deep insight about the motility of the cell with emphasis on the molecular motors, cell adhesions, molecular biology involved in the movement process involved in movement of Cilia and Flagella.
4	Teach our students to have a concrete knowledge about cell to cell communication in animals as well as plants and to study about the basis of the interaction as well as the genes involved in it.
5	Acquire in-depth knowledge of the molecular events involved in cell division which includes mitosis, meiosis, cell cycle and its regulation. Including. To provide wider and global perspective of cell cycle regulation and cancer, with an ability to discriminate, evaluate, analyse and synthesise existing and new knowledge, and integration of the same for enhancement of knowledge.

- **Programme Specific Outcome (General)**

PSO 1	Acquires and demonstrates competency in laboratory safety. Develops routine and specialized microbiological laboratory skills applicable to research, hospitals and industries
PSO 2	Applies statistical and bioinformatics tools for interpretation of biological data and gains expertise in Computational Biology.
PSO 3	Acquires knowledge of structural and enzymatic properties of microbes and fermentation engineering, to develop human / environment friendly products or processes.
PSO 4	Gets familiarized with principles and techniques of various basic and analytical instruments used in laboratories
PSO 5	Recognizes the importance of IPR and Patenting. Gain Entrepreneurial skills to initiate StartUp.
PSO 6	Gets trained in bimolecular mechanisms involved in life processes, health and diseases.
PSO 7	Gains proficiency in related disciplines such as Molecular Biology, Pharmaceutical Sciences, Nan biotechnology and Immunology.
PSO 8	Explores the life forms at cellular, molecular and nano levels. Understands amazing properties of microbial world and appreciates the beauty of microbial life forms.
PSO 9	Assesses the role of microbes in improving soil quality and agricultural output through sustainable microbiological applications.
PSO 10	Work as Health care professionals in the fields of laboratory management, hospital and community services, in development & preparation of Study material for visually challenged

  
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• **Course Objective (M.Sc. Biotechnology)**


<b>SEMESTER – I</b>		
<b>1</b>	<b>Cell Biology and Genetics</b>	<ul style="list-style-type: none"> <li>• Obtain basic knowledge of hierarchical structure and organization of chromosomes, insight into chromosomal anomalies and learn the science behind genemapping in eukaryotes.</li> </ul>
		<ul style="list-style-type: none"> <li>• To comprehend the biochemical and molecular processes of cell division and cell death.</li> </ul>
<b>2</b>	<b>Biological Chemistry</b>	<ul style="list-style-type: none"> <li>• To learn the cellular signally prossess.</li> </ul>
		<ul style="list-style-type: none"> <li>• To understand the carbohydrates classification and metabolism.</li> </ul>
		<ul style="list-style-type: none"> <li>• To comprehend metabolism of Lipids, Nucliec acids and Amino acids.</li> </ul>
<b>3</b>	<b>Microbiology</b>	<ul style="list-style-type: none"> <li>• To learn about general characteristics of Bacteria: Bacterial isolation ,growth.culturing and preservation,.isolation.</li> </ul>
		<ul style="list-style-type: none"> <li>• to learn about general characteristics of microorganisms, microscopy,sterilization,containment.</li> </ul>
<b>4</b>	<b>Statistics, laboratory management and safety ,entrepreneurship</b>	<ul style="list-style-type: none"> <li>• To understand the concept of applying appropriate test statistics</li> </ul>
		<ul style="list-style-type: none"> <li>• to know the importance of entrepreneurship.</li> </ul>
		<ul style="list-style-type: none"> <li>• To learn laboratory management and safety.</li> </ul>



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<b>SEMESTER – II</b>		
<b>1</b>	<b>Molecular Biology- The Genome</b>	It is the study of cell, their structure, function, growth and chemical process. It helps in depicting genomic organization.
<b>2</b>	<b>Molecular Biology- Genes to Protein</b>	It helps in determining the function of genes and elements that regulate genes throughout the genome.
<b>3</b>	<b>Immunology</b>	It helps in studying important factors related with the treatment of many diseases. Development of auto antibodies against self antigens of various diseases
<b>4</b>	<b>Microbial Techniques</b>	To study the growth phases of micro-organisms and different types of growth media available to culture them. It helps to study about the preparation of pure culture.

<b>Semester - III</b>		
<b>1.</b>	<b>r.DNA Technology</b>	It helps to identify, map and sequence genes and to determine their function. It is used for different purposes like in research, medical, agriculture and industry.
<b>2.</b>	<b>Bioinformatics</b>	It helps to deal with computational management and analysis of biological information.
<b>3.</b>	<b>Food Biotechnology</b>	To study the fundamental, Physical, Chemical and Biochemical nature of foods. To study about principles of food processing.
<b>4.</b>	<b>Animal Biotechnology</b>	To study about the set of Biological tools and techniques used in animals for the development of products of commercial value.

  
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<b>SEMESTER - IV</b>		
<b>1.</b>	<b>Bioprocess Engineering</b>	It deals with design and development of equipments and processes for the manufacture of products like agriculture, food, pharmaceuticals etc...
<b>2.</b>	<b>Medical Biotechnology</b>	To study how living cells are used for research and production of pharmaceutical and diagnostic products that can treat and prevent human diseases.
<b>3.</b>	<b>Environmental Biotechnology</b>	To study about conservation of rareness by recycling of wastes. To study about environmental problems like detection of pollutants, elimination and detection of wastes.
<b>4.</b>	<b>Project Work</b>	To demonstrate the personal skills required to produce and present an extended piece of work. The students learn to choose relevant techniques.



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• **Course OUTCOMES (M.Sc. Biotechnology)**


<b>SEMESTER - I</b>		
1.	Cell Biology and Genetics	<ul style="list-style-type: none"> <li>• Comprehend the cellular architecture and processes.</li> <li>• Ability to apply Mendelian inheritance principles to humans, plants, animals.</li> <li>• Knowledge regarding the basic mechanisms underlying cell division and cell death.</li> </ul>
2.	Biological Chemistry	<ul style="list-style-type: none"> <li>• Understanding of how cells communicate and carry out Physiological processes.</li> <li>• Understanding the basics about bimolecular ,Bioenergetics and enzymology</li> </ul>
3.	Microbiology	<ul style="list-style-type: none"> <li>• To culture different bacteria and know how to preserve them.</li> <li>• Understanding the basics of Microbiology and Microbial classification.</li> </ul>
4.	biostatistics, laboratory management and safety ,entrepreneurship .	<ul style="list-style-type: none"> <li>• Good Laboratory Practices</li> <li>• How to be a successful entrepreneur</li> <li>• Learn to estimate appropriate descriptive measures for a date in a given study design.</li> </ul>



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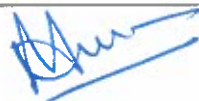
## SEMESTER - II

1.	<b>Molecular Biology- The Genome</b>	The subject gives in depth; knowledge of biological process through the investigation of molecular mechanism.
2.	<b>Molecular Biology- Genes to Protein</b>	The subject helps to form a research career in Molecular Biology or related areas
3.	<b>Immunology</b>	Students can learn about the latest research and development being carried out in Biotechnology and related areas.
4.	<b>Microbial Techniques</b>	Students can use micro-organisms to produce products of economic value and to decompose municipal and industrial wastes.

  
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<b>SEMESTER - III</b>		
1.	<b>r.DNA Technology</b>	It enables the creation of multiple copies of genes and gene manipulation.
2.	<b>Bioinformatics</b>	It helps the student to understand and organize the information associated with molecules on a large scale
3.	<b>Food Biotechnology</b>	Students learn about preservation, processing, packaging and distribution of food. Individuals can learn about sensory properties of food.
4.	<b>Animal Biotechnology</b>	Students can learn about Animal cell, tissue and organ culture techniques like IVF and Embryo transfer.

<b>SEMESTER - IV</b>		
1.	<b>Bioprocess Engineering</b>	Students learn to evaluate the cultivation, enrichment and growth prevention method of microbes. They can learn to judge how microbes and enzymes could be applies in industry.
2.	<b>Medical Biotechnology</b>	Students can learn about genetic disease and relate them to medical experience. They learn of gene therapy.
3.	<b>Environmental Biotechnology</b>	Students learn to keep the environment clean, to develop environmental friendly products and improve energy sources.
4.	<b>Project Work</b>	Students learn to show enthusiasm and commitment to the task. They learn to show overall perspective related to chose topic.



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Department of Botany

Programme: B.Sc., BZC

Year: 2017-2018

<b>Programme Objective (General)</b>
1. To foster an aptitude for science and the natural world.
2. To give the pupils the fundamental knowledge necessary for classifying and identifying various plants.
3. To provide top-notch botany instruction so our students can successfully enter the workforce.
4. Must be aware of the significance of plants in today's world, which includes afforestation.
5. To make the learners aware of the need to protect the environment and our natural resources.
<b>(Programme Outcomes) (General)</b>
PO- 1. Knowledge of plant diversity and its role in preserving ecological balance.
PO -2. Students gain practical experience in evaluating plant morphology and anatomy, plant identification, and tools for vegetation study.
PO- 3. Utilize their knowledge to protect endemic and threatened plant species.
PO- 4. The part that plants play in the global ecosystem's ability to operate.
PO -5. By the end of the course, a student will be able to comprehend various topics in botany, including taxonomy, evolution, ecology, physiology, plant interactions with microbes and insects, morphology, anatomy, reproduction, genetics, and molecular biology of numerous living forms.
<b>(Programme Specific Outcomes)</b>
PSO-1. The students are competent at working in teams to complete projects in the life sciences.
PSO -2. Students integrate their skills of medicinal and economic botany into their daily lives.

CO-4. Learners Learned about sex-linked inheritance, determining sex, cytoplasmic inheritance. linkage and crossing over, chromosomal aberration, polyploidy, and mutations. Recognize the muton, recon, and cistron concepts and the chemistry of the nucleus, including chromosomes.

CO-5. Students also explore the practical applications of biotechnology, with an emphasis on (a) hormone synthesis, (b) monoclonal antibodies, (c) and resolution of parentage disputes (DNA-fingerprinting), (d) Transgenic vegetation



Chairperson

**BOS**

Head Department of Botany  
Anwar-ul-Uloom Coll  
New Malleshpally, Hyderabad

**Department of Botany**  
**M.Sc Program outcomes (2017-18)**

<b>Programme Objectives (General)</b>
1. To enable the students understand new concepts in the Field of M.Sc. Botany.
2 To inculcate Scientific temperament among the students.
3 Skill based Knowledge. in Theory and Practical's. to be provided in the Course.
4 Exposure to New developments in the field of Cytogenetics and Genetics.
5 Study of plants diversity in various groups of plant kingdom.
<b>(Programme Outcomes) (General)</b>
PO- 1. This program is based on Project based Learning and is Research oriented. The topics in Cytogenetics are based on Recent and high level Research.  Students will learn and acquire knowledge of Recent Developments, in the Field of Botany.
PO -2 They understand the topics in Genetics at Molecular level of DNA .Gene sequencing Mutation Breeding and Bioinformatics.
PO- 3 Horticulture Techniques and Environmental Sciences also provide basis for learning and Application of Knowledge.
PO- 4 Enhances skills in Handling Scientific instruments, learns planning and executing Plant based Research.
PO -5 Knowledge about grouping, categorization and identification of plants using the Flora books.
<b>(Programme Specific Outcomes) PSO:</b> The student can understand the basic concepts of various subjects and their applications in real life situations.
PSO-1 The Students will be qualified to appear for CSIR-NET, SLET, GATE and also eligible for teaching at School level and Junior College.
PSO -2 Stewardship responsibility. Students can join Bioinformatics Lab for Drug designing Research.
PSO -3 Students can apply the knowledge of Horticulture for propagation of plants and develop a Nursery, as a business. They learn techniques of poly house maintenance and making a vertical garden. They learn about Environmental Management through

CO-5 Students understand the reason behind classification of plants and systematic position, based upon identifying salient features of the different Families. Economic importance and phylogeny of Dicots and Monocots can be enumerated.

CO-6 Students can go for Research in the Field of Taxonomy. They can enumerate the plants based on medicinal importance and Economic utility. They can apply the branch of Taxonomy to various fields of Botany like Palynology, Embryology, Evolution, Anatomy etc.

CO-7 Students learn and understand the systematic position of Algae in plant kingdom and can differentiate the Life cycles and their morphology. They can understand the use of Fungi in production of Alcohol, in the production of Antibiotics, and in understanding mycorrhizal association and also know the importance of Mushrooms as Nutraceuticals.



Chairperson

BOS  
Head Department of Botany  
Anwar-ul-Uloom College  
New Mallepally, Hyderabad.

**ANWAR UL ULOOM DEGREE COLLEGE**  
**DEPARTEMENT OF COMPUTER SCIENCE**  
**B.Sc. (MECS and MPCS)**  
**Academic Year – 2017-18**

**COURSE OBJECTIVES:**

1. To develop competencies and skills needed for becoming an effective Computer Programmer.
2. To familiarize the students with various approaches, methods and techniques of Information Technology.
3. Exploring different approaches in computer programming and problem solving skills.
4. To enable students to manage Software Projects from its Conceptual Stage to the final product creation.
5. To train students in logical thinking and problem solving skills so as to solve real world problems.
6. To develop expertise in Database Management and Digital Content management techniques.

**COURSE OUTCOMES:**

1. Understand basic concepts of Computer Systems its hardware and software
2. Learn various programming languages such as C, C++, Java, Python, HTML, PHP, XML, etc.
3. Awareness of Computer Viruses and Hackers
4. Learn and understand Cyber Security
5. understand and used computer networks and internet

**CHAIRMAN, BOS**  
**COMPUTER SCIENCE**  
**ANWARUL ULOOM COLLEGE**



B.Sc. (MECS & MPCS)

SEMESTER: FIRST

SUBJECT: PROGRAMMING IN C

**Course Objective:-**

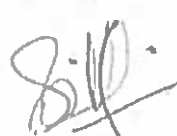
1. Learn fundamental concepts of computer system
2. Learn various types of computer memories and its purpose
3. Learn basic concepts of programming languages (data types, constants, variables, operators, control constructs.
4. Learn arrays, functions, structures, union and file handling concepts with practically implementing these concepts in a C program.

Unit	Unit – Objective	Learning Outcomes
1	Learn fundamentals of concepts of Computer System, functions, types, generations of computer. Input, output devices. Memory and its types	Understand basic concepts of programming language such as token, identifier, data types, constants and variables
2	Learn Data types, keywords, tokens, identifiers and control structures	Analyze a given problem and develop simple programs to solve the problem
3	Learn Programming features of C such as arrays and user defined functions	Improve upon a solution to a problem. Use the 'C' language constructs in the right way to solve critical problems
4	Learn string handling functions and function calls, function recursion	Using various function develop solutions for various problems
5	To Understands and learn data files and handling data files for databases	Working with data files in developing small c projects

**COURSE OUTCOMES:**

Upon successful completion of the course, a student will be able to:

1. Appreciate and understand the working of a digital computer
2. Analyze a given problem and develop an algorithm to solve the problem
3. Improve upon a solution to a problem
4. Use the 'C' language constructs in the right way
5. Design, develop and test programs written in 'C'

  
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COMPUTER SCIENCE  
AND APPLIED MATHEMATICS  
COLLEGE

SEMESTER: SECOND

SUBJECT: PROGRAMMING IN C++

**Course Objective:-**


4. Learn fundamental concepts of object oriented programming.
5. Learn various operations that can be performed on different data structures.
6. Learn to sort and search within the data structures.
5. Learn to implement and use data structures using C++ programming languages.

Unit	Unit – Objective	Learning Outcomes
1	Learn fundamentals of C++ Programming language such as tokens, keywords, identifiers, constants, variables and data types in C++	Appreciate and understand the basic concepts C++ Programming languages
2	Learn control structures, basic concepts of object oriented programming such as class, object, encapsulation, inheritance	Analyze a given problem and develop simple programs using OOP features in C++
3	Learn Programming features of C++ such as arrays and functions, inheritance and interface	Improve upon a solution to a problem. Use the 'C++' language constructs in the right way to solve critical problems
4	Learn dynamic memory allocation and exception handling features and functions in C++	Using various try, catch and throw and final develop error handling solutions for various problems
5	To Understands and learn stream classes and handling data files for databases	Working with data files in projects using stream classes and their respective objects and member functions.

**COURSE OUTCOMES**

Upon successful completion of the course, a student will be able to:

1. Analyze a given problem and develop C++ program to solve the problem
2. Improve upon a solution to a problem using object oriented features
3. Appreciate and understand the working of a classes and objects
4. Use the 'C++' language constructs in the right way to understand object oriented programming features and improve skills in OOP
5. Design, develop and test programs written in 'C++' using OOP

  
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COMPUTER SCIENCE  
ARWARUL ULOOM COLLEGE

SEMESTER: THIRD

SUBJECT: DATA STRUCTURES

### COURSE OBJECTIVE:

- ❖ Learn fundamental concepts of linear and non-linear data structures.
- ❖ Learn various operations that can be performed on different data structures.
- ❖ Learn to sort and search within the data structures.
- ❖ Learn to implement and use data structures using C++ programming languages.

Unit	Unit – Objective	Learning Outcomes
1	Learn fundamental concepts of linear and non-linear data structures, Classification of data structures and operations on data structures	Appreciate and understand the working of a linear and non-linear data structures and their features
2	Learn Array, Queues and Stack data structures with their representation in the computer memory.	Analyze a given problem and develop simple programs to solve the problem using Arrays, Queue and Stack
3	Learn linked list, its types and features of single, double, priority and circular linked list.	Improve upon a solution to a problem. Use linear list variations, constructs in the right way to solve critical problems
4	Learn to understand basic concepts of Tree and Graph data structures and their representation in memory.	Using binary tree and graph traverse in the database and develop solutions for various expressions
5	To Understands and learn Searching and Sorting with in the databases using various sorting techniques.	Implement sorting techniques to organize and search database. Working with data files in projects.

### COURSE OUTCOMES

Upon successful completion of the course, a student will be able to:

- ✓ To understand the concepts of various data structures and their use in the real world applications
- ✓ Analyze a given problem and develop an algorithm to solve the problem
- ✓ Improve upon a solution to a problem
- ✓ Use various data structures to implement in the software project
- ✓ Use data structures to develop and test data files and databases in a software project



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COMPUTER SCIENCE  
ANWARUL ULOOM COLLEGE

SEMESTER: FOURTH

SUBJECT: DATABASE MANAGEMENT SYSTEM

**COURSE OBJECTIVE:**

This subject is introduced to understand the various database technologies used in software industries, this subject gives insight into the database management system used in a variety of applications on servers, this skill in the students empowers them to handle the various databases manage them effectively with specialized skills, knowledge and attitude to work in Computer Industry.

Unit	Unit – Objective	Learning Outcomes
I	<p><b>Students will learn:</b></p> <ol style="list-style-type: none"> <li>1. The fundamentals of dbms and file system.</li> <li>2. Database approaches and roles.</li> <li>3. Advantages and disadvantages</li> <li>4. Architecture of dbms.</li> <li>5. Dbms languages.</li> <li>6. RDBMS models and other models.</li> <li>7. Views implementation</li> <li>8. The relational algebra</li> </ol>	<p><b>Students will be able</b></p> <ol style="list-style-type: none"> <li>1. To recognize the difference between dbms and file oriented systems.</li> <li>2. To identify the various roles and users of dbms.</li> <li>3. To recognize the advantages and disadvantages of dbms.</li> <li>4. To see inside the various architectures of the dbms.</li> <li>5. To use structured query language.</li> <li>6. To understand importance of data model.</li> <li>7. To use views for various purposes.</li> <li>8. To use of relational algebra.</li> </ol>
II	<p><b>Students will learn:</b></p> <ol style="list-style-type: none"> <li>1. Sql data manipulation.</li> <li>2. Aggregate functions.</li> <li>3. Grouping functions</li> <li>4. Joining table</li> <li>5. Data types in sql.</li> <li>6. Constraints in the dbms.</li> <li>7. Data definition languages.</li> <li>8. Views, view materialization,</li> <li>9. Transactions, discretionary access control-granting.</li> <li>10. Privileges to other users, revoking privileges from users.</li> <li>11. advanced sql:</li> </ol> <p style="text-align: center;"> <b>CHAIRMAN, BOS COMPUTER SCIENCE ANWARUL ULOOM COLLEGE</b></p>	<p><b>Students will be able to</b></p> <ol style="list-style-type: none"> <li>1. Use dml commands update, delete, insert commands.</li> <li>2. Use aggregate functions</li> <li>3. Use order by group by functions.</li> <li>4. Use inner join, outer join equi joins full joins etc.</li> <li>5. Handle the various data types.</li> <li>6. Apply the constraints on the field and on the table.</li> <li>7. Use ddl command to create objects such as user, table etc.</li> <li>8. Use transaction commands commit and rollback.</li> <li>9. Use the view and materialization views for various purpose.</li> <li>10. Grant the privileges and revoke the privileges.</li> <li>11. Use the advanced sql to write exceptions, cursors, subprograms, stored procedures, functions, and packages, triggers, recursion.</li> </ol>
III	<p><b>Students will learn:</b></p> <ol style="list-style-type: none"> <li>1. Entity-relationship modeling and enhanced entity-relationship modeling:</li> </ol>	<p><b>students will be able</b></p> <ol style="list-style-type: none"> <li>1. To create entity types, relationship types, attributes, keys, strong and weak entity types, attributes on</li> </ol>


	specialization/generalization, aggregation, composition. 2. Functional-dependencies. 3. Normalization how normalization supports database design.	relationships and able to create or diagrams using specialization/generalization, aggregation. 2. To recognize the anomalies, partial functional dependency, transitive functional dependency, multi-valued dependency, join dependency. 3. To do Normalization on tables in 1nf,2nf, 3nf, BCNF.
IV	<b>Students will to learn:</b> 1. Transaction Management. 2. Concurrency Control. 3. Deadlock & Time Stamping Methods, 4. Granularity of Data Items, 5. Database Recovery- 6. Security: Database Security- 7. Backup and Recovery..	<b>Students will be able to</b> 1. Understand properties of transactions, database architecture, 2. Recognize the need for concurrency control, serializability and recoverability, locking methods. 3. Use deadlock, multi-version timestamp ordering, optimistic techniques. 4. Understand the granularity of data items. 5. To recognize the need for recovery, recovery facilities, Recovery techniques. 6. To recognize the security-threats, authorization, access controls, views, 7. Use the backup and recovery of databases



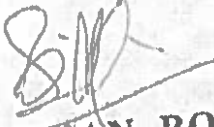
**CHAIRMAN, BOS**  
**COMPUTER SCIENCE**  
**ANWARUL ULOOM COLLEGE**

**COURSE OBJECTIVE:**

This subject is introduced to understand the various database technologies used in software industries, this subject gives inside into the database management system used in variety of applications on servers, this skill in the students empower them to handle the various databases manage them effectively with specialized skills, knowledge and attitude to work in Computer Industry.

Unit	Unit – Objective	Learning Outcomes
I	<p><b>Students will learn:</b></p> <ul style="list-style-type: none"> <li>9. The fundamentals of dbms and file system.</li> <li>10. Database approaches and roles.</li> <li>11. Advantages and disadvantages</li> <li>12. Architecture of dbms.</li> <li>13. Dbms languages.</li> <li>14. RDBMS models and other models.</li> <li>15. Views implementation</li> <li>16. The relational algebra</li> </ul>	<p><b>Students will be able</b></p> <ul style="list-style-type: none"> <li>9. To recognize the difference between dbms and file oriented systems.</li> <li>10. To identify the various roles and users of dbms.</li> <li>11. To recognize the advantages and disadvantages of dbms.</li> <li>12. To see inside the various architectures of the dbms.</li> <li>13. To use structured query language.</li> <li>14. To understand importance of data model.</li> <li>15. To use views for various purposes.</li> <li>16. To use of relational algebra.</li> </ul>
II	<p><b>Students will learn:</b></p> <ul style="list-style-type: none"> <li>12. Sql data manipulation.</li> <li>13. Aggregate functions.</li> <li>14. Grouping functions</li> <li>15. Joining table</li> <li>16. Data types in sql.</li> <li>17. Constraints in the dbms.</li> <li>18. Data definition languages.</li> <li>19. Views, view materialization,</li> <li>20. Transactions, discretionary access control-granting.</li> <li>21. Privileges to other users, revoking privileges from users.</li> <li>22. advanced sql:</li> </ul> <p style="text-align: center;">   <b>CHAIRMAN, BOS</b>  <b>COMPUTER SCIENCE</b>  <b>ANWARUL ULOOM COLLEGE</b> </p>	<p><b>Students will be able to</b></p> <ul style="list-style-type: none"> <li>12. Use dml commands update, delete, insert commands.</li> <li>13. Use aggregate functions</li> <li>14. Use order by group by functions.</li> <li>15. Use inner join, outer join equi joins full joins etc.</li> <li>16. Handle the various data types.</li> <li>17. Apply the constraints on the filed and on the table.</li> <li>18. Use ddl command to create objects such as user, table etc.</li> <li>19. Use transaction commands commit and rollback.</li> <li>20. Use the view and materialization views for various purpose.</li> <li>21. Grant the privileges and revoke the privileges.</li> <li>22. Use the advanced sql to write exceptions, cursors, subprograms, stored procedures, functions, and packages, triggers, recursion.</li> </ul>
III	<p><b>Students will learn:</b></p> <ul style="list-style-type: none"> <li>4. Entity-relationship modeling and enhanced entity-relationship modeling: specialization/generalization,</li> </ul>	<p><b>students will be able</b></p> <ul style="list-style-type: none"> <li>4. To create entity types, relationship types, attributes, keys, strong and weak entity types, attributes on relationships and able to create er</li> </ul>

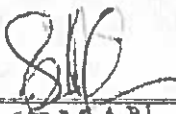
	aggregation, composition, 5. Functional-dependencies. 6. Normalization how normalization supports database design.	diagrams using specialization/generalization, aggregation, 5. To recognize the anomalies, partial functional dependency, transitive functional dependency, multi-valued dependency, join dependency. 6. To do Normalization on tables in 1nf,2nf, 3nf, BCNF.
IV	<b>Students will to learn:</b> 1. Transaction Management. 2. Concurrency Control. 3. Deadlock & Time Stamping Methods, 4. Granularity of Data Items, 5. Database Recovery- 6. Security: Database Security- 7. Backup and Recovery..	<b>Students will be able to</b> 8. Understand properties of transactions, database architecture, 9. Recognize the need for concurrency control, serializability and recoverability, locking methods. 10. Use deadlock, multi-version timestamp ordering, optimistic techniques. 11. Understand the granularity of data items. 12. To recognize the need for recovery, recovery facilities, Recovery techniques. 13. To recognize the security-threats, authorization, access controls, views, 14. Use the backup and recovery of databases

  
**CHAIRMAN, BOS**  
**COMPUTER SCIENCE**  
**ANWARUL ULOOM COLLEGE**

**Course Objective:-**

This subject is introduced to understand the various operating systems used in software industries, this subject gives insight into the operating system used on the various computers like desktop and servers, this skill in the students empowers them to become software developers with specialized skills, knowledge and attitude to work in Computer Industry.

Unit	Unit – Objective	Learning Outcomes
1	<b>Students will try to learn:</b> <ol style="list-style-type: none"> <li>1. The fundamentals computers operating system, architecture and computing environment</li> <li>2. The operating system services</li> <li>3. The various user interfaces</li> <li>4. System calls and their usage.</li> <li>5. The process structure and process management.</li> <li>6. The ipc and synchronization</li> <li>7. Critical-section problem.</li> </ol>	<b>Students will be able</b> <ol style="list-style-type: none"> <li>1. To classify the computer architecture and environments.</li> <li>2. To understand services offered by various OS.</li> <li>3. To use the various interface.</li> <li>4. To use system calls.</li> <li>5. To manage the process using system calls &amp; analyze the various scheduling algorithms.</li> <li>6. To find the problems inter process communication, and able to solve the producer-consumer</li> <li>7. To analyze the peterson's solution, semaphores. Monitors and their usage.</li> </ol>
2	<b>Students will try to learn:</b> <ol style="list-style-type: none"> <li>1. CPU scheduling and scheduling criteria, scheduling algorithms.</li> <li>2. Deadlocks: system model, deadlock characterization.</li> <li>3. Methods for handling deadlocks, deadlock prevention, deadlock avoidance, deadlock detection,</li> <li>4. Recovery from deadlock.</li> </ol>	<b>Students will be able</b> <ol style="list-style-type: none"> <li>23. To analyze the various scheduling algorithms and solve the problems to optimize the use of CPU.</li> <li>24. To understand the deadlock and necessary conditions for deadlock.</li> <li>25. To handle deadlocks and able to detect the deadlock in the system and also avoid the deadlock.</li> <li>26. To recover the system from deadlock.</li> </ol>
3	<b>Students will try to learn:</b> <ol style="list-style-type: none"> <li>1. Various memory management techniques.</li> <li>2. Virtual memory</li> <li>3. Various mass storage structures.</li> <li>4. Disk scheduling.</li> <li>5. File and directory structures.</li> <li>6. Free space management.</li> </ol>	<b>Students will be able</b> <ol style="list-style-type: none"> <li>1. To understand swapping, contiguous memory allocation, segmentation.</li> <li>2. To recognize the virtual memory like paging, demand paging, page replacement, allocation of frames.</li> <li>3. To understand the mass-storage structure raid and it's level.</li> <li>4. To analyze various disk scheduling algorithms.</li> <li>5. To implement the file and directory and mounting file.</li> <li>6. To manage the free-space.</li> </ol>

  
**CHAIRMAN, BOS**  
**COMPUTER SCIENCE**  
**ANWARUL ULOOM COLLEGE**



## Course Objective:-

This subject is introduced to understand the various technologies used in web development, this subject gives insight into the web technologies used in client server programming in computer industries, this skill in the students empowers them to handle the various web development technologies and markup languages effectively, with specialized skills, knowledge and attitude students can work in Computer Industry.

Unit	Unit – Objective	Learning Outcomes
I	Students will try to learn: 1. Structuring Documents for the Web: 2. Links and Navigation tags: 3. Images, Audio, and Video tags 4. List and Table tags	Students will be able 1. To do Basic Text Formatting and Editing Text, Core Elements and Attributes, Attribute Groups. 2. To create Links with the <a> Element, Advanced E- mail Links. And navigation. 3. To Add Images Using the <img> Element, Use Images as Links Image , Add Flash, Video and Audio to your web 4. To create various types of List Hyperlinking list elements, and able to create table and Nested Tables,
II	Students will try to learn: 1. Frames creation in html 2. Forms creation in html 3. Cascading Style Sheets and it's types	Students will be able 1. To create use Frames using Frameset, <frame> Element, Creating Links Between Frames, , Nested Framesets, <iframe>. 2. To create Forms and Form Controls, also Sending Form Data to the Server 3. To create various CSS and Rules, Properties and also Positioning and Layout with CSS.
III	Students will try to learn: 1. Web Technologies used to Develop application for Mobile Devices. 2. JavaScript code and uses. Working with JavaScript:	Students will be able 1. To understand the web application for Mobile Devices such as Design Issues: Typography, Navigation, Tables, Forms. 2. To create and use JavaScript feature for web development.
IV	Students will try to learn: 1. PHP Language Basics 2. Protocols used in web development 3. Latest Web Development Trends	Students will be able 1. To understand and use PHP script for web development. 2. To understand the various protocols used in web development such as TCP/IP, HTTP, S-HTTP, SMTP, Wireless Protocols, IMAP. 3. To understand Latest Web Development Trends such as AI or Bots, Progressive Web App, Mobile-Friendly Website, Motion UI, Web Development Frameworks. Etc.



**CHAIRMAN, BOS  
COMPUTER SCIENCE**

**ANWARUL ULOOM COLLEGE**

**Course Objective:-**

This subject is introduced to understand the various networking technologies used in industries, this subject gives insight into the networks configuration and administration used in variety of computer industries, this skill in the students empower them to manage and handle the various networks effectively, with specialized skills, knowledge and attitude students can work in Computer Industry.

Unit	Unit – Objective	Learning Outcomes
I	<b>Students will try to learn:</b> <ol style="list-style-type: none"> <li>1. Data Communication Components,</li> <li>2. Line Configuration, Topologies, Transmission Mode.</li> <li>3. Categories of Networks, ISO Reference Model.</li> <li>4. Guided Media Unguided Media.</li> </ol>	<b>Students will be able</b> <ol style="list-style-type: none"> <li>1.To understand the Data Communication Components.</li> <li>2.To recognize the Topologies, Transmission Mode.</li> <li>3.To understand the Layered Architecture, Functions of Layers In TCP/IP.</li> <li>4.To distinguish between guided media and unguided media.</li> </ol>
II	<b>Students will try to learn:</b> <ol style="list-style-type: none"> <li>1.Multiplexing FDM and TDM</li> <li>2. Data Link Layer and its various algorithms and its uses.</li> </ol>	<b>Students will be able</b> <ol style="list-style-type: none"> <li>1. To understand the FDM and TDM and its application.</li> <li>2. To recognize various algorithm and used in data link layer and what are advantages and disadvantages of various algorithms.</li> </ol>
III	<b>Students will try to learn:</b> <ol style="list-style-type: none"> <li>1.Local Area Networks and its standards and its implementation</li> <li>2.Networking and Internetworking Devices used to implement the network.</li> </ol>	<b>Students will be able</b> <ol style="list-style-type: none"> <li>1.To understand the IEEE standards in Local Area Networks and its Implementation.</li> <li>2.To understand the use of various Devices such as Repeaters, Bridges, Routers, Gateways, and Routing Algorithm.</li> </ol>
IV	<b>Students will try to learn:</b> <ol style="list-style-type: none"> <li>1.Medium Access Sub Layer.</li> <li>2.Internet Working</li> <li>3.Transport Layer function and working .</li> </ol>	<b>Students will be able</b> <ol style="list-style-type: none"> <li>1.To understand the ALOHA, MAC addresses, CSMA, IEEE, 802.x Standard Ethernet, Wireless LANS, Bridges.</li> <li>2.To Understand The Network Layer in the Internet and in ATM Networks</li> <li>3.To Understand the Transport Layer algorithm and Duties of Transport Layer,</li> </ol>

  
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**COMPUTER SCIENCE**  
**ANWARUL ULOOM COLLEGE**



# ANWARUL ULOOM COLLEGE (AUTONOMOUS)

(Accredited by NAAC with 'A' Grade & An ISO 9001:2015 Certified Institution)

(Affiliated to Osmania University, Hyderabad)

Ref. No. \_\_\_\_\_

Date: \_\_\_\_\_

(2017 - 2018)

Department Name:-B.Sc (COMPUTER SCIENCE & ENGINEERING)

**Program Objective B.Sc.(Computer Science and Engineering) prepare Graduates to:**

1. Work effectively as successful Computer professionals in diverse career paths including supportive and leadership roles on multidisciplinary teams or be active in higher studies,
2. Communicate effectively, analyze, recognize and incorporate societal needs and constraints in their professional endeavors, and practice their profession with high regard to ethical responsibilities,
3. Engage in life-long learning and to remain current in their profession to foster personal and organizational growth.

**Program Outcomes B.Sc.(Computer Science and Engineering)**

PO1 - Engineering knowledge: Apply the knowledge of Computer Science, mathematics, and electronics and an engineering specialization to the solution of complex engineering problems.

PO2 - Problem analysis: Identify, analyze, formulate complex computer Science and engineering problems reaching substantiated conclusions using first principles of mathematics and Computer Science.

PO3 - Design/development of solutions: Design solutions for complex Computer Science engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and considerations.

PO4 - Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO6 - Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO7- Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO8 - Project management: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO9 - Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

**Program Specific Outcomes : On completion of the B.Sc. (CSE) degree the graduates will be able to**

POS -1. To find the successful careers in Software or Information Technology field or will be able to successfully pursue advanced degrees.

POS -2. Apply standard Software Engineering practices and strategies in real-time software project development using open-source programming environment or commercial environment to deliver quality product for the organization success

  
HEAD  
Dept. of Computer Science & Engg  
A.U. College Mallepally, Hyderabad.

# 11-3-918, New Mallepally, Hyderabad – 500 001. Telangana State, INDIA.

Ph. No. : 01 40 2334 0134, 2334 2385, 2334 4175, 2334 8343, 2334 2470. Fax: 01 40 2334 2750



# ANWARUL ULOOM COLLEGE (AUTONOMOUS)

Accredited by NAAC with 'A' Grade & An ISO 9001:2015 Certified Institution)

(Affiliated to Osmania University, Hyderabad)

Ref. No. \_\_\_\_\_

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POS -3. Design and develop computer programs/computer-based systems in the areas related to algorithms, networking, web design, databases, IoT and data Science of varying complexity

POS -4. Acquaint with the contemporary trends in industrial/research settings and thereby innovate novel solutions to existing problems

## *Mathematics - I*

**The objective of this course is to introduce:**

1. Quantitative problems based on vector analysis and matrix analysis such as linear independence and dependence of vectors, rank etc.
2. Concepts of limit theory, nth order differential equations and their applications to our daily life
3. Problems of differentiation of functions of two variables and the maximization and minimization of functions of several variables.
4. Applications of double and triple integration in finding the area and volume
5. Applications of Gauss, Stoke's and Green's theorem

**Course outcomes: At the end of course students will be able:**

- CO-1. To solve Quantitative problems based on vector & matrix analysis such as linear independence & dependence of vectors, rank etc.
- CO -2. To understand the concepts of limit theory and nth order differential equations and their applications to our daily life
- CO -3. To solve the problems of differentiation of functions of 2 variables and the maximization & minimization of functions of several variables.
- CO -4. To know the applications of double and triple integration in finding the area and volume
- CO -5. To Know about qualitative applications of Gauss ,Stoke's and Green's theorem

## *Electrical Circuits & Machines (E C M )*

**Course objectives: The objective of this course is:**

1. To introduces the basic concepts of network and circuit analysis which is the foundation of the Electrical Engineering discipline.
2. To introduces the basic analysis of circuits, network analysis, 1-phase ac circuits, and magnetic circuits.
3. To introduces knowledge of mathematics, science, & engineering to the analysis & design of electrical circuits.
4. To introduces circuit theorems to simplify and solve complex DC and AC electric networks.

**Course outcomes: At the end of course students will be able:**

- CO -1. Able to realize the working principles of electrical circuits and measuring instruments
- CO -2. Able to analyze linear electric circuits to determine DC response.
- CO -3. Able to analyze linear electric circuits to determine AC response.
- CO -4. Able to identify the type of electrical machine used for that particular application.
- CO -5. To apply knowledge of mathematics, science, & engineering to the analysis and design of electrical circuits.

## *E C M Lab*

**Course objectives: The objective of this course is:**

1. Expose to the characteristic of control of a D C shunt motor
2. Introduce Load test on a D C Shunt Generator
3. Introduce Fields Test . Hopkinson Test
4. Introduce Swinburne's Test
5. Expose to MAT lab Software.

**Course outcomes: At the end of course students will be able:**

1. Able to understand Speed control of a D C shunt motor
2. Able to understand Load test on a D C Shunt Generator
3. Able to understand Fields Test and Hopkinson Test
4. Able to understand swinburne's Test
5. Able to understand use of MAT lab.

  
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Ref. No. \_\_\_\_\_

Date: \_\_\_\_\_

## Int. to Information Technology ( IIT )

Course objectives: The objective of this course is:

1. To introduce the fundamental of computer software, hardware and data processing.
2. To introduce various operating system.
3. To acquire knowledge of MS-Word.
4. To familiarize MS-Excel.
5. To introduce various operators of Ms-Access, MS Power Point

Course outcomes: At the end of course students will be able:

- CO -1. To understand the computer components, hardware and software concepts of data processing  
CO -2. To understand the different OS, DOS, UNIX, OS Commands, windows explorer, Accessories.  
CO -3. To understand features and use of MS-Word,  
CO -4. To understand features and use of MS-EXCEL,  
CO -5. To understand features and use of M S – PowerPoint – MS Access & Types of Networks.

## I I T Lab

Course objectives: The objective of this course is:

1. To design a visiting card, creating letter head, Bio data using Ms –Word.
2. To make a power point presentation.
3. To create a Database using Ms-Access.
4. To understand various operators of Ms-Access.
5. To create an electronic spreadsheet using Ms-Excel.

Course outcomes: At the end of course students will be able:

- CO -1. to create letter head, visiting card using Ms-word.  
CO -2. to create presentation on Current Affairs, College profile, books details.  
CO -3. to create Database using M S Access, the relationship between tables and creating report.  
CO -4. to create MS-EXCEL Spread Sheet, formatting, apply formula on spread sheet.  
CO -5. To Create column Chart, 3 D – Column and Bar Chart for representing in Ms-Excel .

## Programming in C

Course objectives: The objective of this course is:

1. To introduce the fundamental concepts of c language , program, tools ,flowcharts ,algorithms
2. To introduce various looping and decision making statement , io statements, arrays .
3. To introduce the functions and its types, structure and union.
4. To familiarize various Storage classes, dynamic memory mgmt.
5. To introduce the concepts of pointers and files.

Course outcomes: At the end of course students will be able:

- CO -1. Understand the fundamental concepts of c language, program, tools flowcharts, algorithms  
CO -2. able to Use various looping and decision making statement , io statements, arrays .  
CO -3. Able to Use the functions and its types , structure and union  
CO -4. Able to Select Storage classes, dynamic memory mgmt.  
CO -5. able to understand the concepts of pointers and files

  
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## Programming in C Lab

**Course objectives: The objective of this course is:**

1. To write programs for solving real world problems using c.
2. To introduce use of various decision making statements.
3. To write programs using arrays .
4. To write programs using structures
5. To write real world applications using c

**Course outcomes: At the end of course students will be able:**

- CO -1. To write programs for solving real world problems using c language
- CO -2. To write program using decision statements.
- CO -3. To write programs for sorting and searching and matrix operations using array.
- CO -4. To use structures in real time applications.
- CO -5. To use c language in real world applications.

## INTRODUCTION TO INTERNET

**Objective: student try to learn**

- 1.To understand the basic concepts of networking architecture and its protocols
- 2.To understand the internet ,email and news group.
- 3.To understand the use of different tools using in internet and how to handle the common problems on internet.

**Outcome: Student are able to**

- 1.Define and use the network
2. Use the internet , email and work on groups
- 3 Solve the common problems on the network and internet.

## Mathematics – II

**Course objectives: The objective of this course is to introduce:**

1. Basics of matrices, complex numbers, and differential calculus.
2. The concepts of The Bisection false position, the Iteration & Newton – Raphson method
3. Taylor's series, Picord's methodn, Euler's method,Rung – Kutta methods
4. Eigen values & vectors,Cayley – Hamilton theorem,Inverse and powers of a matrix by Cayley
5. The problems fourier series ,even & odd functions, period continuation Half range Fourier Sine & Cosine expansions.

**Course outcomes: At the end of course students will be able:**

- CO -1.To recall and remember basics of matrices, complex numbers, and differential calculus.
- CO -2. to understand the Bisection false position, the Iteration Newton – Raphson method
- CO -3.To apply solution by Taylor's series, Picord's, Euler's method,Rung – Kutta methods
- CO -4. To analyze Eigen values & vectors,Cayley – Hamilton theorem,Inverse & powers of a matrix.
- CO -5. To solve and evaluate the problems Fourier series ,even & odd functions, period continuation Half range Fourier Sine and Cosine expansions.

  
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Date: \_\_\_\_\_

## Physics

**Course objectives:** The objective of this course is to introduce :

1. Different types of matter depending on nature chemical bonds and their properties
2. Concept of wave function, physical significance and its applications to quantum mechanical problems.
3. Concepts of semiconductor physics
4. The idea of superconductivity and importance in advancement of technologies
5. Principle, properties and applications of Lasers and optical fibres

**Course outcomes:** At the end of course students will be able:

- CO -1: Analyze the crystal structures by applying crystallographic parameters.
- CO -2: Learn and to apply concepts learnt in Quantum mechanics to one dimensional problems
- CO -3: Write down the concepts related to solid state physics and material science.
- CO -4: Understand application of Lasers in Medicine, Industry etc.,
- CO -5: Understand applications of optical fibres in Medicine and Sensors.

## Electronic Devices & Circuits

**Course objectives:** The objective of this course is:

1. Outline the operation of PN junction diode and its characteristics.
2. Illustrate the operation of Bipolar Junction Transistor and its characteristics.
3. Demonstrate the operation of JFET and MOSFET and their characteristics.
4. Introduce extend the operation of semiconductor devices.
5. Introduce the feedback amplifier Concept, classification, characteristics ,feedback effect.

**Course outcomes:** At the end of course students will be able:

- CO -1. To describe the behaviour and purpose of various diodes.
- CO -2. To Understand and analyze bipolar junction transistor (BJT).
- CO -3. To demonstrate the switching & amplification of the semiconductor devices (FET).
- CO -4. To understand Extend the operation of semiconductor devices.
- CO -5. Able to understand the feedback amplifier Concept, classification, characteristics and effects.

## Electronic Devices & Circuits Lab

**Course objectives:** The objective of this course is:

1. To be exposed to the characteristics of basic electronic devices
2. To be exposed to the characteristics of Transistor
3. To be exposed to the characteristics various types of Diodes
4. To be exposed to the various types of rectifiers.
5. To be exposed to the characteristics FET and BJT

**Course outcomes:** At the end of course students will be able:

- CO -1. To understand the characteristics of basic electronic devices.
- CO -2. To understand the Characteristics of P-N diode, zener diode.
- CO -3. To understand the various types of rectifiers & amplifiers.
- CO -4. To understand the Characteristics of Transistor.
- CO -5. To understand FET and BJT uses

  
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## UNIX Programming

**Course objectives: The objective of this course is:**

1. To introduce UNIX file system, Utilities, vi editor, file, process & disk handling commands
2. To introduce problem solving using shell scripts, born shells, commands, pipes, scripts & variables etc.
3. To familiarize the students to Low level file access and system calls.
4. To equip the students with Unix io, formatted commands.
5. To equip the students file and directory handling commands.

**Course outcomes: At the end of course students will be able:**

- CO -1. To understand the UNIX file system, Utilities commands for vi, file, process & disk handling commands .
- CO -2. To solve the problems using shell scripts, born shells, various commands, pipes, scripts & variables etc.
- CO -3. To know the Low level file access and system calls.
- CO -4. To use Unix io commands, formatted io commands and directory handling commands.
- CO -5. To use file and directory handling commands

## UNIX Programming Lab

**Course objectives: The objective of this course is:**

1. To write programs for solving real world problems using shell scripts.
2. To Familiar with vi editor commands.
3. To introduce Unix shell commands.
4. To write programs using system calls .
5. To introduce grep and other pattern matching commands

**Course outcomes: At the end of course students will be able:**

- CO -1. To write programs for solving real world problems using shell scripts.
- CO -2. To work with vi editor commands.
- CO -3. To use Unix shell commands.
- CO -4. To write programs using system calls.
- CO -5. To use pattern matching commands.

## Mathematics – III

**Course objectives: The objective of this course is to introduce:**

1. Gamma function and beta function and their Recurrence relations, complex integration
2. Finite and Infinite Fourier Transforms and applications.
3. Concept of analytic function, C-R equations and its uses.
4. Cauchy's theorem and its uses in complex integration. Taylor's and Laurent's series in complex form.
5. Learn about Cauchy Residues theorem and contour integrations.

**Course outcomes: At the end of course students will be able:**

- CO -1. To solve Gamma function and beta function and their Recurrence relations, complex integration
- CO -2. To gain knowledge of Finite and Infinite Fourier Transforms and applications.
- CO -3. Familiarize with the concept of analytic function, C-R equations and its uses.
- CO -4. To use about Cauchy's theorem & its uses in complex integration. Taylor's & Laurent's series in complex form.
- CO -5. To know about Cauchy Residues theorem and contour integrations

  
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Date: \_\_\_\_\_

## Digital Logic Design

**Course objectives: The objective of this course is:**

1. To Identify and use Number Systems.
2. To learn about Basic Gates and Universal Gate.
3. To learn about Full and Half Adder using Gates.
4. To learn about Sequential Logic Circuits.
5. To learn about Register and Counters.

**Course outcomes: At the end of course students will be able:**

- CO -1. To recognize different types of number system related to computers.
- CO -2. To use Logic Gates and Universal Gates.
- CO -3. To construct half and full adder using gates.
- CO -4. To design and analyze Sequential Logic Circuits
- CO -5. To Gain Knowledge about Registers, Multiplexer and counters

## Digital Logic Design Lab

**Course objectives: The objective of this course is:**

1. To become familiar with basic logic gates and their functions.
2. To implement a Half and Full adder circuit.
3. To implement Registers, Multiplexer and counters
4. To implement use of mux, demux .
5. To learn Encoder and Decoder by implementing a counter using 7 segment display & keypad.

**Course outcomes: At the end of course students will be able:**

- CO -1. To use Logic Gates and Universal Gates
- CO -2. To design Full and Half Adder and Subtract or Using various Gates.
- CO -3. To design Shift Registers and Counters.
- CO -4. To get pulse generator for Output Broadband Connector and frequency.
- CO -5. To design Binary Static Switches.

## Operating System

**Course objectives: The objective of this course is:**

1. Provide an introduction to operating system concepts (processes, threads, scheduling.)
2. To introduce Inter process communication.
3. To introduce synchronization, deadlocks.
4. To introduce memory management techniques.
5. To introduce file and directory structure and protection

**Course outcomes: At the end of course students will be able:**

- CO -1. To gain the knowledge of process thread and scheduling.
- CO -2. To understand the concepts of inter process communication.
- CO -3. To gain the knowledge of the deadlocks and it's handling.
- CO -4. To understand the various memory management techniques
- CO -5. To gain practical knowledge of file and directory structure and protection.

  
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## **Operating System Lab**

**Course objectives: The objective of this course is:**

1. To use dos and unix os commands.
2. To write program for CPU scheduling algorithms.
3. To write program for bankers algorithm for deadlock avoidance.
4. To write program for memory management.
5. To write program for FIFO page replacement algorithm.

**Course outcomes: At the end of course students will be able:**

- CO -1. To use dos and unix os commands.
- CO -2. To write program using CPU scheduling algorithms.
- CO -3. To write program using bankers algorithm for deadlock avoidance.
- CO -4. To write program using memory management.
- CO -5. To write program using FIFO page replacement algorithm

## **OOP Through C++**

**Course objectives: The objective of this course is:**

1. Introduces Object Oriented Programming concepts using the C++ language
2. introduces the principles of data abstraction, inheritance and polymorphism;
3. Introduces the functions and arrays
4. Introduces the principles of virtual functions and polymorphism
5. Introduces exception handling

**Course outcomes: At the end of course students will be able:**

- CO -1. To understand the OOP concepts.
- CO -2. To develop programs with reusability
- CO -3. To develop programs with array, functions and polymorphism.
- CO -4. To handle exceptions in programming
- CO -5. To develop applications for a range of problems using OOP programming techniques

## **OOP Through C++**

**Course objectives: The objective of this course is:**

1. To introduce Object Oriented Programming concepts using the C++ language
2. To introduce the principles of data abstraction, inheritance and polymorphism;
3. To introduce the functions and arrays
4. To introduce exception handling & virtual functions
5. To introduce various applications using OOP concepts.

**Course outcomes: At the end of course students will be able:**

- CO -1. To analyze and solve the programs in C++ programs .
- CO -2. To develop programs with reusability in C ++
- CO -3. To Develop programs with array , functions and polymorphism.
- CO -4. To Develop programs to handle exceptions in programming
- CO -5. To Develop applications for a range of problems using OOP techniques.

  
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Date: \_\_\_\_\_

## M – Commerce

**Course objectives: The objective of this course is introduce :**

1. what are the benefits of M-commerce.
2. what problems are going to face by M-commerce.
3. How M-commerce can be grown.
4. the banking services of the consumers.
5. Business-to-consumer transactions conducted from a mobile devices.

**Course outcomes: At the end of course students will be able:**

- POS -1. To understand what are the benefits of M-commerce.  
POS -2. To know the problems are faced by M-commerce.  
POS -3. To understand how M-commerce can be grown.  
POS -4. To understand the banking services of the consumers.  
POS -5. To understand Business-to-consumer transactions conducted from mobile devices.

## Probability & Statistics

**Course objectives: The objective of this course is:**

1. To introduce of probability Also measures of central tendency
2. To introduce binomial, Poisson and normal distributions and their applications in different engineering, science and social science fields etc.
3. To introduce sampling distribution and point and interval estimation using z and t.
4. To introduce Statistical model with different statistical techniques like chi square distribution.
5. To introduce the problems with correlation and regression analysis

**Course outcomes: At the end of course students will be able:**

- CO -1. To understand the problems of probability and measures of central tendency  
CO -2. To know about binomial, Poisson, normal distributions and their applications in different engg., science & social science fields etc.  
CO -3. To know about sampling distribution and point and interval estimation using z and t  
CO -4. To solve the statistical model with different statistical techniques like chi square distribution.  
CO -5. To understand the problems and solve them with correlation and regression analysis  
CO -6.

## Micro Processor 8086 and Interfacing

**Course objectives: The objective of this course is:**

1. Introduce the architecture of 8086 microprocessors.
2. Introduce microprocessors and microcontrollers
3. Introduce programs for microprocessor and microcontrollers
4. Introduce 8051 microcontroller concepts, architecture and programming
5. Introduce Peripherals of Micro Computer System.

**Course outcomes: At the end of course students will be able:**

- CO -1. To know about architecture of 8086 microprocessors.  
CO -2. To understand the basics of microprocessors and microcontrollers arch. & its functionalities.  
CO -3. To understanding machine language programming & interfacing techniques.  
CO -4. To design and develop microcontroller based real time applications using ALP.  
CO -5. Understand the concepts of ARM processor

  
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Date: \_\_\_\_\_

## **Micro Processor 8086 & Interfacing LAB**

**Course objectives: The objective of this course is:**

1. To learn about Assemble Language Programming (ALP).
2. To write ALP for Arithmetic operation on 16 Bit Unsigned numbers
3. To write ALP for Sorting of an Array of Number
4. To write ALP for finding the median from the list of numbers and length of given String
5. To write ALP for displaying the Character on Led and Number on 7-Segment Display.

**Course outcomes: At the end of course students will be able:**

- CO -1. Able to write ALP programs using Microsoft Macro Assembler 8.0 (MASM) tool.
- CO -2. Able to write ALP for addition ,subtraction, Multiplication and Division unsigned 16 bits nos.
- CO -3. Able to write ALP for arrays and for Rotating of Stepper Motor
- CO -4. Able to write ALP for median from list, length of string and Reversing of a given string..
- CO -5. Able to write ALP for displaying the Character on Led and Number on 7-Segment Display.

### **Data Structure**

**Course objectives: The objective of this course is:**

1. Exploring data structures such as stacks and queues.
2. Introduces various types of linked lists.
3. Introduces a variety of data structures such as tree, graphs
4. Introduces sorting algorithms
5. Introduces searching algorithms

**Course outcomes: At the end of course students will be able:**

- CO -1. To select the data structures (stack, queue etc) that model the problems in real world.
- CO -2. To use the linked list to model the information in a problem.
- CO -3. To know the use of tree and graph in applications.
- CO -4. To Implement sorting algorithms(bubble sort quick sort etc.)
- CO -5. To Implement searching algorithms( linear, binary search) and assess efficiency trade-offs among different algorithms.

### **Data Structure LAB**

**Course objectives: The objective of this course is:**

1. To introduces searching and sorting algorithms
2. To introduces linked list and its operations
3. To provides an understanding and programs on stacks and queues.
4. To introduces programs on graphs.
5. To introduces programs on trees.

**Course outcomes: At the end of course students will be able:**

- CO -1. To understand and implement searching and sorting algorithms
- CO -2. To understand and implement linked list and its operations
- CO -3. To develop programs for computing and real-life applications using stacks, queues.
- CO -4. To write programs using graphs and assess efficiency trade-offs among different algorithms.
- CO -5. To write programs using trees and assess efficiency trade-offs among different algorithms.

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## Programming in Java

**Course objectives: The objective of this course is:**

1. To introduce the object oriented programming concepts.
2. To introduce java programming in solving problems.
3. To introduce the principles of inheritance and polymorphism
4. To introduce the implementation of packages and interfaces
5. To introduce the concepts of exception handling and multithreading.

**Course outcomes: At the end of course students will be able:**

- CO -1. To solve real world problems using OOP techniques
- CO -2. To solve problems using java collection framework and I/O classes.
- CO -3. To develop multithreaded applications with synchronization.
- CO -4. To develop applications using packages and interface
- CO -5. To design programs using exception handling and multithreading.

## JAVA Programming LAB

**Course objectives: The objective of this course is:**

1. To introduce java compiler and eclipse platform.
2. To write programs for solving real world problems using java collection frame work.
3. To write multithreaded programs.
4. To write programs to handle the exceptions.
5. To write programs to using packages.

**Course outcomes: At the end of course students will be:**

- CO -1. Familiar with java compiler and eclipse platform.
- CO -2. Able to write programs for solving real world problems using java collection frame work.
- CO -3. Able to write multithreaded programs.
- CO -4. Able to handle the exceptions in java programs.
- CO -5. Able to write programs using packages.

## Skill Enhancement Compulsory Course – II

**Course objectives: The objective of this course is:**

1. Be successful professionals in the field with solid fundamental knowledge of software engineering
2. Utilize and exhibit strong communication and interpersonal skills, as well as professional and ethical principles when functioning as members and leaders of multi-disciplinary teams
3. Apply their foundations in software engineering to adapt to readily changing environments using the appropriate theory, principles and processes.
4. To provide an idea of using various process models in the software industry according to given circumstances.
5. To gain the knowledge of how Analysis, Design, Implementation, Testing and Maintenance processes are conducted in a software project.

**Course outcomes: At the end of course students will be:**

- CO -1. Able to work in one or more significant application domains
- CO -2. Able to work as an individual and as part of a multidisciplinary team to develop and deliver quality software
- CO -3. Demonstrate an understanding of and apply current theories, models, and techniques that provide a basis for the software lifecycle
- CO -4. Demonstrate an ability to use the techniques and tools necessary for engineering practice.
- CO -5. able to decomposing the given problem into Analysis, Design, Implementation, Testing and Maintenance phases.

  
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# ANWARUL ULOOM COLLEGE (AUTONOMOUS)

(Accredited by NAAC with 'A' Grade & An ISO 9001:2015 Certified Institution)

(Affiliated to Osmania University, Hyderabad)

Ref. No. \_\_\_\_\_

Date: \_\_\_\_\_

## Computer Networks

**Course objectives: The objective of this course is:**

1. To equip the students with overview & concepts of fundamentals of computer networks.
2. To familiarize the students with the standard models for the layered approach to communication between machines in a network.
3. To introduce various layers, functions of each layers.
4. To introduce the routing algorithms.
5. To introduce various protocols in application layers.

**Course outcomes: At the end of course students will be able:**

- CO -1. To know of the basic computer network technology.
- CO -2. To gain the knowledge of the functions of each layer in the OSI and TCP/IP reference model.
- CO -3. To gain the knowledge in network design and implementation.
- CO -4. To obtain the skills of sub-netting and routing mechanisms.
- CO -5. Familiarity with the essential protocols of computer networks in application layer.

## Compiler Construction

**Course objectives: The objective of this course is to:**

1. Provide an understanding of the fundamental principles in compiler design and its phases.
2. Introduce finite state machine and the scanning process in compiler.
3. Introduce top down and bottom up parsing
4. Introduce the various optimization methods.
5. Learn the process of translating a modern high-level language to executable code required for compiler construction.

**Course outcomes: At the end of course students will be able to:**

- CO -1. Understand fundamentals of compiler and identify the relationships among different phases of the compiler.
- CO -2. Understand the application of finite state machines and scanning.
- CO -3. Understand the top down and bottom up parsing methods.
- CO -4. Understand the various tools for optimization.
- CO -5. Use modern tools and technologies for designing new compiler.

## Object Oriented Analysis And Design

**Course objectives: The objective of this course is:**

1. introduce Objects and Classes of the software system.
2. introduce construct object model using object types, attributes, structures and associations.
3. introduce Object-Oriented Methodologies ,Analyze Functional and Dynamic Modelling.
4. introduce interaction diagrams
5. introduce Use case Diagrams, Activity Diagrams .

**Course outcomes: At the end of course students will be :**

- CO -1. Able to analyze the problem and apply to real world problems.
- CO -2. Able to construct object-oriented system , modelling objects, relationships and interactions.
- CO -3. Able to discuss software design in an object-oriented manner.
- CO -4. Able to draw Interaction diagrams
- CO -5. Able to draw and analyse Use case Diagrams, Activity Diagrams.

  
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**OOAD-LAB**

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Date: \_\_\_\_\_

**Course objectives: The objective of this course is to introduce:**

1. The Object-based view of Systems
2. Software specifications, analysis and design in solving complex problems.
3. The analysis and design the use case driven requirements for a particular system.
4. The model the event driven state of object and transform them into implementation specific layouts.
5. the subsystems, various components and collaborate them interchangeably.

**Course outcomes: At the end of course students will be able:**

- CO -1. Understand the object-based models for Systems.
- CO -2. Analyze and handle complex software design.
- CO -3. Analyze and design the use cases.
- CO -4. Understand abstract object-based views for generic software systems.
- CO -5. Deliver robust software components

## **Modern Data Base Management System**

**Course objectives: The objective of this course is to introduce:**

1. The basic concepts and the applications of database systems.
2. Data models, database design, relational model, relational algebra,
3. The basics of SQL and construct queries using SQL
4. The normalization techniques.
5. The storage structures & access, distributed database systems.

**Course outcomes: At the end of course students will be able:**

- CO -1. To Gain knowledge of fundamentals of DBMS and its uses,
- CO -2. To design logical database using data models.
- CO -3. To design Physical database and master in SQL commands
- CO -4. To apply the normal forms
- CO -5. To familiarity with database storage structures and access techniques

## **MDBMS LAB**

**Course objectives: The objective of this course is to:**

1. Introduce the basics of SQL Queries.
2. Introduce DDL , DML commands
3. Introduce Construction of queries using SQL
4. Introduce Database design and ER data model,.
5. Introduce PL sql programs.

**Course outcomes: At the end of course students will be able:**

- CO -1. To write the basics of SQL Queries.
- CO -2. To use DDL , DML commands
- CO -3. Construct of queries using SQL
- CO -4. Design database and ER data model,.
- CO -5. To write PL sql programs.

  
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Date: \_\_\_\_\_

## Skill Excellence Compulsory Course –III

The objective of this course is to:

1. Provide an understanding PHP development environment.
2. Introduce the various php programming constructs decision making ,loops etc.
3. Introduce the arrays & strings concepts in php.
4. Provide syntax used with MySQL and methods for retrieve and manipulate data from one or more tables
5. learn real time application using php and mysql.

At the end of course students will be able to:

- CO -1. 1. Work with PHP development environment.  
CO -2. 2. Use various php programming constructs decision making ,loops etc.  
CO -3. 3. Introduce the arrays & strings concepts in php.  
CO -4. 4. Use MySQL and methods for retrieve and manipulate data from one or more tables  
CO -5. 5. Develop real time application using php and mysql

### Internet of Things

Course objectives: The objective of this course is to:

1. Provide an understanding what IoT is and how it works today
2. Introduce the factors that contributed to the emergence of IoT
3. Introduce Internet and communication technologies for IOT.
4. Provide Prototyping and programming for IoT
5. Introduce Cloud computing and Data analytics.

Course outcomes: At the end of course students will be able to:

- CO -1. Understand what IoT is and how it works today.  
CO -2. Understand the factors that contributed to the emergence of IoT  
CO -3. Understand the Internet and communication technologies for IOT.  
CO -4. Understand prototyping and programming for IoT  
CO -5. Understand the Cloud computing and Data analytics.

### Web Programming

Course objectives: The objective of this course is:

1. To introduce HTML & DHTML language for client –sides scripting
2. To introduce Cascading style sheets and layers
3. To introduce with Java scripts and it's objects
4. To introduce Server-side programming with ASP
5. To introduce the XML.

Course outcomes: At the end of course students will be able:

- CO -1. 1. Gain knowledge of client-side scripting, validation of forms.  
CO -2. 2. Understand the use of css and layers  
CO -3. 3. Understand Java scripts and it's objects  
CO -4. 4. Understand server-side scripting with ASP.  
CO -5. 5. Understand what is XML and how to parse and use XMLData

  
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## Web Programming LAB

**Course objectives: The objective of this course is:**

1. To write programs using html.
2. To write programs for solving real world problems using java Scripts.
3. To write programs using html,css and java scrips.
4. To write programs to handle various data validation.
5. To impart hands on experience on real time websites.

**Course outcomes: At the end of course students will be:**

- CO -1. Able to write html programs.  
CO -2. Able to solve real world problems using java scripts.  
CO -3. Able to write programs for solving real using java scripts.  
CO -4. Able to write handle the data validation.  
CO -5. Able to design web sites.

## Introduction to Data science & Python Programming

**Course objectives: The objective of this course is:**

1. To introduce the concept of data science and its fundamentals.
2. To introduce various machine learning algorithms.
3. To acquire programming skills in core Python.
4. To familiarize data types in python.
5. To understand various operators and control statements and Arrays

**Course outcomes: At the end of course students will be able:**

- CO -1. 1. To understand data science phases of data science process and its role.  
CO -2. 2. To understand various algorithms in machine learning.  
CO -3. 3. To understand python programming and data types.  
CO -4. To understand Operators in Python, input and output statements, Control Statements.  
CO -5. 5. To understand the concept of arrays in python.

## Python Programming LAB

The objective of this course is to introduce:

1. Use of operators, Arrays in python.
2. Application of dictionaries in python
3. Uses of Strings and characters.
4. Use of lists, tuples, and dictionaries in Python programs.
5. Creation of module in python.

At the end of course students will be able:

- CO -1. To write program using Operators, Arrays in Python  
CO -2. To write program using dictionaries in python.  
CO -3. To write program using Strings and Characters  
CO -4. To write program using lists, tuples, and dictionaries in Python programs.  
CO -5. To write applications using function in python.

  
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Date: \_\_\_\_\_

## SCILAB

The objective of this course is to:

1. Provide an understanding Scilab environment and setup.
2. Introduce the menus ,commands and operations on vectors.
3. Introduce Scalars & Vectors.
4. Introduce Programming in scilab
5. Introduce string functions, 2d and 3d plotting.

At the end of course students will be able to:

- CO -1. Install and familiarize the scilab environment.
- CO -2. Understand the menus,commands and operations on vectors.
- CO -3. Understand the various operations on Scalars & Vectors.
- CO -4. Familiarize the programming in scilab
- CO -5. Process the string and plot 2d and 3d graph.

  
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## **DEPARTMENT: ECONOMICS**

### **PROGRAMME: BA [EPP]**

**2017-2018**

Each degree program in economics contains a core group of theory courses, a series of quantitative skills courses, and field specialization courses that involve the applications of economic theory and quantitative analysis to major areas of study within the discipline.

The teacher may have the important aims of teaching economics in his mind to make his students able to understand the application of economics in their daily lives and the whole economic structure of the country.

#### **PROGRAMME OBJECTIVES GENERAL:**

#### **OBJECTIVES**

1. To make the students able to know the impact and consequences of British rule on the Indian→ Economy.
2. To make the students able to acquire knowledge of various economic terms like various→ definitions of economics and economy, capitalistic, socialistic and mixed economy, developed and developing economy.
3. To make the students able to understand the various causes of population explosion,→ consequences and its various remedial measure in India.
4. To make the students aware about institutional set-up and main sectors of the Indian economy→ like private and public sectors.
5. To make the students able to understand the various causes of poverty, unemployment, price→ rise, inflation and their remedial measures.
6. To make the students able to understand the economic explosion of consumers, rights of→ consumers in the society.
7. To make the students able to understand the complete infrastructure of the Indian economy, like→ transport and communication network, power and irrigation and various monetary and financial institutions.
8. To make the students able to understand the significant contribution of agriculture to national→ income, employment, state revenues, industries, food, equipment and trade.
9. To make the students able to understand the mutual relationship of agriculture and industry and→ a balanced industrial structure, the importance of small and large-

scale industries and its various regional disparities and future aspects of industrial developments.

### **PROGRAMME OUTCOME GENERAL:**

1. Understand the fundamental basic concepts of economics and the dynamic working of different economies of the world.
2. The course is tailor-made for young aspirants in the domain of economics by drawing rich academic inputs from contemporary syllabus reflecting recent developments.
3. The under-graduate economics programmes help students to establish in-depth understanding of the functioning of domestic and global economies and to develop the necessary and portable skills to perform economic analysis for both public and private sector positions as well as for graduate studies in related fields
4. The graduate students also possess knowledge about a special bond between environment economy and sustainable development.
5. Graduates of Economics are given priority in getting employment in economic related jobs owing to having had better exposure in under graduation programme with economic curriculum.
6. Students are equipped with knowledge require for qualifying in various competitive examinations like Planning and economic service, Finance and account service, banking and insurance, real estate dealings etc, Higher education prospect is also positive.

### **PROGRAMME SPECIFIC OUTCOME (PSO)**

1. Students will learn the basic concept of economics, how markets organised core economic activities such as production, distribution, consumption and the growth of productive resources.
2. Students will learn about the determinants of macro-economic conditions (national output, employment and inflation), causes of business cycles, and interactions of monetary and fiscal policy.

3. Students will learn to apply economic theories and methodologies in analysing economic issues in various sub-fields of applied micro-economics and international economics.
4. Students will Be able to conduct economic analysis using equations and graphs. Assess the role of domestic and international institutions and norms in shaping economies.
5. Students will be able to explain, graph, and analyze key economics models.
6. Students will be able to analyze the economics and institutional arrangements of specific regions, countries, organizations, localities, industries or firms.
7. Students are expected to be able to deduce reasonable predictions about possible economic outcomes based on economic conditions and economic theories.
8. Students are expected to understand how to collect and analyse data and use empirical evidence to evaluate the validity of an economic argument, use statistical methodology, interpret statistical results and conduct appropriate statistical analysis of data.
9. Students are expected to be able to apply economic analysis to everyday problems in real world situations, to understand current events and evaluate specific policy proposals. Students will be able to effectively communicate economic ideas.

B. Siddiquis

Ms. Bushra Siddiqi  
Head Department of  
Economics

**HEAD**  
Department of Economics  
Anwarul Uloom College (Autonomous)  
New Mallepally, Hyderabad

# CORE OBJECTIVES

## BA FIRST YEAR SEMESTER -I MICRO ECONOMICS-1

### OBJECTIVES

1. To develop critical understandings of consumer behavior that will hold relevance both inside and outside the domain of marketing practice.
2. To explain the basic concepts and theories of the production.
3. To understand the concepts of cost, nature of production and its relationship to business operations.
4. To integrate the concept of price and output decisions of firms under various market structure.
5. To analyze the causes and consequences of different market conditions. To make students understand the sellers' objectives in making pricing decisions.

### OUTCOMES

1. Assess and evaluate the factors, internally and externally, through which we understand consumer behavior.
2. Apply relevant consumer behavior theories in understanding the impact of marketing strategies. Develop critical and reflexive understandings of the nature of consumption, markets and culture.
3. Apply appropriate research techniques
4. Appreciate the complexity of consumer behavior.
5. Gaining knowledge about managing production process.
6. How to run operations effectively. Better understanding of modern production techniques. Students will be familiar with the production and cost structure under different stages of production.
7. To help students understand and apply the various decision tools to understand the market structure.
8. Students will be able to apply marginal analysis to the "firm" under different market conditions.

  
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**BA FIRST YEAR  
SEMESTER -II  
MACRO ECONOMICS**

**OBJECTIVES**

1. To understand the functioning of economy at the macro level.
2. To Understand how the economy is regulated through monetary and fiscal policies. To study the important indicators of the economy and their significance.
3. To explain determination of equilibrium level of income and employment.
4. to make students aware about and with Aggregate Supply/ Demand/ Employment etc.
5. to explain difference between Classical and Neo-Classical Economy and economists, mainly Keynesian Economics.
6. To explain the concept of money and differentiate between classical theory and theory of Cambridge version.
7. To explain different types of inflation, causes, and measurements including their uses and limitations. And also to explain different types of trade cycles.

**OUTCOMES**

1. Students will be able to:
2. To explain the concept of macroeconomics.
3. To integrate the role of fiscal and monetary policies in regulating economy.
4. Students will be able to relate individual concepts with aggregate concepts i.e.
5. To merge micro and macro.
6. Students will be able to answer the questions related to equilibrium level of income and employment (output).
7. Students will be able to explain the meaning of consumption function, relationship between APC and MPC, consumption and income, concept of multiplier.
8. To analyze the income determination through classical and Keynesian economics.
9. To Understand the relationship between investment and savings, demonstrate investment multiplier, and understand the meaning of MEC and MEI.
10. Students will be able to define different types of inflation and could compare inflation measures.

  
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**BA SECOND YEAR  
SEMESTER –III  
MICRO ECONOMICS-II**

**OBJECTIVES**

1. To understand the concepts of cost, nature of production and its relationship to business operations.
2. To explain how price is determined in a perfectly competitive market, and represent the same graphically.
3. To recognize the implications of shift in demand, or in supply, or in both represent the same graphically.
4. To Identify features and their implication of monopoly, monopolistic competition and oligopoly markets.
5. To make students understand the sellers' objectives in making pricing decisions.
6. To integrate the concept of price and output decisions of firms under various market structure.
7. To analyze the causes and consequences of different market conditions.

**OUTCOMES**

1. Students will be familiar with the production and cost structure under different stages of production, infer that microeconomics, conceives of four types of market situations: perfect competition, monopoly, monopolistic competition and oligopoly.
2. Students will be able to apply marginal analysis to the "firm" under different market conditions.
3. To help students understand and apply the various decision tools to understand the market structure.

*B. S. Siddiqui*

**HEAD  
Department of Economics  
Anwarul Uloom College (Autonomous)  
New Mallepally, Hyderabad.**



**BA SECOND YEAR  
SEMESTER –IV  
PUBLIC ECONOMICS**

**OBJECTIVES**

1. To use economic analysis to predict and verify the effects of government intervention on behaviour of individuals, households, and firms.
2. To understand the economics of government expenditure and taxation.
3. Analyze policy applications including welfare assistance, education, healthcare spending, and tax policies such as income taxes and consumption taxes.
4. To analyze fiscal policies and its implication in Indian Economy.
5. To give basic knowledge of public budget.

**OUTCOME**

1. Students examine the rationale for government intervention in a market economy, the assessment of public policy, and the impact of government expenditures and taxation on the economy.
2. To have conceptual clarity of public expenditure and revenue theories.
3. To apply the principle of optimal taxation in analyzing various governments tax policies. Describe the principles of federal finance.
4. To comprehend various types of public goods and its real world application.
5. Students will be able to describe the government budget, explain different types of budgets.

*B. Siddiqui*

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**New Mallepally, Hyderabad.**

**BA SECOND YEAR  
SEMESTER -V A  
INDIAN ECONOMY**

**OBJECTIVES**

1. To make students learn through the study of various concepts in economics, liked Economic growth and development, GDP, GEM, etc.
2. To explain the meaning of Balanced Growth Strategy.
3. To explain Understand the concept of Unbalanced Growth Strategy.
4. To describe changes in the composition of national income and employment.
5. To explain the importance of natural resources. To explain the flow of money between households and between firms.
6. To explain the difference between the definitions and components of GNI and GDP and understand GNI and GDP as measures of national income, understand the difference between nominal (money) GNI/GDP and real GNI/GDP.
7. To make student understand the importance of planning for the development of the economy.

**OUTCOMES**

1. Student were able to define the concept of economic growth and development and answer questions related to the topics.
2. They will understand the importance of empowering a women.
3. They will practically understand the role of state in the process of development.
4. Students will be able to know the Merits of Balanced Growth Strategy.
5. To Know the demerits of Balanced Growth Strategy.
6. Students will be able to understand the concept of Unbalanced Growth Strategy.
7. To Know the demerits of Unbalanced Growth Strategy.
8. Develop ideas of the basic characteristics of Indian economy, its potential on natural resources.
9. Students will be able to define different types of planning, need of planning and about the trends in planning commission of India.

  
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**Anwarul Uloom College (Autonomous)**  
**New Mallepally, Hyderabad.**


**BA SECOND YEAR  
SEMESTER –V B  
PUBLIC FINANCE**

**OBJECTIVES**

1. To give a thorough knowledge of different types of goods.
2. To explain the concepts of public revenues.
3. To explain canons of Taxation, effects of Taxation on Production and Distribution; Role of Taxation in Developing Countries.
4. List the factors affecting public expenditures.
5. To know the Sources of Public Debt, Redemption of Public Debt; Debt Trap.
6. Role of Public Debt with special reference to developing countries.

**OUTCOMES**

1. Students will be able to:
2. To understand the meaning of public finance or government finance; its nature, subject matter, explain the differences between public finance and private finance and differentiate between the public and private goods.
3. Student will be able to explain the concepts of government and public finance.
4. Students will be able to compares the discussions on the role of the state in the economy. Explain the effects of taxation on production and distribution and the role taxation. Students will be able to evaluate the results of public expenditure policies.
5. Develop alternative policies. Students will be able to interpret the effects of public expenditures on the economy.
6. Understand the various sources of government borrowing and the reasons behind the growing public debt.
7. To describe how the debt is repaid, the role of public debt in developing countries, explain the concept of debt trap.

  
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**Anwarul Uloom College (Autonomous)**  
**New Mallepally, Hyderabad.**

## **BA THIRD YEAR SEMESTER -VI A PUBLIC FINANCE**

### **OBJECTIVES**

1. To critically examine the growth processes of Indian agriculture.
2. To make the students understand the nature of development of Indian agriculture, the role of agriculture in industrial development and land distribution in rural India.
3. To study inter-linkages across input and output markets in agriculture.
4. To provide the students an exposure to selected aspects of sustainability of agricultural development in India.
5. To comprehend, analyze, design and develop innovative products and provide solutions for the real-life problems.
6. To explain the importance of service sector in an economy.
7. To show the trends, composition, occupation, and role of service sector in Andhra Pradesh.

### **OUTCOMES**

Students will be able to :

1. Develop critical understanding regarding growth processes in Indian Agriculture.
2. Ability to critically exam the nature and beneficiaries of development, agriculture-industry development linkages and land distribution in rural India.
3. Gain knowledge regarding sustainable farming practices in Indian agriculture.
4. Students will be able to analyze the current events and issues that are occurring in agriculture and how they affect futuristic agriculture.
5. Able to demonstrate critical thinking and problem solving skills as they apply to a variety of animal and or plant production systems.
6. The students will be able to identify various problems faced by the small scale industries. The student will be able to know different policies initiated by the government.
7. Student will understand importance of various sectors in an economy like education, health sector etc.
8. Student will be able to understand the economy of Andhra Pradesh state.

*B. Sridhar*  
**HEAD**  
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**BA THIRD YEAR  
SEMESTER -VI B  
PUBLIC FINANCE & INTERNATIONAL ECONOMICS**

**OBJECTIVES**

1. Students will be able to distinguish between absolute and comparative advantages in trade. Define international trade and describe how it impacts various countries.
2. To introduce the concept of gains from trade through voluntary exchanges and clarify misconceptions among students concerning trade.
3. To review the trade policy of India to explain the trends in India's balance of payment.
4. To discuss the role of invisibles in BOP, to explain the recent policy measures.
5. To Gain understanding of the basic concepts and principles of International trade, role of the government through its policy, balance of payment accounts and BOP crisis.
6. To outline the historical perspective of globalization and Role of WTO, its functions and its implications on the world trade.

**OUTCOMES**

1. It enables the Students to understand and defend the economic importance of international trade.
2. To familiarise students with the theoretical foundation of trade.
3. students should be able to identify and define the following vocabulary terms: tariffs, trade barrier, globalization, World Trade Organization.
4. This realization prepares them to objectively describe what is meant by a trade deficit, helping to prepare them for current events discussions that consider the questions of "What's good?" and "What's bad?" about a deficit or surplus in our balance of payments accounts.
5. Students will be able to apply functions, provisions of international trade system and functions to facilitate the global trade.
6. Students will be able analyze impact of WTO on current global trade in detail.

  
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**DEPARTMENT: ECONOMICS**  
**PROGRAMME: MA ECONOMICS**  
**2017-2018**

Each Master of Arts programme in Economics contains a core group of theory courses, a series of quantitative skills courses, and field specialization courses that involve the applications of economic theory and quantitative analysis to major areas of study within the discipline.

The teacher may have the important aims of teaching economics in his mind to make his students able to understand the application of economics in their daily lives and the whole economic structure of the country.

**PROGRAMME OBJECTIVES GENERAL:**

**OBJECTIVES**

The Master of Arts programme in Economics has been designed with the objective to develop in-depth knowledge of students in frontier areas of economic theory and methods, so that they are able to use the knowledge to study real world economic problems.

The course has a strong focus on theoretical and quantitative skills and train students in the collection and analysis of the data using their software skills. The programme offers specialised optional courses, which allow student to pursue their studies in their area of interest. The students are required to submit report and present their findings of field-study. Besides, to hone the student's writing and analytical skills they are required to submit a term paper on current economic problem.

Thus, the Masters in Economics programme seek to:

- Prepare students to develop critical thinking to carry out investigation about various socio-economic issues objectively while bridging the gap between theory and practice.
- Equip the student with skills to analyze problems, formulate an hypothesis, evaluate and validate results and draw reasonable conclusions thereof.
- Prepare students for pursuing research or careers that provide employment through entrepreneurship and innovative methods. Because today's unemployment problem can also be solved by developing the micro and small entrepreneurship.
- Prepare students to develop own thinking /opinion regarding current national or international policies and issues.
- Create awareness to become a rational and an enlightened citizen so that they can take the responsibility to spread the governments' initiatives/schemes to the rural areas for the upliftment of the poor or vulnerable section of the society for inclusive growth.

## **OUTCOME:**

At the end of the programme, the students will have adequate competency in the frontier areas of economic theory and methods. The students will acquire additional specialisation through optional courses. They will be able to use common software for analysis of economic data. Besides, students will be able to execute in-depth analysis of economic issues based on their understanding of economic theory, which will not only widen their opportunities for employment, but also help them to pursue their doctoral studies. Keeping the programme objectives in view, the specific learning outcomes of Masters in Economics are:

- Understanding the basic assumptions in various economic theories and enhance capabilities of developing ideas based on them
- Prepare and motivate students for research studies in Economics especially by developing questionnaire, collecting primary data through field surveys



- Provide knowledge of a wide range of econometric techniques using excel or other statistical software
- Motivate students to extract or utilize different websites for secondary data collection, generating concepts for various facets of economic studies and gather latest informations provided by various Universities, UGC, or ICSSR
- Motivate students in preparing for various competitive examinations, NET, SET, Indian Economic Service etc., by developing or gaining value addition day by day by giving assignments, by following a routine or developing discipline / concentration etc.

### PROGRAMME SPECIFIC OUTCOME (PSO)

1. To impart in depth knowledge to students about economic theory regarding utilization and allocation of resources including labour, natural resources and capital.
2. To develop students understanding about how market for goods and services function and how income is generated and distributed.
3. To give students in depth knowledge into special fields of choice like agricultural economics, industrial economics, financial market, development economics, international trade, urban economics econometrics, mathematical economics etc.
4. To make students familiar with economic theories and their relevance, econometrics, quantitative techniques and applied research in a wide variety of fields within economics.
5. Students would know how the economy is influenced by economic policy, technological advances and demographic conditions

*B. S. Siddiqui*

*Ms. Bushra Siddiqui*

*Head Department of Economics*

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# CORE OBJECTIVES

## MA FIRST YEAR SEMESTER -I MICRO ECONOMICS-1

### OBJECTIVES

1. To have a theoretical understanding of consumer behavior and decision-making
2. To get acquainted with recent advances in microeconomic theory and acquire the skills to apply the theoretical knowledge in research
3. To learn about theory of demand, Utility Functions - types and properties; Consumers' choice involving risk and uncertainty; Production function – types and properties; Theories of Cost and general equilibrium theory – An overview.

### OUTCOMES:

On successful completion of this course students will be able to:

1. have an understanding of the basic reasoning of Economics and understand the consumption; production and cost concepts in an analytical way;
2. apply mathematical tools and techniques to study behavior of economic agents;
3. understand the basic principles of General equilibrium theory

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**MA FIRST YEAR  
SEMESTER –I  
MACRO ECONOMICS-I**

**OBJECTIVES**

1. To analyse and establish the functional relationship between economy level/aggregates.
2. To have a proper understanding of macroeconomic theoretical structure
3. To educate the students on different terms and concepts in macroeconomics like national income accounting, Circular flows, consumption function, investment function, supply and demand for money.

**OUTCOMES**

On successful completion of this course students will be able to:

1. apply the subject knowledge in understanding the working of the economy as well as the macroeconomic issues and policies; and
2. understand systemic facts and theoretical developments.

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**MA FIRST YEAR  
SEMESTER -I  
QUANTITATIVE METHODS-I**

**OBJECTIVES**

1. To train the students to use the techniques of mathematical and statistical analysis, which are commonly applied to understand and analyze economic problems
2. To emphasize the mathematical methods rather than learning mathematics itself, which are usually used for understanding economic concepts
3. To learn about the classical techniques involving functions and calculus
4. To gain knowledge about the elements of Game Theory as applicable to real life economic analysis. Course Outcome

**OUTCOMES**

1. Express relationship between economic variables mathematically, analyze, optimize and interpret them.
2. Use appropriate techniques to solve problems with calculus and linear algebra.
3. Understand the basics of game theory to resolve economic issues.

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**MA FIRST YEAR  
SEMESTER -I  
AGRICULTURAL ECONOMICS-I**

**OBJECTIVES**

1. To impart knowledge on applications of economic theories in agricultural sector
2. To make students understand the linkage between agriculture and other sectors of the economy.
3. To impart knowledge on new developments in the policy paradigms related to agricultural sector.

**OUTCOMES**

1. Deeper knowledge on different theories related to economic development and the agricultural sector; and
2. Increased interest to undertake research activities related to aspects of agricultural sector in India.

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**MA FIRST YEAR  
SEMESTER -I  
FINANCIAL ECONOMICS-I**

**OBJECTIVES**

1. It introduces the students to the financial decision making process: essentials of firms' investment decisions, risk-and-return trade-off, investors' portfolio choices, and theoretical basis of asset pricing.
2. In doing so, the class covers fundamental theories of financial economics.
3. Seeks to provide a solid knowledge of finance that is needed for future finance courses.

**OUTCOMES**

1. The principles of project selection and investments by corporations
2. The risk and return trade-off in financial markets
3. Fundamental theories of financial economics

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**MA FIRST YEAR  
SEMESTER -II  
MICRO ECONOMICS-II**

**OBJECTIVES**

1. To impart theoretical knowledge on theories of firm
2. To impart theoretical knowledge on distribution.
3. To explain equilibrium analysis and welfare economics

**OUTCOMES**

Student will be having:

1. Deeper knowledge on decision making under different firms
2. Deeper knowledge of theories of interest, wages and profit.
3. Deeper knowledge about distributional and welfare aspects of economic activities.

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**MA FIRST YEAR  
SEMESTER -II  
MACRO ECONOMICS-II**

**OBJECTIVES**

1. To make the students understand the different terms and concepts in macroeconomics like Money market and real market, inflation in developing countries, causes of occurrence of business cycle in a market economy and ways to control them.
  2. To expose the students to open economy macro economics and the dynamics there in.
- Course

**OUTCOMES**

1. Apply the subject knowledge in understanding the macroeconomic dynamics both in a closed and an open economy;
2. Understand the functioning of a market economy and the ways and means to keep such an economy functioning properly

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**MA FIRST YEAR  
SEMESTER -II  
QUANTITATIVE METHODS -II**

**OBJECTIVES**

1. To train the students to use the techniques of probability theory and statistical analysis, which are commonly applied to understand and analyze economic problems
2. To deals with simple tools and techniques, which will help in sampling theory and designs, data collection, analysis, theory of estimation and hypothesis testing
3. To initiates the correlation analysis - simple, multiple and partial, and regression analysis - linear and nonlinear.

**OUTCOMES**

1. Have fair idea about probability theory which forms the foundation of inferential statistics.
2. Understand theoretical distributions and their significance.
3. Understand sampling and sampling designs, theory of estimation and hypothesis testing procedure.
4. Fit a linear and some commonly used non-linear curves.

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**MA FIRST YEAR  
SEMESTER -II  
AGRICULTURAL ECONOMICS -II**

**OBJECTIVES**

- 1.To study the significance of agriculture in economic development.
- 2.To provide information to students about various modern technology and ideas adopted in the agriculture sector.

**OUTCOMES**

- 1.Students will obtain information regarding various agricultural issues in India and remedies for it.
- 2.Students also can get information about co-operative movement in India and its performance and role in rural development.
- 3.Making awareness about selfemployment through various local business like agrotourism, travel agents, horticulture, floriculture, fishery and animal husbandry.

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**MA FIRST YEAR  
SEMESTER -II  
FINANCIAL ECONOMICS -II**

**OBJECTIVES**

1. To educate the students on different terms and concepts in financial institutions and market like commercial and central bank, monetary policy, money and capital market.
2. To enhance the understanding of the students about organisation, operation and growth of financial systems.

**OUTCOMES**

1. Understand the financial system: its structure and functions and equilibrium
2. Understand the way the different rates of interests are determined;
3. Appreciate the functioning and importance of different banking and non-banking financial institutions and their role in a developing economy
4. Explain the role and structure of money and capital markets

  
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**MA SECOND YEAR  
SEMESTER -III  
ECONOMETRICS-I**

**OBJECTIVES**

1. To introduce the relevant econometric theory and explaining the theory with examples
2. To understand Classical Linear Regression Models and regression diagnostics
3. To develop an intuitive understanding of the material that will allow these econometric tools to be utilized effectively and creatively.

**OUTCOMES**

1. Learn various basic econometric methods, estimation methods and related econometric theories.
2. Apply these methods to data or econometric modeling techniques.

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**MA SECOND YEAR  
SEMESTER -III  
INTERNATIONAL ECONOMICS-I**

**OBJECTIVES**

1. The theories of international trade, gains from trade and its distribution.
2. Effects of trade policy and regional trading blocs.
3. Bops and its adjustments.

**OUTCOMES**

1. Analyse and apply the trade theories and theories of tariff.
2. Apply and analyze the different policies for bops adjustments of developing countries like India.
3. Comment critically on and participate in current debates on international economic policy.

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**MA SECOND YEAR  
SEMESTER -III  
PUBLIC ECONOMICS-I**

**OBJECTIVES**

- 1.To provide the students with thorough analytical understanding to analyze public goods, externalities, market failures; economics of government expenditure, taxation and public borrowing.
2. To critically analyze fiscal policies/finance and its implication in Indian Economy.

**OUTCOMES**

1. Have conceptual clarity on the theories of public goods, public expenditure, public revenue and public borrowing.
2. Apply the principles of public economics in analyzing various government policies.

  
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**MA SECOND YEAR  
SEMESTER -III  
INDUSTRIAL ECONOMICS-I**

**OBJECTIVES**

1. To explain why industries are composed of a few large firms instead of many small ones.
2. Looking at the strategic interactions between firms in a market,
3. Analyzing such market phenomena as price discrimination, product differentiation, price wars, mergers, vertical relationships between firms, advertising, entry and exit, and research and development.
4. To study real-world applications of the theories that is learnt in a class.

**OUTCOMES**

1. Explain and analyze the main issues and debates in the field of industrial economics
2. Describe the workings of different market structures
3. Critically evaluate different policy approaches to industry
4. Analyze the value and the limitations of existing theory in the area of industry economics
5. Explain the economic behavior of different industries, firms and markets in relation to their output and pricing decisions
6. Analyze and provide policy recommendations about monopolies, cartels, non-cooperative oligopolies and other forms of imperfect competition
7. Critically evaluate the relationship between industrial structure and performance and the various approaches to innovation, entrepreneurship and industry policy

  
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**MA SECOND YEAR  
SEMESTER -III  
DEVELOPMENT ECONOMICS-I**

**OBJECTIVES**

1. To make students learn through the study of various concepts in economics, like Economic growth and development, GDP, GEM, etc.
2. To make the students able to understand the various causes of population explosion, consequences and its various remedial measure in India.
3. To explain the importance of learning both traditional and modern theory of economic development.
4. To increase students knowledge through the study of various economic theories, important principles, laws and generalization.

**OUTCOMES**

Student were able to:

1. Define the concept of economic growth and development and answer questions related to the topics.
2. They will practically understand the role of state in the process of development.
3. It enables the students to appreciate the fact that for preserving the health & welfare of the family, to ensure economic stability of the family and to assure good prospects of the younger generation.
4. Students got accurate information about the effect of changes in family size and in national population on the individual.
5. The students came to know the importance of innovation in the present market.
6. Students became aware about most of the interesting and logical facts, laws and also about the changes in behavior of human beings.

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**MA SECOND YEAR  
SEMESTER -IV  
ECONOMETRICS-II**

**OBJECTIVES**

- 1.To provide the students with some useful tools for his/her future research.
2. To help the student to develop a way of thinking in quantitative terms.

**OUTCOMES**

- 1.Understand maximum likelihood estimation and identify what is common and what not with respect to least squares estimation.
2. Apply maximum likelihood estimation and likelihood ratio testing in specific models.
- 3.Estimate and test regression models for binomial, multinomial, ordinal and count data.
- 4.. Estimate and test regression models for censored data.
5. Estimate and test sample selection models.

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**MA SECOND YEAR  
SEMESTER –IV  
INDIAN ECONOMY**

**OBJECTIVES**

1. To make students learn through the study of various concepts in economics, like Economic growth and development, GDP, GEM, etc.
2. To explain the meaning of Balanced and unbalanced Growth Strategy.
3. To describe changes in the composition of national income and employment.
4. To explain the importance of natural resources.
5. To explain the difference between the definitions and components of GNI and GDP and understand GNI and GDP as measures of national income, understand the difference between nominal (money) GNI/GDP and real GNI/GDP.
6. To make student understand the importance of planning for the development of the economy.

**OUTCOMES**

Student were able to:

1. Define the concept of economic growth and development and answer questions related to the topics.
2. They will understand the importance of empowering a women.
3. They will practically understand the role of state in the process of development. Students will be able to know the Merits of Balanced Growth Strategy.
4. To Know the demerits of Balanced Growth Strategy.
5. Students will be able to understand the concept of Unbalanced Growth Strategy. Know the demerits of Unbalanced Growth Strategy.
6. Develop ideas of the basic characteristics of Indian economy, its potential on natural resources.

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**MA SECOND YEAR  
SEMESTER -IV  
ENVIRONMENTAL ECONOMICS**

**OBJECTIVES**

1. Application of economic theories for environmental issues; global environmental externalities and climatic change.
2. Valuation of environmental goods; economics natural resources.

**OUTCOMES**

1. Apply economic principles for applied environmental issues.
2. Select and apply appropriate economic techniques to solve environmental problems and measure value of environmental goods.

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**MA SECOND YEAR  
SEMESTER -IV  
INDUSTRIAL ECONOMICS**

**OBJECTIVES**

1. To examine the internal structure of firms.
2. To analysis of various aspects of strategic interaction between firms and the determinants of industrial structure.
3. To discusses the role of policy in the context of competition and industrial policies and regulation.
4. How To use theoretical tools can be used to analyse real world issues.
5. To confront against empirical evidence, and its implications for public policy and business strategy will be discussed.

**OUTCOMES**

**Students will be able to:**

1. Describe and explain the determinants of the size and structure of firms and the implications of the separation of ownership and control
2. Describe and explain the pricing behavior by firms with market power and its welfare implications
3. Apply analytical models of firm behavior and strategic interaction to evaluate various business practices, including tacit collusion, entry deterrence, product differentiation, price discrimination and vertical restraints
4. Recognize and explain the basic determinants of market structure and the key issues in competition policy and regulation.

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**MA SECOND YEAR  
SEMESTER -IV  
ECONOMICS OF INSURANCE**

**OBJECTIVES**

1. students will be having basic knowledge that is needed to deal with insurance markets and household finance problems.

**OUTCOMES**

1. The student will come to understand risk, uncertainty, insurance and the role of financial markets in a modern economy.
2. Students will be able to understand the basic concepts and methods for the design of financial portfolios under uncertainty.

  
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# **Anwarul Uloom College** **(Autonomous)**



**(Affiliated to Osmania University)**  
**Accredited with 'A' Grade by NAAC**  
**New Mallepally, Hyderabad-500001, T.S., India.**

## **DEPARTMENT** **OF** **ELECTRONICS**

### **OBJECTIVES & OUTCOMES**

**For The Academic Year**

**2017 - 2018**

2017-2018

**B.Sc. I year - Semester I  
Paper - I  
Code No. 6112  
Circuit Analysis**

**Course Objective: Circuit Analysis**

To develop problem solving skills and understanding of circuit theory through the application of techniques and principles of electrical circuit analysis to common circuit problems.

1. To develop an understanding of the fundamental laws and elements of electric circuits.
2. To learn the energy properties of electric elements and the techniques to measure voltage and current.
3. To understand waveforms, signals, and transient, and steady-state responses of RLC circuits.
4. To develop the ability to apply circuit analysis to DC and AC circuits.
5. To understand advanced mathematical methods such as Laplace and Fourier transforms along with linear algebra and differential equations techniques for solving circuits problems.

**Course Outcomes: Circuit Analysis**

- CO-1. Determine parameters such as node voltages, branch currents, and electric power in electric circuits using Ohm's law and Kirchhoff's current and voltage laws.
- CO-2. Analyze AC and DC circuit using mesh analysis, nodal analysis, superposition, Thevenin, Norton, and source transformation techniques.
- CO-3. Determine natural and step responses of RC, RL, and RLC circuits.
- CO-4. Identify appropriate circuit analysis techniques for analyzing DC/AC circuits.
- CO-5. Analyze AC circuits using the frequency domain approach.
- CO-6. Calculate AC powers in ac circuits.
- CO-7. Use Laboratory instruments such as multimeters, oscilloscope, function generators, power supplies, etc.
- CO-8. Perform experiments to validate the fundamentals of electric circuit theory.

**Learning Outcomes: Circuit Analysis**

- LO-1. To be able to understand basic electrical properties .
- LO-2. To be able to analyze electrical circuits.

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2017 - 2018

B.Sc. I year - Semester II  
Paper - II  
Code No. 6212  
Electronic Devices

An electronic device is a device made by utilizing and controlling the laws of electron motion in a vacuum, gas or solid. Divided into electric vacuum devices, gas tube devices and solid state electronics.

Course Objective: Electronic Devices

1. To learn to analyze the PN junction behavior at the circuit level and its role in the operation of diodes and active device.
2. Basics of junction diode, rectifying action of a diode, regulated power supplies and wave shaping circuits.
3. To analyze different types of semiconductor devices.
4. To understand the operation and design of multistage amplifier.
5. Transistor and its three modes of operation, h-parameter model of a transistor and the frequency response of an amplifier.

Course Outcomes: Electronic Devices

- CO-1. Describe the behavior of semiconductor materials.
- CO-2. Reproduce the I-V characteristics of diode/BJT/MOSFET devices.
- CO-3. Reproduce the I-V characteristics of diode/BJT/MOSFET devices.
- CO-4. Apply standard device models to explain/calculate critical internal parameters of semiconductor devices.
- CO-5. Explain the behavior and characteristics of power devices such as SCR/UJT etc.
- CO-7. Design and analyze the basic operations of BJT, FET and MOSFET.
- CO-8. Know about the multistage amplifier using BJT and FET in various configuration.

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2017-2018

**B.Sc. II year - Semester III  
Paper - III  
Code No. 6312  
Power Supplies And Analog Circuits**

**Course Objective: Power Supplies and Analog Circuits**

1. Familiarized with basic integrated circuit components, its designing & packaging.
2. To understand operational amplifier and its applications.
3. Understand various operating modes of Op-amp and its linear/non-linear applications.
4. To understand differential amplifiers using BJT and MOSFET.
5. Transistor

**Course Outcomes: Power Supplies and Analog Circuits**

- CO-1. Students can demonstrate ability to identify, formulate and solve engineering problems in the field of analog devices.
- CO-2. Equip the skill to design and develop a regulated power supply.
- CO-3. Develop analytical capability to analyze feedback in amplifiers.
- CO-4. Understanding and designing of multi-vibrator and power supply circuits.
- CO-5. Acquire knowledge on commonly used linear and non-linear applications of Op amps and Comparators.
- CO-6. Students can show ability to participate and succeed in project contests.

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2017-2018

**B.Sc. II year - Semester IV  
Paper - IV  
Code No. 6412  
Applications of Operational  
Amplifier and Communication**

<b>Course Objective: Applications of Operational Amplifier and Communication</b>
1. Familiarized with basic integrated circuit components, its designing & packaging.
2. To understand operational amplifier and its applications.
3. Understand various operating modes of Op-amp and its linear/non-linear applications.
4. This paper aims to describe the concepts of electronics in communication and communication techniques based on Analog Modulation, Analog and digital Pulse Modulation.
5. He / she shall develop an understanding of various aspects of harmonics.
6. Gain an insight on the use of different modulation and demodulation techniques used in analog communication.

<b>Course Outcomes: Applications of Operational Amplifier and Communication</b>
CO-1. Students can demonstrate ability to identify, formulate and solve engineering problems in the field of analog devices.
CO-2. Acquire knowledge on commonly used linear and non-linear applications of Op amps and Comparators.
CO-3. Students will be able to understand and design circuits using 555 Timer.
CO-4. Design and test PLL (Phase-Locked Loop) application circuits including FM Demodulation.
CO-5. The students will get basic idea about the op amp. The students can design an analog system using Op amp.
CO-6. Students can show ability to participate and succeed in project contests.

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2017 - 2018

B.Sc. III year - Semester V (A)  
 Paper - V (A)  
 Code No. 6512  
 Digital Electronics

Course Objective: Digital Electronics

1. To acquire the basic knowledge of digital logic levels and application of knowledge to understand digital electronics circuits.
2. To prepare students to perform the analysis and design of various digital electronic circuits.
3. To Work with a variety of number systems and numeric representations, including signed and unsigned binary, hexadecimal, 2's complement.
4. To introduce the methods for simplifying Boolean expressions. To introduce basic postulates of Boolean algebra and show the correlation between Boolean expression.
5. To outline the formal procedures for the analysis and design of combinational circuits and sequential circuits.

Course Outcomes: Digital Electronics

After studying this course the students would gain enough knowledge

- CO-1. Have a thorough understanding of the fundamental concepts and techniques used in digital electronics.
- CO-2. Solve Boolean expressions using the theorems and postulates of Boolean algebra and to minimize combinational functions.
- CO-3. Ability to understand the principles of digital circuits.
- CO-4. Design and analyze combinational circuits and to use standard combinational functions/building blocks to build larger more complex circuits.
- CO-5. Ability to understand the logic behind the operation of counters.
- CO-6. To develop skill to build, and troubleshoot digital circuits.

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**B.Sc. III year - Semester V (B)**  
**Paper - V (B)**  
**Code No. 6513**  
**Microprocessor- Intel 8085**

Course Objective: Microprocessor - Intel 8085

1. The paper aims at the functional operations of microprocessor.
2. To understand need of Microprocessors in computer system.
3. To understand architecture and features of typical Microprocessors.
4. To learn interfacing of real world input and output devices.
5. To study various hardware & software tools for developing applications.

Course Outcomes: Microprocessor - Intel 8085

Upon completion of this course, the students shall be able to:

- CO-1. Learn importance of Microprocessors in designing real time applications.
- CO-2. Understand function of Microprocessor.
- CO-3. Describe the 8085 Microprocessors architectures and its feature. .
- CO-4. Develop interfacing to real world devices.
- CO-5. Organization of intel microprocessor 8085, its architecture, pin diagram, timing diagram, instruction set and programming in assembly language.
- CO-5. Learn use of hardware & software tools.

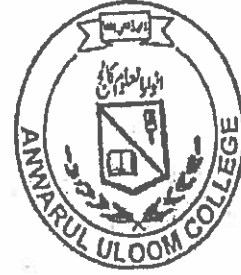
*M. Sahameed*

**Head of the Dept. of Electronics,**  
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**Hyderabad.**

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**CHAIRMAN**  
**Board of Studies in Electronics**  
**Osmania University**  
**Hyderabad - 500007**  
**T.S.**

2020-2021

B.Sc. III year - Semester VI  
Paper - VI (a)  
Code No. 6612  
Fundamental of Embedded Systems  
and Applications (Elective - I)



Course Objective: Fundamental of Embedded Systems and Applications

1. Learn the architecture of embedded systems, their classification and application.
2. To have knowledge about the basic working of a microcontroller system and its programming in assembly language.
3. To provide experience to integrate hardware and software for microcontroller applications systems.
4. To study various hardware & software tools for developing applications.

Course Outcomes: Fundamental of Embedded Systems and Applications

To acquire knowledge about microcontrollers embedded processors and their applications.

CO-1. Embedded systems including its generic architecture, design and classifications, Embedded processors and microcontrollers.

CO-2. Foster ability to understand the internal architecture and interfacing of different peripheral devices with Microcontrollers.

CO-3. Foster ability to write the programs for microcontroller.

CO-4. Foster ability to understand the role of embedded systems in industry.

CO-5. Foster ability to understand the design concept of embedded systems.

ANWARUL ULOOM COLLEGE, DEPARTMENT OF ELECTRONICS

*M. Balaram*

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*[Signature]*

B.Sc. III year - Semester VI (b)  
 Paper - VI (b)  
 Code No. 6613  
 Microcontroller - 8051

Course Objective: Microcontroller - 8051

1. The paper aims at the functional operations of microcontroller - 8051
2. Learn about the microprocessors and the organization of microprocessor based systems.
3. Learn the architecture the 8051 is it's simplified architecture and instruction set.
4. Design and implement 8051 microcontroller based systems.
5. To learn interfacing of real world input and output devices.
6. To study various hardware & software tools for developing applications.

Course Outcomes: Microcontroller - 8051

Upon completion of this course, the students are able to:

- CO-1. Learn importance of Microcontroller in designing real time applications.
- CO-2. Understand function of Microcontroller.
- CO-3. Describe the architecture and instruction set of ARM microcontroller.
- CO-4. Organization of Intel 8051 microcontroller, its architecture, instruction set, programming and its memory organization, timing diagram
- CO-5. Design Memory Interfacing circuits.
- CO-6. Design and implement 8051 microcontroller based systems.

*M. S. Chameed*

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# ANWARUL ULOOM COLLEGE (AUTONOMOUS)

(Accredited by NAAC with 'A' Grade & An ISO 9001:2015 Certified Institution)

(Affiliated to Osmania University, Hyderabad)

**Department: English 2017-2018 Semester- I**

**Programme: Eg. BA/B.Com/ B.Sc./BBA**

## Programme Objective (General)

- 1 Strengthening their grammar and vocabulary.
- 2 Improving their listening and speaking skills.
- 3 Imparting to them important life skills and human values.
- 4 Encouraging them to think creatively and critically.
- 5 Expanding their emotional intelligence.

## Programme Outcomes (General)

- PO- 1 Read, understand, interpret a variety of written texts.
- PO – 2 Undertake guided and extended writing using appropriate vocabulary and correct grammar.
- PO- 3 Listen with comprehension and speak with confidence in both formal and informal contexts with reasonable fluency and acceptable pronunciation.
- PO- 4 Become employable with requisite professional skills, ethics and values.
- PO -5 Students will improve their reading fluency skills through extensive reading.

## (Programme Specific Outcomes)

1. Develop student's ability to use English in day –to- day life and real life situation.
2. Develop the student's communication skills necessary for further language learning, and for study, work and leisure in a range of authentic contexts and for a variety of audiences and purposes.
3. To understand the written text and able to use skimming, scanning skills.
4. To write simple English to express ideas etc.
5. Enable the student to recognize and use language as a vehicle of thought, reflection, self- expression and learning in other subjects, and as a tool for enhancing literacy.
6. Enable the students comprehend the spoken form.
7. Enable the student to develop

## Course Objectives:

1. Students will learn Literary Genre- Fiction, Prose, Drama and Poetry.
2. Students will comprehend the correct uses of Punctuation marks.
3. Students will build self- esteem by discovering their unique abilities and characteristic.
4. Students will learn techniques of writing Descriptive Passage.
5. Students will develop vocabulary through collocations.

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Head Department of English  
Anwar Uloom Degree College For Women  
Malleshpally, Hyderabad-T.S.

**COURSE OUTCOME**

CO1: Students are able to understand and cognize the contextual language learning through  
The genres of Short Fiction, Prose, Poetry and Drama.

CO 2: Students hone their skills in listening, speaking, reading and writing.

CO 3: Student gets familiar with various aspects of Telangana State.

CO 4: Student understands the role of Soft skills in personal and professional life.

CO 5: Students learn to channel their energy in a position direction through thought-provoking  
Value Orientation.

CO 6: Students develop basic communication skills which are for employability.

CO 7: Students develop aesthetic feelings for the understanding of poetry.

CO 8: Students develop imaginative thinking through writings and literary collection of genre-  
Fiction.

CO 9: Students acquire to sequence sentences into paragraph develop Self - Confidence.

CO 10: Students acquire various techniques of Writings.

  
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**Head Department of English**  
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# ANWARUL ULOOM COLLEGE (AUTONOMOUS)

(Accredited by NAAC with 'A' Grade & An ISO 9001:2015 Certified Institution)

(Affiliated to Osmania University, Hyderabad)

**Department: English 2017-2018 Semester- II**

**Programme: Eg. BA/B.Com/ B.Sc./BBA**

## Programme Objective (General)

- 1 Strengthening their grammar and vocabulary.
- 2 Improving their listening and speaking skills.
- 3 Imparting to them important life skills and human values.
- 4 Encouraging them to think creatively and critically.
- 5 Expanding their emotional intelligence.

## (Programme Outcomes) (General)


- PO- 1 Read, understand, interpret a variety of written texts.
- PO – 2 Undertake guided and extended writing using appropriate vocabulary and correct grammar.
- PO- 3 Listen with comprehension and speak with confidence in both formal and informal contexts with reasonable fluency and acceptable pronunciation.
- PO- 4 Become employable with requisite professional skills, ethics and values.
- PO -5 Students will improve their reading fluency skills through extensive reading.

## (Programme Specific Outcomes)

1. Develop student's ability to use English in day –to- day life and real life situation.
2. Develop the student's communication skills necessary for further language learning, and for study, work and leisure in a range of authentic contexts and for a variety of audiences and purposes.
3. To understand the written text and able to use skimming, scanning skills.
4. To write simple English to express ideas etc.
5. Enable the student to recognize and use language as a vehicle of thought, reflection, self- expression and learning in other subjects, and as a tool for enhancing literacy.
6. Enable the students comprehend the spoken form.
7. Enable the student to develop

## Course Objectives:

1. Students will understand Literary Genres: Fiction, Prose, Poetry and Drama
2. Students will understand Plosives and Fricative sounds.
3. students will learn the correct uses Articles.
4. Students will understand Adverbs and types of Adverbs.
5. Students will be able to write formal letters

  
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**SEMESTER: 2**

CO 1: Student achieve are understanding into the use of in different genres of writing.

CO 2: Students develop fluency get familiar and accuracy in speaking and written English.

CO 3: Students get familiar to some historical and cultural aspects of Telangana state.

CO 4: Students improve their skills in the area of Grammar and Vocabulary.

CO 5: Students sharpen hone their soft skills value orientation for better interpersonal relations.

CO 6: Learner performs all the LSRW skills in the class that ensures language competence.

CO7: Students understand the proper pronunciation techniques.

CO8: Students develop Leadership qualities through Value Orientation.

CO9: Students acquire Stress Management techniques.

CO10: Students understand Communication through different ways of Communication

  
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# ANWARUL ULOOM COLLEGE (AUTONOMOUS)

(Accredited by NAAC with 'A' Grade & An ISO 9001:2015 Certified Institution)

(Affiliated to Osmania University, Hyderabad)

Department: English 2017-2018 Semester- III

Programme: Eg. BA/B.Com/ B.Sc./BBA

## Programme Objective (General)

- 1 Strengthening their grammar and vocabulary.
- 2 Improving their listening and speaking skills.
- 3 Imparting to them important life skills and human values.
- 4 Encouraging them to think creatively and critically.
- 5 Expanding their emotional intelligence.

## (Programme Outcomes) (General)

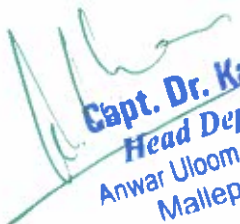
- PO- 1 Read, understand, interpret a variety of written texts.
- PO – 2 Undertake guided and extended writing using appropriate vocabulary and correct grammar.
- PO- 3 Listen with comprehension and speak with confidence in both formal and informal contexts with reasonable fluency and acceptable pronunciation.
- PO- 4 Become employable with requisite professional skills, ethics and values.
- PO -5 Students will improve their reading fluency skills through extensive reading.

## (Programme Specific Outcomes)

1. Develop student's ability to use English in day-to-day life and real life situation.
2. Develop the student's communication skills necessary for further language learning, and for study, work and leisure in a range of authentic contexts and for a variety of audiences and purposes.
3. To understand the written text and able to use skimming, scanning skills.
4. To write simple English to express ideas etc.
5. Enable the student to recognize and use language as a vehicle of thought, reflection, self-expression and learning in other subjects, and as a tool for enhancing literacy.
6. Enable the students comprehend the spoken form.
7. Enable the student to develop

## Course Objectives:

1. Students will learn Literary Genre Poetry.
2. Students will understand the various prepositional phrases like adjective phrases and adverb Phrases
3. To enable students different between American English and British English.
4. Students will be able to understand when to use Passive form of verb.

  
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**SEMESTER: 3**

CO 1: Students utilize critical thinking capability to using in English in different context.

CO 2: Students use English efficiently in real life communication.

CO 3: Students exhibit the ability to draft different kinds of regards and letters.

CO 4: Students develop their practical, emotional, intellectual and creative aspects of language

By integrating knowledge and skill

CO 5: Students learn different aspects of language by integrating knowledge and skills.

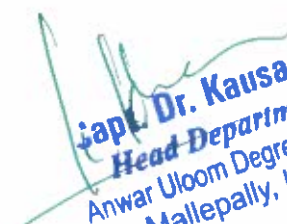
CO6: Students learn to Distinguish between Literal and Figurative Language.

CO7: Students learn difference in Meaning through various Accents.

CO8: Students learn to script different types of essays.

CO9: Students get connected through comparing, contrasting.

CO10: Students acquire Language proficiency through various channels.

  
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# ANWARUL ULOOM COLLEGE (AUTONOMOUS)

(Accredited by NAAC with 'A' Grade & An ISO 9001:2015 Certified Institution)

(Affiliated to Osmania University, Hyderabad)

**Department: English 2017-2018 Semester- IV**

**Programme: Eg. BA/B.Com/ B.Sc./BBA**

## Programme Objective (General)

- 1 Strengthening their grammar and vocabulary.
- 2 Improving their listening and speaking skills.
- 3 Imparting to them important life skills and human values.
- 4 Encouraging them to think creatively and critically.
- 5 Expanding their emotional intelligence.

## (Programme Outcomes) (General)

- PO- 1 Read, understand, interpret a variety of written texts.
- PO – 2 Undertake guided and extended writing using appropriate vocabulary and correct grammar.
- PO- 3 Listen with comprehension and speak with confidence in both formal and informal contexts with reasonable fluency and acceptable pronunciation.
- PO- 4 Become employable with requisite professional skills, ethics and values.
- PO -5 Students will improve their reading fluency skills through extensive reading.

## (Programme Specific Outcomes)

8. Develop student's ability to use English in day –to- day life and real life situation.
9. Develop the student's communication skills necessary for further language learning, and for study, work and leisure in a range of authentic contexts and for a variety of audiences and purposes.
10. To understand the written text and able to use skimming, scanning skills.
11. To write simple English to express ideas etc.
12. Enable the student to recognize and use language as a vehicle of thought, reflection, self- expression and learning in other subjects, and as a tool for enhancing literacy.
13. Enable the students comprehend the spoken form.
14. Enable the student to develop

## Course Objectives:

1. To aware students racial discrimination in America during the poet's life
2. Students will learn phrasal verbs and their different type.
3. Students will identify the number and person of the subject (Singular/ Plural Subject)
4. Students will understand Commonly confused words (Homonyms, Homophones and Homographs)

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<b>SEMESTER: 4</b>
CO 1: Students learn to use English skillfully in real life contexts.
CO 2: Students develop their rational to analyze, evaluation and review films and books.
CO 3: Students apply critical thinking to use English for personal and professional growth.
CO 4: Students learn to draft formal and informal letters and resume applying for job.
CO5: Students develop Concentration and speak with Confidence.
CO6: Students understand the message through poems and stories.
CO7: Students acquire knowledge of Grammar concord and Vocabulary.
CO8: Students Identify Commonly confused words in Vocabulary.
CO9: Students learn to write Report Formats of Business and Media reports.
CO10: Students develops Technical understanding of the English Language.

  
**Capt. D. Kausar Begur**  
Head Department of E  
Anwar Uloom Degree  
Mallepally, Hyderabad



LESSON संख्या	OBJECTIVES	OUTCOMES
1. प्रस्ताव	प्रस्ताव विषय में लेखक ने गहन श्रम से उपलब्ध 'उत्तम' शब्दों का प्रयोग करके किया है।	छात्रों को विषय, शब्द, अर्थ, एवं प्रयोजन के संबंध में शिक्षित करने के लिए प्रस्ताव का प्रयोग करना।
2. प्रस्ताव	लेखक ने प्रस्ताव का प्रयोग अपने लेखक के लेखक शब्दों में विशेष रूप से किया है।	छात्रों को प्रस्ताव के अर्थ और प्रयोग के संबंध में शिक्षित करने के लिए प्रस्ताव का प्रयोग करना।
3. प्रस्ताव	प्रस्ताव लेखक ने प्रस्ताव के अर्थ और प्रयोग के संबंध में विशेष रूप से किया है।	छात्रों को प्रस्ताव के अर्थ और प्रयोग के संबंध में शिक्षित करने के लिए प्रस्ताव का प्रयोग करना।
4. प्रस्ताव	लेखक ने प्रस्ताव के अर्थ और प्रयोग के संबंध में विशेष रूप से किया है।	छात्रों को प्रस्ताव के अर्थ और प्रयोग के संबंध में शिक्षित करने के लिए प्रस्ताव का प्रयोग करना।
5. प्रस्ताव	प्रस्ताव लेखक ने प्रस्ताव के अर्थ और प्रयोग के संबंध में विशेष रूप से किया है।	छात्रों को प्रस्ताव के अर्थ और प्रयोग के संबंध में शिक्षित करने के लिए प्रस्ताव का प्रयोग करना।
6. प्रस्ताव	प्रस्ताव लेखक ने प्रस्ताव के अर्थ और प्रयोग के संबंध में विशेष रूप से किया है।	छात्रों को प्रस्ताव के अर्थ और प्रयोग के संबंध में शिक्षित करने के लिए प्रस्ताव का प्रयोग करना।

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LESSON	OBJECTIVES	OUTCOMES
1. कवि का जन्म	उद्देश्य प्राप्त करने के लिए 'कवि' का अर्थ समझना होगा।	कवि का अर्थ समझना होगा।
2. कवि	कवि का अर्थ समझना होगा।	कवि का अर्थ समझना होगा।
3. कवि का जीवन	कवि का जीवन समझना होगा।	कवि का जीवन समझना होगा।
4. कवि का जीवन	कवि का जीवन समझना होगा।	कवि का जीवन समझना होगा।
5. कवि का जीवन	कवि का जीवन समझना होगा।	कवि का जीवन समझना होगा।
6. कवि का जीवन	कवि का जीवन समझना होगा।	कवि का जीवन समझना होगा।

Mrs. Mohi Fatima  
 H.O.D Dept of Hindi  
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 Neyyattal, Kerala







LESSON	OBJECTIVES	OUTCOMES
<p>1. ಪರಮ ಪುಸ್ತಕ</p> <p>2. ಪರಮ ಪುಸ್ತಕ</p> <p>3. ಪರಮ ಪುಸ್ತಕ</p> <p>4. ಪರಮ ಪುಸ್ತಕ</p> <p>5. ಪರಮ ಪುಸ್ತಕ</p> <p>6. ಪರಮ ಪುಸ್ತಕ</p> <p>7. ಪರಮ ಪುಸ್ತಕ</p> <p>8. ಪರಮ ಪುಸ್ತಕ</p> <p>9. ಪರಮ ಪುಸ್ತಕ</p> <p>10. ಪರಮ ಪುಸ್ತಕ</p>	<p>ಪರಮ ಪುಸ್ತಕದ ಅರ್ಥವನ್ನು ತಿಳಿಸುವುದು ಮತ್ತು ಅದನ್ನು ಅಳವಡಿಸುವುದು.</p> <p>ಪರಮ ಪುಸ್ತಕದ ಅರ್ಥವನ್ನು ತಿಳಿಸುವುದು ಮತ್ತು ಅದನ್ನು ಅಳವಡಿಸುವುದು.</p> <p>ಪರಮ ಪುಸ್ತಕದ ಅರ್ಥವನ್ನು ತಿಳಿಸುವುದು ಮತ್ತು ಅದನ್ನು ಅಳವಡಿಸುವುದು.</p> <p>ಪರಮ ಪುಸ್ತಕದ ಅರ್ಥವನ್ನು ತಿಳಿಸುವುದು ಮತ್ತು ಅದನ್ನು ಅಳವಡಿಸುವುದು.</p> <p>ಪರಮ ಪುಸ್ತಕದ ಅರ್ಥವನ್ನು ತಿಳಿಸುವುದು ಮತ್ತು ಅದನ್ನು ಅಳವಡಿಸುವುದು.</p> <p>ಪರಮ ಪುಸ್ತಕದ ಅರ್ಥವನ್ನು ತಿಳಿಸುವುದು ಮತ್ತು ಅದನ್ನು ಅಳವಡಿಸುವುದು.</p> <p>ಪರಮ ಪುಸ್ತಕದ ಅರ್ಥವನ್ನು ತಿಳಿಸುವುದು ಮತ್ತು ಅದನ್ನು ಅಳವಡಿಸುವುದು.</p> <p>ಪರಮ ಪುಸ್ತಕದ ಅರ್ಥವನ್ನು ತಿಳಿಸುವುದು ಮತ್ತು ಅದನ್ನು ಅಳವಡಿಸುವುದು.</p> <p>ಪರಮ ಪುಸ್ತಕದ ಅರ್ಥವನ್ನು ತಿಳಿಸುವುದು ಮತ್ತು ಅದನ್ನು ಅಳವಡಿಸುವುದು.</p> <p>ಪರಮ ಪುಸ್ತಕದ ಅರ್ಥವನ್ನು ತಿಳಿಸುವುದು ಮತ್ತು ಅದನ್ನು ಅಳವಡಿಸುವುದು.</p> <p>ಪರಮ ಪುಸ್ತಕದ ಅರ್ಥವನ್ನು ತಿಳಿಸುವುದು ಮತ್ತು ಅದನ್ನು ಅಳವಡಿಸುವುದು.</p>	<p>ಪರಮ ಪುಸ್ತಕದ ಅರ್ಥವನ್ನು ತಿಳಿಸುವುದು ಮತ್ತು ಅದನ್ನು ಅಳವಡಿಸುವುದು.</p> <p>ಪರಮ ಪುಸ್ತಕದ ಅರ್ಥವನ್ನು ತಿಳಿಸುವುದು ಮತ್ತು ಅದನ್ನು ಅಳವಡಿಸುವುದು.</p> <p>ಪರಮ ಪುಸ್ತಕದ ಅರ್ಥವನ್ನು ತಿಳಿಸುವುದು ಮತ್ತು ಅದನ್ನು ಅಳವಡಿಸುವುದು.</p> <p>ಪರಮ ಪುಸ್ತಕದ ಅರ್ಥವನ್ನು ತಿಳಿಸುವುದು ಮತ್ತು ಅದನ್ನು ಅಳವಡಿಸುವುದು.</p> <p>ಪರಮ ಪುಸ್ತಕದ ಅರ್ಥವನ್ನು ತಿಳಿಸುವುದು ಮತ್ತು ಅದನ್ನು ಅಳವಡಿಸುವುದು.</p> <p>ಪರಮ ಪುಸ್ತಕದ ಅರ್ಥವನ್ನು ತಿಳಿಸುವುದು ಮತ್ತು ಅದನ್ನು ಅಳವಡಿಸುವುದು.</p> <p>ಪರಮ ಪುಸ್ತಕದ ಅರ್ಥವನ್ನು ತಿಳಿಸುವುದು ಮತ್ತು ಅದನ್ನು ಅಳವಡಿಸುವುದು.</p> <p>ಪರಮ ಪುಸ್ತಕದ ಅರ್ಥವನ್ನು ತಿಳಿಸುವುದು ಮತ್ತು ಅದನ್ನು ಅಳವಡಿಸುವುದು.</p> <p>ಪರಮ ಪುಸ್ತಕದ ಅರ್ಥವನ್ನು ತಿಳಿಸುವುದು ಮತ್ತು ಅದನ್ನು ಅಳವಡಿಸುವುದು.</p> <p>ಪರಮ ಪುಸ್ತಕದ ಅರ್ಥವನ್ನು ತಿಳಿಸುವುದು ಮತ್ತು ಅದನ್ನು ಅಳವಡಿಸುವುದು.</p> <p>ಪರಮ ಪುಸ್ತಕದ ಅರ್ಥವನ್ನು ತಿಳಿಸುವುದು ಮತ್ತು ಅದನ್ನು ಅಳವಡಿಸುವುದು.</p>

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(Accredited by NAAC with 'A' Grade & An ISO 9001:2015 Certified Institution)


(Affiliated to Osmania University, Hyderabad)

Department: **HISTORY**

COURSE: **BA**

**2017-18**

<b>Programme Objective (General)</b>
1. Students will be able to demonstrate broad knowledge of Historical events and periods and their significance
2. Students will be able to explain and critique the Historical schools of thought that have shaped scholarly understanding of their fields of study
3. Students will be able to formulate historical arguments and communicate those arguments in clear and persuasive prose.
4. Students will be able to demonstrate a breadth of training across Historical time and space.
5. Students will be able to demonstrate a Historical awareness of the diversity of the Human experience across time and space.
<b>(Programme Outcomes) (General)</b>
PO- 1. Students will be able to demonstrate knowledge of the Chronology, narrative major events, personalities and turning points of the History of India.
PO -2. Provide multi-causal explanation of major Historical developments based on a centralized analysis of Modern World History
PO- 3. The B A graduates will be acquainted with the Social, Economical, Historical, Geographical, Ideological and Philosophical traditions and thinking.
PO- 4. The Program also improves the graduates to appear for various competitive examinations or choose the Post Graduate Programme of their choice.
PO -5. Programme provides the base to be the responsible Citizen.
<b>(Programme Specific Outcomes)</b>
PSO-1. Understand background of our religion, customs institutions, administration and so on.

  
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PSO -2. Understand the present existing social, political, religious and economic conditions of the people.

PSO -3. Analyze relationship between the past and the present is lively presented in the history.

PSO -4. Develop practical skills helpful in the study and understanding of historical events.

They:


- (a) Draw historical maps, charts, diagrams etc.
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PSO -5. Develop interests in the study of history and activities relating to history. They:

- (a) Collect ancient arts, old coins and other historical material.
- (b) Participate in historical drama and historical occasions;
- (c) Visit places of historical interests, archaeological sites, museums and archives;
- (d) Read historical documents, maps, charts etc.
- (e) Play active roles in activities of the historical organizations and associations.

## **Course Objective- Paper- I HISTORY OF INDIA {from earliest times to 700 CE}**

1. Students will be able to explain the Socio – Economic, Cultural and Political background, nature and scope of History.
2. Students will be able to demonstrate by analyzing and evaluating Historical information from multiple sources of Ancient History.
3. Students will be able to identify the gaps in Historical and Archeological evidence.
4. Students will be able to identify the Geographical features and sites of Indus Valley.
5. Students will be able to describe the three great Emperors of Mauryan Empire.

  
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## Course Objective- Paper- II HISTORY OF INDIA {from 700 CE to 1526 CE}

1. After the completion of this course students will be able to identify and describe the subsequent rise of Regional States – Pallavas, Chalukyas of Badami, Rashtrakutas, Cholas.
2. Students will be able to explain local self Government under Cholas, Society, Economy, Literature and the Bhakti movement in South India.
3. Students will be able to explain the conquest of Sindh by Arabs, about the Ghaznavids and Ghoris
4. Students will understand the Administrative reforms done under different rulers of Delhi Sultanate, understand strategies, Military control and development of Political institutions and relationships amongst rulers.
5. Students will be able to understand the Caste system was condemned by the Bhakti saints, the lower classes were raised to a position of great importance.

## Course Objective- Paper- III HISTORY OF INDIA {from 1526 CE to 1857CE}

1. Explain the foundation of the Mughal Empire, the qualities of Babur and Akbar that made them great successful Kings.
2. Evaluate the achievements of the rulers about their conquests and their Administration.
3. Acquire knowledge about the rise of Marathas and the life and achievements of Shivaji the great and his Administration.
4. Demonstrate by analyzing and evaluating Historical information from multiple sources of Maratha History.
5. Learn about the Qutub Shahi dynasty ruled the Golconda Sultanate, were great builders whose structures included Charminar, as well as patrons of Learning.

## Course Objective- Paper- IV HISTORY OF INDIA {from 1858 CE to 1964 CE}

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1. Explain about the Revolt of 1857, its causes, nature importance and results.
2. It united, though in a limited way, many sections of Indian Society for common cause.
3. Understand about Lord Rippon's repeal of the Vernacular press and Lord Curzon's appointment of Police Commission and Partition of Bengal (1905).
4. Discuss about the Minto – Morley reforms (1909) and 1919 Act of the parliament of U K to expand participation of Indians in the Government of India and Act 1935.
5. Factors for Social change during Indian Renaissance, it is a new awakening, exposure to Scientific thoughts.

## **Course Objective- Paper- V A HISTORY OF MODERN WORLD {From 1453 CE to 1815 CE}**

1. The decline of Medieval, Socio – Political, Religious and Economic conditions.
2. Assess the American Colonial experience under English domination through the Political, Social, Economical forces that shaped the development.
3. The reformation in England and the Reformists, Zwengli, Luthers, Calvin etc.
4. Industrialization and transformation of Society, there emerged a middle-class consisting of Businessmen working professionals, industrialists, labourers and working class people.
5. The characteristic features of Renaissance and various Geographical discoveries and rise of Colonialism.

## **Course Objective- Paper- V B ISLAMIC HISTORY AND CULTURE {From earliest times to fall of Ummayyads}**

1. Understand better the broad spectrum of Social and Cultural diversity across humanity and exposure to different cultures and value system.
2. Explain Geographical and Physical conditions of Arabs before Islam and the prevailing religion.

  
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3. Understand by 630 he had unified most of Arabia under a single Religion Islam, his Migration from Mecca to Madina.
4. Understand the Arab Polytheism was based on the belief in deities and other supernatural beings such as Djina, Gods and Goddesses were worshipped at local shrines such as the Kaaba in Mecca.
5. Prophet Muhammed ( P B U H ) he was a man of high spirits, respectful, loving, founder of Islam. At 40 he got revelations from Allah.

## **Course Objective- Paper- VI A WORLD HISTORY {From 1815CE to 1950CE}**

1. Identify the technological advances that made the Industrial Revolution is possible in both Europe and the United States.
2. Students gather information about the emergence of Japan as a powerful State and understand the Political History.
3. Understand the Capitalism which became the World's dominant Economic power, individual capitalists are typically wealthy people who benefits from the system of Capitalism by making increased profits.
4. Learn Chinese Revolution, nationalist democratic revolt that over threw the Manchu dynasty and created a Republic and Mao's divided land among the local farmers to gain support of Peasants.
5. Learn about the causes, course and results of First World War [1914 – 18].

## **Course Objective- Paper- VI B ISLAMIC HISTORY AND CULTURE {From rise of Abbasids to Crusades }**

1. Understand the Umayyads expansion of territory extending as far West as Spain and as far East as India, allowing both Islam and the Arabic language to spread over a vast area.
2. About the great Umayyads their Political, Economic and Social conditions about the transformation of Caliphate from a religious institution to a dynastic one.
3. About the constructions of Umayyads famous buildings mosque of Damascus and the reasons for the fall of the Empire.



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4. Discuss the spread of Islam and identify how the Caliphs maintained authority over the conquered territories.

5. The Abbasids Caliphate rule was a time of peace and prosperity.

## Course Outcome- Paper- I HISTORY OF INDIA {from earliest times to 700 CE}

1. Students will be able to explain Mauryan Government, Economy and Religion.

1. Students will be able to describe King Asoka, the greatest Mauryan King and his war Kalinga.

2. Students will acquire the knowledge about the sources for the study of Guptas.

3. Students will be able to describe Samudragupta's and Chadragupta's achievements.

4. Students will be able to explain the importance of Fahien's visit to India and Gupta's Administration, Society and Econoy and the Scientific development during the Gupta period.

## Course Outcome- Paper- II HISTORY OF INDIA {from 700 CE to 1526 CE}

1. Students will be able to understand the impact on Religious, Cultural and Social life in South Asia that Sufism has left


2. Students will be able to Sufi Scholars made an instrumental and influential development in Social, Economic and Philosophical culture.

3. Students will be able to explain the Kakatiya dynasty that ruled most of the Eastern Deccan region, their great King Ganapatideva, who expanded the Kingdom.

4. Students will be able to about Marcopole's visit to India and made note of Rudrama Devi's rule and nature in flattering terms and her success.

5. Students will be able to learn about the Vijayanagara Empire that had left lasting legacy of Architecture, Sculpture and Painting.

## Course Outcome- Paper- III HISTORY OF INDIA {from 1526 CE to 1857 CE}

  
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1. Explain the advent of Europeans to India, the settlement of Anglo – French rivalry.
2. Formation, Expansion and consolidation of British Empire in India under East India Company.
3. Learn the two objectives of East India Company to permanently rule in India was trade and ambition for Political power.
4. Explain about the various reforms made by British Generals – Warren Hastings, Lord Cornwallis, Lord William Bentinck and Lord Dalhousie.
5. Understand the rise of Sikhs in the Punjab about the Sikh Gurus, Ranjit Singh and their Administration.

## **Course Outcome- Paper- IV HISTORY OF INDIA {from 1858 CE to 1964 CE}**

1. New discoveries and free thinking and religious reform movements were formed.
2. Learn about Mahatma Gandhi, the development of non – violent mass action and the Indian movement for Independence.
3. Explain the rise of Nationalism, identify the various phases of National movement.
4. Interpret the results of Salt March and Quit India Movement, express their views on Independence and Partition.
5. Understand the foundation of Independent India.

## **Course Outcome- Paper- V A HISTORY OF MODERN WORLD {From 1453 CE to 1815 CE}**

1. Nation States – Spain, France, England, Russia, Austria, Italy and Prussia emergence.
2. Enlightened despots – Frederick the Great, Peter the Great and Joseph – II.
3. The glorious Revolution its causes and effects.
4. The peace of Paris, a collection of treaties signed by both sides ended the war. Britain recognized the United States of America as an independent country and the reforms made by Napoleon – introduced

  
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civil codes in 1804, it established equality before the law and simplified Administrative divisions and abolished Feudal system.

## 5. The Feudalism in Europe and Asia.

### **Course Outcome- Paper- V B ISLAMIC HISTORY AND CULTURE {From earliest times to fall of Ummayyads}**

1. Explain battles of Islam, Battle of Badr, Major Military Victory led by Prophet Muhammed, battle of Ditch, which ultimately forced the Meccans to recognize the Political and Religious strength of Muslim Community in Madina.

2. To understand the essential teachings of Islam and Islamic sacred sources.

3. To learn about the Historical development of Islam from the time of the Prophet Muhammed to the present.

4. Explain about the lifes, teachings, preachings, expansions, conquests, Administration of the four Kalifas – Hazrath Abu Bakr, Hazrath Omar, Hazrath Osman and Hazrath Ali.

5. Understand the conditions of Arabs and the struggle for the power between Syria, Al Iraq and al Hijaz

### **Course Outcome- Paper- VI A WORLD HISTORY {From 1815 CE to 1950 CE}**

1. The aim of League of Nation – to preserve peace and security in the world, to promote just and honorable relations among the nations of the world.

2. During Great Depression G D P declined by 30% and unemployment reached more than 20%, home lessness increased.

3. Japan joint Germany and Italy in the Tripartite pact agreeing to help each other and the rise of Turkey and Mustafa Kamal Pasha.

4. Students understand the Military operations that led to the defeat of Nazi regime and their allies in Europe and Japanese surrender in the Second World War (1939-45) and its causes and results.

*K. S. S.*  
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5. Students get familiarize with the formation of U N O, its contribution to the World peace, its organs, aims and importance.

## **Course Outcome- Paper- VI B ISLAMIC HISTORY AND CULTURE {From rise of Abbasids to Crusades}**

1. Great advances were made in many areas of Science, Mathematics and Medicines. The Abbasids ruled the Muslim world as an absolute hereditary monarchy between 750 and 258 CE
2. The Social and Economic life of Abbasids and the development of fine Arts, Education, Philosophy and Literature.
3. Abbasids cultural contribution, Baghdad was centrally located between Europe and Asia and was important area for Trade and Exchange of ideas.
4. Understand about the wars of Crusades, their impact and results and the fall of the Abbasids.
5. Learn about the Political, Economic and Educational institutions. Learn about Fine Arts, Literature and general Culture.

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Department: **HISTORY**

Programme: **MA**

Year: **2017-18**

<b>Programme Objective (General)</b>
1. Students will be able to demonstrate broad knowledge of Historical events and periods and their significance
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## Course Objective- Paper- II HISTORY OF INDIA {from 700 CE to 1526 CE}

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4. Demonstrate by analyzing and evaluating Historical information from multiple sources of Maratha History.
5. Learn about the Qutub Shahi dynasty ruled the Golconda Sultanate, were great builders whose structures included Charminar, as well as patrons of Learning.

## Course Objective- Paper- IV HISTORY OF INDIA {from 1858 CE to 1964 CE}

  
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1. Explain about the Revolt of 1857, its causes, nature importance and results.
2. It united, though in a limited way, many sections of Indian Society for common cause.
3. Understand about Lord Rippon's repeal of the Vernacular press and Lord Curzon's appointment of Police Commission and Partition of Bengal (1905).
4. Discuss about the Minto – Morley reforms (1909) and 1919 Act of the parliament of U K to expand participation of Indians in the Government of India and Act 1935.
5. Factors for Social change during Indian Renaissance, it is a new awakening, exposure to Scientific thoughts.

## **Course Objective- Paper- V A HISTORY OF MODERN WORLD {From 1453 CE to 1815 CE}**

1. The decline of Medieval, Socio – Political, Religious and Economic conditions.
2. Assess the American Colonial experience under English domination through the Political, Social, Economical forces that shaped the development.
3. The reformation in England and the Reformatists, Zwengli, Luthers, Calvin etc.
4. Industrialization and transformation of Society, there emerged a middle-class consisting of Businessmen working professionals, industrialists, labourers and working class people.
5. The characteristic features of Renaissance and various Geographical discoveries and rise of Colonialism.

## **Course Objective- Paper- V B ISLAMIC HISTORY AND CULTURE {From earliest times to fall of Ummayyads}**

1. Understand better the broad spectrum of Social and Cultural diversity across humanity and exposure to different cultures and value system.
2. Explain Geographical and Physical conditions of Arabs before Islam and the prevailing religion.



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3. Understand by 630 he had unified most of Arabia under a single Religion Islam, his Migration from Mecca to Madina.
4. Understand the Arab Polytheism was based on the belief in deities and other supernatural beings such as Djina, Gods and Goddesses were worshipped at local shrines such as the Kaaba in Mecca.
5. Prophet Muhammed ( P B U H ) he was a man of high spirits, respectful, loving, founder of Islam. At 40 he got revelations from Allah.

## **Course Objective- Paper- VI A WORLD HISTORY {From 1815CE to 1950CE}**

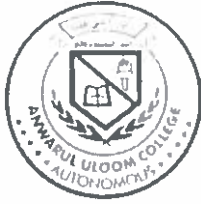
1. Identify the technological advances that made the Industrial Revolution is possible in both Europe and the United States.
2. Students gather information about the emergence of Japan as a powerful State and understand the Political History.
3. Understand the Capitalism which became the World's dominant Economic power, individual capitalists are typically wealthy people who benefits from the system of Capitalism by making increased profits.
4. Learn Chinese Revolution, nationalist democratic revolt that over threw the Manchu dynasty and created a Republic and Mao's divided land among the local farmers to gain support of Peasants.
5. Learn about the causes, course and results of First World War [1914 – 18].

## **Course Objective- Paper- VI B ISLAMIC HISTORY AND CULTURE {From rise of Abbasids to Crusades }**

1. Understand the Ummayyads expansion of territory extending as far West as Spain and as far East as India, allowing both Islam and the Arabic language to spread over a vast area.
2. About the great Ummayyads their Political, Economic and Social conditions about the transformation of Caliphate from a religious institution to a dynastic one.
3. About the constructions of Ummayyads famous buildings mosque of Damascus and the reasons for the fall of the Empire.

  
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4. Discuss the spread of Islam and identify how the Caliphs maintained authority over the conquered territories.

5. The Abbasids Caliphate rule was a time of peace and prosperity.

## **Course Outcome- Paper- I HISTORY OF INDIA {from earliest times to 700 CE}**

1. Students will be able to explain Mauryan Government, Economy and Religion.

1. Students will be able to describe King Asoka, the greatest Mauryan King and his war Kalinga.

2. Students will acquire the knowledge about the sources for the study of Guptas.

3. Students will be able to describe Samudragupta's and Chadragupta's achievements.

4. Students will be able to explain the importance of Fahien's visit to India and Gupta's Administration, Society and Econoy and the Scientific development during the Gupta period.

## **Course Outcome- Paper- II HISTORY OF INDIA {from 700 CE to 1526 CE}**

1. Students will be able to understand the impact on Religious, Cultural and Social life in South Asia that Sufism has left


2. Students will be able to Sufi Scholars made an instrumental and influential development in Social, Economic and Philosophical culture.

3. Students will be able to explain the Kakatiya dynasty that ruled most of the Eastern Deccan region, their great King Ganapatideva, who expanded the Kingdom.

4. Students will be able to about Marcopole's visit to India and made note of Rudrama Devi's rule and nature in flattering terms and her success.

5. Students will be able to learn about the Vijayanagara Empire that had left lasting legacy of Architecture, Sculpture and Painting.

## **Course Outcome- Paper- III HISTORY OF INDIA {from 1526 CE to 1857 CE}**

  
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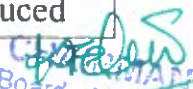
1. Explain the advent of Europeans to India, the settlement of Anglo – French rivalry.
2. Formation, Expansion and consolidation of British Empire in India under East India Company.
3. Learn the two objectives of East India Company to permanently rule in India was trade and ambition for Political power.
4. Explain about the various reforms made by British Generals – Warren Hastings, Lord Cornwallis, Lord William Bentinck and Lord Dalhousie.
5. Understand the rise of Sikhs in the Punjab about the Sikh Gurus, Ranjit Singh and their Administration.

## **Course Outcome- Paper- IV HISTORY OF INDIA {from 1858 CE to 1964 CE}**

1. New discoveries and free thinking and religious reform movements were formed.
2. Learn about Mahatma Gandhi, the development of non – violent mass action and the Indian movement for Independence.
3. Explain the rise of Nationalism, identify the various phases of National movement.
4. Interpret the results of Salt March and Quit India Movement, express their views on Independence and Partition.
5. Understand the foundation of Independent India.

## **Course Outcome- Paper- V A HISTORY OF MODERN WORLD {From 1453 CE to 1815 CE}**

1. Nation States – Spain, France, England, Russia, Austria, Italy and Prussia emergence.
2. Enlightened despots – Fredrick the Great, Peter the Great and Joseph – II.
3. The glorious Revolution its causes and effects.
4. The peace of Paris, a collection of treaties signed by both sides ended the war. Britain recognized the United States of America as an independent country and the reforms made by Napoleon – introduced

  
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civil codes in 1804, it established equality before the law and simplified Administrative divisions and abolished Feudal system.
5. The Feudalism in Europe and Asia.
<b>Course Outcome- Paper- V B ISLAMIC HISTORY AND CULTURE {From earliest times to fall of Ummayyads}</b>
1. Explain battles of Islam, Battle of Badr, Major Military Victory led by Prophet Muhammed, battle of Ditch, which ultimately forced the Meccans to recognize the Political and Religious strength of Muslim Community in Madina.
2. To understand the essential teachings of Islam and Islamic sacred sources.
3. To learn about the Historical development of Islam from the time of the Prophet Muhammed to the present.
4. Explain about the lifes, teachings, preachings, expansions, conquests, Administration of the four Kalifas – Hazrath Abu Bakr, Hazrath Omar, Hazrath Osman and Hazrath Ali.
5. Understand the conditions of Arabs and the struggle for the power between Syria, Al Iraq and al Hijaz
<b>Course Outcome- Paper- VI A WORLD HISTORY {From 1815 CE to 1950 CE}</b>
1. The aim of League of Nation – to preserve peace and security in the world, to promote just and honorable relations among the nations of the world.
2. During Great Depression G D P declined by 30% and unemployment reached more than 20%, home lessness increased.
3. Japan joint Germany and Italy in the Tripartite pact agreeing to help each other and the rise of Turkey and Mustafa Kamal Pasha.
4. Students understand the Military operations that led to the defeat of Nazi regime and their allies in Europe and Japanese surrender in the Second World War (1939-45) and its causes and results.

  
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5. Students get familiarize with the formation of U N O, its contribution to the World peace, its organs, aims and importance.

## **Course Outcome- Paper- VI B ISLAMIC HISTORY AND CULTURE {From rise of Abbasids to Crusades}**

1. Great advances were made in many areas of Science, Mathematics and Medicines. The Abbasids ruled the Muslim world as an absolute hereditary monarchy between 750 and 258 CE
2. The Social and Economic life of Abbasids and the development of fine Arts, Education, Philosophy and Literature.
3. Abbasids cultural contribution, Baghdad was centrally located between Europe and Asia and was important area for Trade and Exchange of ideas.
4. Understand about the wars of Crusades, their impact and results and the fall of the Abbasids.
5. Learn about the Political, Economic and Educational institutions. Learn about Fine Arts, Literature and general Culture.

  
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**DEPARTMENT: MATHEMATICS  
2017-2018**

**PROGRAM OUTCOMES, PROGRAM SPECIFIC OUTCOMES AND COURSE OUTCOMES**

**PROGRAM OBJECTIVES: B Sc 1 YEAR 1st SEMESTER  
PREPARE STUDENTS FOR PURSUING RESEARCH OR CAREERS IN INDUSTRY IN MATHEMATICAL  
SCIENCE.**

**SUBJECTNAME: DIFFERENTIAL CALCULUS**

**COURSE OBJECTIVE: UNDERSTAND THE GENESIS OF DIFFERENTIAL CALCULUS**

PROGRAM	PROGRAM OBJECTIVES	PROGRAM SPECIFIC OBJECTIVES
BSC MATHEMATICS	PO1: PROMOTION OF SELF STUDY PO2: PROMOTION OF THINKING PO3: CONFIDENCE PO4: CREATIVITY PO5: UNDERSTANDING CONCEPTS PO7: DEVELOPMENT OF WRITING, LISTENING AND TEACHING SKILLS PO8: GROUP DISCUSSION (SKILL OF TEAM WORK, INTERPERSONAL SKILL) PO9: SOCIAL VALUES, UNITY IN DIVERSITY	PSO1: TO ENABLE THE STUDENT TO CULTIVATE A MATHEMATICAL WAY OF THINKING I.E. MAKING CONJECTURES, VERIFYING THEM WITH FURTHER OBSERVATIONS, GENERALIZING THEM, TRYING TO FIND PROOFS AND MAKING OBSERVATIONS.  PSO2: TO ENABLE THE STUDENTS TO QUANTIFY THEIR EXPERIENCES IN OTHER SUBJECTS THEY STUDY,  PSO3: TO ENABLE THE STUDENTS TO LEARN THE BASIC STRUCTURES OF MATHEMATICS THROUGH UNIFYING CONCEPTS AND TO MOTIVATE THESE STRUCTURES THROUGH APPLICATIONS.  PSO4: TO PROVIDE HIGH QUALITY MATHEMATICAL FOR THEMSELVES.  PSOS: TO PROVIDE HIGH QUALITY MATHEMATICAL EDUCATION AT ALL LEVELS THAT WILL BE VITAL FOR SCIENTIFIC AND TECHNOLOGICAL DEVELOPMENTS.

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B Sc I YEAR SEMESTER -I PAPER I

COURSE TITLE:DIFFERENTIAL

CALCULUS

COURSE LEARNING OUTCOMES :THIS COURSE WILL ENABLE THE STUDENTS TO:

- 1.GET THE KNOWLEDGE OF SUCCESSIVE DIFFERENTIATION
- 2.INTERMEDIATE FORMS
- 3.PARTIAL DIFFERENTIATION
- 4.MAXIMA AND MINIMA

AFTER SUCCESSFUL COMPLETION OF THE COURSE ,STUDENTS WILL BE ABLE TO

- 1)Assimilate the notions of differentiation and partial differentiation..
- 2)Calculate the first order and second order differentiation values..
- 3)Understand the consequences of various mean value theorems for differentiable functions.
- 4)Sketch curve in cartesian and polar coordinates systems
- 5)Apply derivatives test in optimization problems appearing in social sciences ,physical science life science and a host of other disciplines.

INTEGRAL CALCULUS; the main purpose for course is to introduce

- 1)The concepts of definite and indefinite integrals
- 2)methods of integration .
- 3)Some applications of integral calculus .
- 4)Polar coordinates

B Sc I YEAR SEMESTER II PAPER II

COURSE TITLE:DIFFERENTIAL

EQUATIONS

COURSE LEARNING OUTCOMES :THIS COURSE WILL ENABLE THE STUDENTS TO:

1. TO GET THE KNOWLEDGE OF DIFFERENTIAL EQUATION OF FIRST ORDER AND FIRST DEGREE.
2. COMPLETE INFORMATION OF HIGHER ORDER DIFFERENTIAL EQUATION
3. METHOD OF UNDETERMINED COEFFICIENT
4. PARTIAL DIFFERENTIAL EQUATION

ON SUCCESSFUL COMPLETION OF THE COURSE ,STUDENTS WILL BE ABLE TO:

1. to get the complete knowledge of differential operators and degree or differential equations.

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2. Distinguish between linear, nonlinear, partial and ordinary differential equations.
3. Solve basic application problems described by second order linear differential equations with constant coefficients.
4. Find power series solutions about ordinary points and singular points.
5. Find the transforms of derivatives and integrals.
6. Obtain an approximate set of solution function values to a second order boundary value problem using a finite difference equation.
7. Obtain an approximate set of solution function values to a second order boundary value problem using a finite difference equation.


**B.Sc II-YEAR SEMESTER-III PAPER-III Code Course Title ..... Real Analysis 5T**

**COURSE LEARNING OUTCOMES :THIS COURSE WILL ENABLE THE STUDENTS TO:**

1. TO GET THE KNOWLEDGE OF SEQUENCE
2. GET THE KNOWLEDGE OF SUBSEQUENCE
3. GET THE COMPLETE INFORMATION OF SEQUENCE AND SERIES
- GET THE INFORMATION OF INTEGRATION

After completing the course students are expected to be able to:

1. Describe the basic difference between the rational and real numbers.
2. Give the definition of concepts related to metric spaces such as continuity, compactness, convergent etc.
3. Give the essence of the proof of bolzano welerstrass theorem the contraction theorem as well as the existence of convergent subsequence using equicontinuity.
4. Evaluate the limits of a wide class of real sequences.

  
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5. Determine whether or not real series are convergent by comparison with standard series or using the ratio test. Understand and perform simple proofs.
6. Students will be able to demonstrate basic knowledge of key topics in classical real analysis.
7. The course perviews the basic for further studies with in function analysis, topology & function Theory.

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**B.Sc II-YEAR SEMESTER-IV PAPER-III Code Course Title ..... ALGEBRA 5T**

**COURSE LEARNING OUTCOMES :THIS COURSE WILL ENABLE THE STUDENTS TO:**

1. GET THE COMPLETE KNOWLEDGE OF GROUPS.
2. GET THE KNOWLEDGE OF ISOMORPHISMS.
3. GET THE INFORMATION OF RINGS.
4. GET THE KNOWLEDGE OF RING HOMOMORPHISMS.

**After completing the course students are expected to be able to:**

- €On completion of this unit successful students will be able to:
- €Demonstrate when a binary algebraic structure forms a group.
- €Construct Caley tables.
- €Determine possible subgroups of a group.
- €Identify normal subgroups of a group.

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- €Examine symmetric and permutation groups.
  - €Explain group and subgroup orders using Lagrange's theorem.
  - €Identify cyclic subgroups and their generators.
  - €Identify factor group. Implement group axioms.
  - €Group Homomorphism and isomorphism
  - €Rings and subrings, integral domains
  - €Ideals and Factor Rings , Prime and Maximal Ideals, Ring Homomorphism and properties
- 


**B.Sc III-YEAR SEMESTER V Course title code...LINEAR ALGEBRA code... (5T each)**

**COURSE LEARNING OUTCOMES :THIS COURSE WILL ENABLE THE STUDENTS TO:**

- 1.TO GET THE KNOWLEDGE OF VECTOR SPACES.
2. TO GET THE KNOWLEDGE OF THE ADJOINTNOR TRANSPOSE OF A LINEAR TRANSFORMATION.
- 3.GET THE INFORMATION OF MULTIPLES INTEGRALS.
- 4.GET THE KNOWLEDGE OF VECTOR DIFFERENTIATION.

**After completing the course students are expected to be able to:**

1. Understand the combination of two important aspects of modern mathematics via Linear Algebra and Vector Calculus.
2. Linear Algebra emphasizes the concept of vector spaces and linear transformations which are essential in simplifying various scientific problems.

  
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3. It aims at inculcating problem solving skills within students to enable them compute large linear systems.
4. The practical applications of "Linear Algebra" are in demography, archaeology, electrical engineering, fractal geometry and traffic analysis.
5. Vector calculus motivates the study of vector differentiation and integration in two and three dimensional spaces.
6. It is widely accepted as a prerequisite in various fields of science and engineering, It offers important tools for understanding functions (both real & complex) non-Euclidean geometry and topology.
7. These tools are employed successfully in different branches of engineering and physics (such as electromagnetic fields, fluid flow and gravitational fields).


**B.Sc III-YEAR SEMESTER-VI Numerical Analysis Paper VI subject Code:**

**COURSE LEARNING OUTCOMES :THIS COURSE WILL ENABLE THE STUDENTS TO:**

1. GET THE KNOWLEDGE OF ERRORS IN NUMERICAL COMPUTATION.
2. GET THE COMPLETE KNOWLEDGE OF INTERPOLATION.
3. GET THE COMPLETE KNOWLEDGE OF CURVE FITTING.
4. GET THE COMPLETE KNOWLEDGE OF SOLUTION OF LINEAR SYSTEM.

**After completing the course students are expected to be able to:**

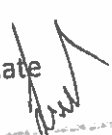
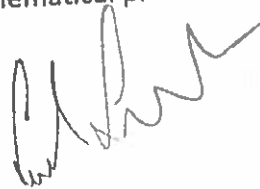
1. The course will also develop an understanding of the elements of error analysis for numerical methods and certain proofs.
2. The main objective of this course is to provide students with an introduction to the field of numerical analysis.
3. Derive appropriate numerical methods to solve interpolation based problems.
4. Derive appropriate numerical methods to solve probability based problems.

  
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5. Prove results for various numerical root finding methods.

**Learning Outcomes:** After the completion of the course, Students will be able to

1. Understand the theoretical and practical aspects of the use of numerical analysis.
2. Proficient in implementing numerical methods for a variety of multidisciplinary applications
3. Establish the limitations, advantages, and disadvantages of numerical analysis.
4. Derive numerical methods for various mathematical operations and tasks, such as interpolation, differentiation, integration, the solution of linear and nonlinear equations, and the solution of differential equations.
5. Understand of common numerical analysis and how they are used to obtain approximate solutions to otherwise intractable mathematical problems.

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**2017 - 2018 PROGRAMME: MATHEMATICS (M.SC. APPLIED MATHS)**

**SUBJECT NAME : Abstract Algebra**

**SEMESTER - I PAPER - I**

**PROGRAM OBJECTIVE:** Prepare students for pursuing research or careers in industry, mathematical sciences and allied field. **COURSE OBJECTIVE:** Concept of group action and theorems about group actions

UNIT	UNIT -OBJECTIVE	LEARNING OUTCOMES
I	Automorphisms	Structure of Permutation groups
II	Direct Product, Sylow's Theorems	Facility in solving real life problems by thinking logically
III	Zorn's lemma	Structure of Permutation Groups
IV	Euclidean Domains	Universality of Polynomial Rings

**SUBJECT NAME: ANALYSIS**

**SEMESTER-II PAPER -II**

**COURSE OBJECTIVE :**

Understand and ability to handle convergence of series and sequence of function.

\*Ability to differentiate function in  $\mathbb{R}^n$ .

UNIT	UNIT-OBJECTIVE	LEARNING OUTCOMES.
1	Metric, compact sets, perfect sets-connected sets.	Basic definition of metric space, norm linear space and inner product space.
2	Limits, continuous, discontinuous monotone functions.	Series and sequence of continuous function.
3	Riemann-Steinitz integral (R.S.I), Rectifiable curves.	Definition of R.S.I and existence of integral and its properties.
4	Sequence and series of function approximation of continuous function.	Equicontinuous families and Stone - Weierstrass theorem.

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**SUBJECT NAME: MATHEMATICAL METHODS**

**SEMESTER -I PAPER-III**

**COURSE OBJECTIVE:** Understand the genesis of ordinary and partial differential equation

unit	Topics	Learning outcomes
I	Existence and Uniqueness of solution, Picard's theorem, Linear PDE	Know Picard's method of successive approximation of solutions of first order differential equation and learn to get exact solution
II	P.D.E of order two with variable coefficients, classification, Solution of one dimensional heat, wave equation and Laplace equation	Learn various techniques of getting exact solutions of solvable first order differential equation and linear differential equation of higher order
III	Power series of O.D.E, Legendre Polynomial	Power series method for higher order linear equations especially in cases when there is no method available
IV	Bessel's functions, Hermite Polynomials	Formulate mathematical models in the form of O.D.E to suggest possible solutions

**SUBJECT NAME: MECHANICS**

**SEMESTER -I PAPER-IV**

**COURSE OBJECTIVE:** Understanding of the fundamental axioms in mathematics and capability of developing ideas based on them.

unit	Topics	Learning outcomes
I	Equilibrium in a uniform Gravitational field.	Determine the centre of gravity of materialistic systems Discuss the Equilibrium of a uniform cable hanging under its own weight.
II	Rotation of a rigid body about a fixed axis, moment of inertia.	Familiarize with subject matter which has been the single Centre to which were drawn Mathematicians, physicists, Astronomers and Engineers together.
III	Rotational Kinetic energy. Rigid body.	Deals with the Kinetics and Kinetics of the rectilinear Rigid body and planar motion of a particle including the Constrained of particles.
IV	Lagrange's Equation and Their applications. Generalized Momentum.	Understand necessary conditions for the equilibrium of Particle acted upon by various force and learn the principle of vertical work for a system of coplanar Forces acting on a particle.

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SUBJECT NAME : ADVANCED ALGEBRA

SEMESTER –II PAPER – ICOURSE OBJECTIVE: Concept of group action and theorems about group actions

UNIT	UNIT –OBJECTIVE	LEARNING OUTCOMES
I	ALGEBRAIC EXTENSION OF FIELD	GOLOIS THEORY ALLOWS THE STUDENT TO DEAL WITH EFFECTIVE COMPUTATION IN ALGEBRAIC EXTENSION OF FIELD
II	NORMAL AND SEPARABLE EXTENSION	STUDENT ARE EXPECTED TO BE PROFICIENT IN SOLVING BASIC ORDINARY AND PARTIAL DIFFERENTIAL EQUATION
III	GALOIS THEORY	FACILITY WITH FIELDS AND THEIR EXTENSIONS INCLUDING EXPERTISE IN EXPLICIT CALCULATIONS WITH AND CONSTRUCTIONS OF EXAMPLES
IV	APPLICATION OF GALOIS THEORY TO CLASSICAL PROBLEM	THE MAIN OBJECTIVES OF THIS APPLICATION IS TO DEVELOP NOTIONS OF GALOIS THEORY THEORY AND THEIR AOOPLICATIONS TO CLASSICAL PROBLEMS

SUBJECT NAME: ADVANCED ANALYSIS

SEMESTER-II PAPER -II

**COURSE OBJECTIVE:** Ability to handle ordinary differential equation and solve them under appropriate assumption. Ability to solve a linear system of O.D.Es

UNIT	UNIT –OBJECTIVE	LEARNING OUTCOMES.
1.	Algebra of sets-outer measure measurable function (M.F)	Basic definition of algebra sets, outer measure and M.F
2.	Riemann integral, integral of a non-negative function.	The notion of convergence in $c[0,1]$ and related theorems
3.	Convergence in measure, function of bounded variation.	Apply implicit and inverse function theorem.
4.	Differentiation of an integral convergence and completeness.	Apply minkowski and and Holders inequalities.

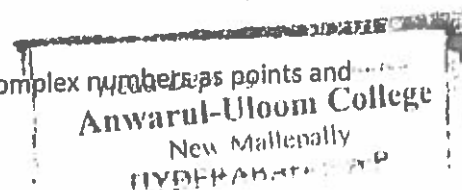
SUBJECT NAME

COMPLEX ANALYSIS

SEMESTER –II

PAPER-III

COURSE OBJECTIVE: This course will enable the students to visualize complex numbers as points and stereographic projection complex plane on the Riemann sphere



unit	Objective	Learning outcomes
I	Cauchy-Riemann equation – Complex exponents , Exponential function and trigonometric ,hyperbolic ,logarithmic function	Understand the significance of differentiability and analyticity of complex function leading to Cauchy-Riemann equations
II	Definite integrals of functions , Contour integrals , Cauchy Integral formula ,Liouville's theorem , Fundamental theorem of Algebra	Learn the role of Cauchy integral formula in evaluation of contour integrals .Apply Liouville's theorem in Fundamental theorem of Algebra
III	Convergence of series , Taylor's series , Laurent's series , Singular points ,Zeroes of Analytic function , Cauchy Gourshat theorem	Learn Taylor and Laurent series expansion of analytic function , classify the nature of singularity ,poles and residues and application of Cauchy –Residue theorem
IV	Milne Thomson Circle. Theorem Euler's equation. Bernoulli's equation	Elliptic coordinate. Deal with two dimensional fluid motion using the complex Motion of an Elliptic. Potential and also to understand the concept of sources sinks Cylinder. Doublets and the image systems of these with regard to alone a circle.

SUBJECT NAME FLUID MECHANICS

SEMESTER –II PAPER-IV

**COURSE OBJECTIVE :** Understand the reduction of force system in three dimensions to a resultant force acting at a base point and a reluctant couple, which is independent of the choice of base of reduction.

unit	objective	Learning outcomes
I	The equation of continuity.	Learn about a null point and a null line (vector and Cartesian form) and a null plane with respect to a system of force acting on a Rigid body together with the idea of central axis.
II	Motion in two dimension, Velocity potential stream function.	Know the inertia constants for a rigid body and the equation of momental Ellipsoid together with the idea of principle and principle moments of inertia and to drive Euler's equation of Motion of a rigid body moving about a point which is kept
III	Milne Thompson circle Theorem. Euler's equation Bernoulli's equation.	Study the kinetics and kinetics of fluid motion to understand The equation of continuity in Cartesian cylinder polar and Bernoulli's equation. spherical polar coordinates which are used to drive Euler's and Bernoulli's equation
IV	Elliptic coordinate Motion of an Elliptic Cylinder.	Deal with two dimensional fluid motion using the complex Potential and also to understand the concept of sources sinks Doublets and the image systems of these with regard to along a circle.

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SUBJECT NAME:

VISCOUS FLOW

SEMESTER –III

PAPER-I

COURSE OBJECTIVE: To learn fundamentals of flow from an advanced point of view with emphasis on the mechanical treatment of viscosity effects in laminar flows of a Newtonian fluids'

unit	Topics	Learning outcomes
I	Kelvin's proof- Helmholtz Vorticity theorem- Rectilinear vortices	Understand the properties of vortices and different types of vortices
II	Viscosity, stress components of a in a real fluid - Relation between Cartesian components of stress – Navier Stoke's equation	Learn different components of fluid
III	Plane poiseuille flow –Couette flow- Hagen poiseuille flow – Steady motion in tubes of different uniform cross section	Understand different types of flow under different conditions
IV	Dimensional Analysis – Buckingham - $\Pi$ theorem – Boundary layer theory – Von karman integral relation	Learn the integral equation and dimensional analysis and their practical application

SUBJECT NAME:

FINITE DIFFERENCE METHODS

SEMESTER : III

PAPER:II

COURSE OBJECTIVE : Calculate the limit and Examine the continuity of a function of a point

unit	topics	Learning outcomes
I	Domain of Dependence of Hyperbolic Equation.	Understand the Genesis off Hyperbolic Equation.
II	Difference methods for Parabolic Partial differential Equation.	To Convert to ODE into Algebraic form obtain. Algebraic equation.
III	Difference Methods for hyperbolic. Partial differential equation.	The resulting Algebraic Equation or finite difference Equation
IV	Numerical Methods for Elliptic Partial differential equation	Understand the propositional logic and basic theorem like compactness Theorem and numerical methods For Elliptic Partial differential Equation

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**SUBJECT NAME :** COMPRESSIBLE FLOWS

**SEMESTER -III** PAPER-III

**COURSE OBJECTIVE :** \* Ability to go abstract from concrete : from concrete notion of solution space to vector spaces.

UNIT	UNIT – OBJECTIVE	LEARNING OUTCOMES.
1.	Introduction to equation of state perfect gas, first law of thermodynamics.	Explaining first law of thermodynamic and physical properties of gases, dissociation and ionization.
2.	Fundamental equation of aerodynamics of compressible in vcid and non-heating conducting fluid.	Describing equation of state, equation of continuity, equation of motion, equation of energy.
3.	Maxwell’s thermodynamics relation, kelvin theorem, vertex motion.	Relations of maxwell’s thermodynamics, helmholtz’s theorem.
4.	One dimensional flow of an inviscid compressible flow, sound wave with finite amplitude, formation of a shock.	Velocity of a sound and mach number, Subsonic, sonic and supersonic, steady flow in a nozzle.

**SUBJECT NAME :** OPERATION RESEARCH

**SEMESTER :III** PAPER:IV

**COURSE OBJECTIVE :** concepts of group action and theorems about group action

UNIT	UNIT – OBJECTIVE	LEARNING OUTCOMES.
I	Formulation of LPP graphical. solution of LPP simplex methods of the dual and primal	Facility in working with the field
II	Mathematics formation of. Problems Tabular representation	Understand different types transportation Flow understand different conditions
III	concepts of dynamics programming.	Apply implicit and concept Dynamics PR

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	Bellman's principle of optimality.	
IV	Historical development of CPM/ PERT techniques project evaluation. review techniques.	understand the successive Approximations using CPM/ and PERT

SUBJECT NAME:

ADVANCED COMPLEX ANALYSIS

SEMESTER -IV

PAPER-I

COURSE OBJECTIVE: Learn about types of functions and conformal mapping.

unit	Topics	Learning outcomes
I	Entire functions: Jensen's formula- functions of finite order – infinite product- Hadamard's factorization theorem	Use the formulas and theorems to solve the complex analysis problems.
II	The Gamma and Zeta functions: - Analytic continuation, Further properties of gamma – functional equation and analytic continuation.	Understand the types of function and analytic continuation.
III	The zeta function and – zeros of zeta function – estimates and interchanging double sums.	Solve the zeta function , understand their usage.
IV	Conformal mapping the disc and upper half plane- Examples- Dirichlet problem in a strip- Schwartz lemma Automorphism of upper half plane	Understand conformal mapping and their properties and application of dirichlet problem.

SUBJECT NAME:

FINITE ELEMENT METHODS

SEMESTER -IV

PAPER-II

COURSE OBJECTIVE: Understand the general steps of finite element methods

unit	Topics	Learning outcomes
I	Weighted residual methods- Least Square method- Partition method-Galerkin method-Collocation method-Moment method-Ritz method	Understand the basic finite element methods
II	Finite element – Line segment elements-Triangular elements-Rectangular elements with examples	Learn the different polynomial involved in each segment

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III	F.E.M –Ritz F.E.M-Least square f.e.m –Galerkin f.e.m ,B.V.P	Be able to drive equations in finite element method
IV	Eigen value problems Error analysis, Approximation errors –Convergence and accuracy of solution with examples	Understand the different factors that effect the convergence of solution

**SUBJECT NAME :** MAGNETO HYDRO DYNAMICS

**SEMESTER :** IV

**PAPER :** III

**COURSE OBJECTIVE :** This course which enables the students to visualise complex numbers as points and stereographic projection complex plane on the Riemann sphere

UNIT	UNIT OBJECTIVE	LEARNING OUTCOMES
I	A brief reminder of the laws. electro dynamics governing. Equations of electro hydro dynamics	Understand the properties vortices Of And different types of dynamics
II	Transport equation for imposed. field (B) an important Kinetic equation.	Learn different components of fields Magnetic
III	Advection and diffusion of. Kevin's theorem, Helmholtz. Law and helicity.	Understand different types of laws and Vorticity Understand different conditions
IV	Kinematics. Of MHD analogy to Vorticity, diffusion of a magnetic field. Advection in ideal conductors.	Be able to derive equation in magneto Hydro dynamics.

**SUBJECT NAME :** FUNCTIONAL ANALYSIS.

**SEMESTER- IV**

**PAPER- IV**

**COURSE OBJECTIVE:** \*Concept of normal linear space and inner product spaces.

\*Analyzing the structure of the spectrum of the spectrum of certain operations.

UNIT	UNIT - OBJECTIVE	LEARNING OUTCOMES.
I	Normed spaces, banach, bounded and continuous linear operators.	Comparing the difference between banach and Hilbert spaces.
II	Linear functional, properties of inner product space, orthogonal compliment and direct sums.	Working with a complete orthogonal set, schauder basis in a Hilbert space.
III	Hilbert space Hilbert – adjoint operation self-adjoint, unitary and normal operators.	Concept of compact, self-adjoint and normal operators.

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IV	Hahn-banach theorem, open mapping theorem, closed linear operators, closed graph theorem.	Investigating the best approximation of a given vector by vector in a given subspace.
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# ANWARUL ULOOM COLLEGE (AUTONOMOUS)

(Accredited by NAAC with 'A' Grade & An ISO 9001:2015 Certified Institution)

(Affiliated to Osmania University, Hyderabad)

Ref. No. \_\_\_\_\_

Date: \_\_\_\_\_

## B. Sc Microbiology

Academic year 2017-2018

Course: B.Sc. Microbiology (Duration: 3 Years)

### Programme Mission and Objective:

Microbiology is study of the world of organisms that are too small to be seen with the naked eye. Some of these microorganisms are infectious agents to humans, animals, or plants. Many of these microorganisms, however, carry out important functions in their niches that are essential for all life on earth. Microbiologists study the interaction of microorganisms with people and how they affect their lives, as well as the roles these organisms play in the environment. Microbiologists work in hospitals, universities, medical schools, government laboratories, and almost every industry, specializing in a variety of areas, from agriculture to the space industry. In fact, study of microorganisms has become of global importance.

BSc in Microbiology is a unique, interesting and leading course designed to encourage aspiring students with a cutting-edge training to young minds power of thinking, provide them apt practical training and making them industry ready for a rewarding professional career.

This programme will enable the young minds to adopt to both theoretical and practical exposure, parallel to any other conventional Universities. Moreover, innovative learner centric innovative teaching practices will be adopted to ensure parity in terms of academic excellence.

### Goals and objectives

- To provide cutting edge education in Microbiology to aspiring learners.
- The crux of the course is to ensure that the students at the end of the programme are able to acquire higher education further leading to prospective career.

### Programme Outcome

The programme aims to cater learners to acquire and demonstrate competency in Microbiology skills, making them knowledgeable and competent to make a prospective career in industry as well as in research in the area of Microbiology.

  
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## DEPARTMENT OF MICROBIOLOGY

### PROGRAM SPECIFIC OUTCOMES (PSO) MICROBIOLOGY

At the time of graduation, the students will be able to PSO1: Understand fundamental principles involved in Microbiology PSO2: Acquire detail knowledge of pure culture techniques

PSO3: Understand aspects of microbial nutrition and photosynthesis.

PSO4: Acquire detail knowledge of Mendelian laws, structure, replication of DNA and mutations.

PSO5: Understand the immune system and antigen antibody interactions. Diagnostic and medical microbiology.

PSO6: Acquire detail knowledge of Microbes in agriculture, plant diseases and bio control, food microbiology and production of food by microorganisms. Industrial production and roles of microbes in environmental pollution.

### COURSE OUTCOMES:

#### Semester - I

#### General Microbiology

At the end of the course, the students will be able to-

CO1: Describe meaning, definition and scope of Microbiology

CO2: Outline the History of Microbiology

CO3: Describes the microbiological techniques for sterilization and disinfection

CO4: Explain the principle of microscopy

CO5: Explain the principle and types of stains


CO6: Explain classification of living organisms

CO7: Understand the differentiation of prokaryotes and eukaryotes

CO8: Discuss the use of different techniques for isolation of pure cultures

CO9: Describes various methods of preservation of pure culture

CO10: Explain general characteristic of prokaryotes, virus and eukaryotic microorganisms

  
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## Semester –II

### General Microbiology- II

At the end of the course, the students will be able to

CO1: basic concept and principle of sterilization and disinfection techniques

CO2: Isolation of pure culture techniques and preservations.

CO3: classification and general characteristics of carbohydrates, amino acids, protein, lipids & nucleic acids.

CO4: Understands the biochemical techniques.

## SEMESTER III

### Microbial physiology and enzymology.

At the end of the course, the students will be able to

CO1: Discuss mechanism of uptake of nutrients by cell and nutritional groups of microorganisms.

CO2: Describe the use of growth medium and factors influencing the microbial growth.

CO3: Measuring microbial growth.

CO4: Microbial metabolism and fermentations.

CO5: Properties and classification of enzymes and factors effecting catalytic reactions of enzymes.

## SEMESTER IV


### Molecular biology and microbial genetics.

At the end of the course, the students will be able to

CO1: Understand the fundamental of genetics

CO2: DNA and RNA as genetic material its structure and replication.

CO3: Explain definition, types of mutation and mutagens

  
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CO4: To learn the concept of DNA damage and Repair mechanism, and brief account on gene transfer among bacteria.

CO5: Discuss the concept of gene, gene hypothesis, genetic code and regulation of gene expression in bacteria.

CO6: Describe the Principles of genetic engineering, genomic and cDNA libraries

CO7: Discuss the application of genetic engineering in industry, agriculture and medicine.

## SEMESTER V

### Immunology and medical microbiology

At the end of the course, the students will be able to-

CO1: Understand the development of immunology and its scope

CO2: Explain concept of Immunity and its types, Antigen, Antibody, Immune system

CO3: Describe the concept of immunological tolerance and surveillance

CO4: Describe primary and secondary organs and cells of immune system with their identification and functions, Describe Lymphocytes (T and B cell)

CO5: Describe structure, types of antigens and antibodies and their diversity

CO6: Describe the concept of complement system-properties, activation, regulation, biological effects, deficiencies

CO7: Discuss Diagnostic application of immunology: Practical aspects of

Antigen-Antibody Interaction and types: Precipitation and Agglutination, Perform Blood grouping

CO8: Concept of labelled antibody techniques -ELISA, RIA and immunofluorescence

CO9: Understand concept of hypersensitivity and its types, Autoimmunity, polyclonal and monoclonal antibodies

CO10: Outline the history of medical microbiology

CO11: Identify the normal microflora of human body

CO12: Define infection, non-specific defence, mechanical indigenous flora

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Date: \_\_\_\_\_

CO13: Understand the concept of Antibacterial substances like lysozyme, complement, antivirals, phagocytosis

CO14: Describe various methods involved in collection, transport and processing of clinical samples

CO15: Explains the general methods of laboratory diagnosis

CO16: Describe the test for antimicrobial susceptibility

CO17: Discuss the antiviral agents

CO18: Describe the general characteristics of therapeutic drugs and mechanism of drug resistance

CO19: Describe the structure, mode of action clinical uses of penicillin and sulpha drug

CO20: Define vaccine and describe the various types of vaccines

CO21: Describe the causal organism, pathogenesis, diagnosis, prevention and control of airborne diseases, food and water borne diseases, insect borne and viral diseases.

## SEMESTER VI

### Applied Microbiology

At the end of the course, the students will be able to

CO1: Understand the role of microbes in agriculture with reference to physical and chemical characteristics of soil

CO2: Importance of plant growth promoting microorganisms

CO3: Application of microorganisms as biofertilizers

CO4: To learn the concept of plant diseases and biocontrol using biopesticides

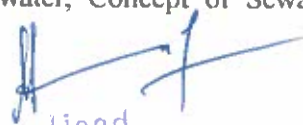
CO5: Discuss Food and Microorganisms, source of food contamination and food preservation

CO6: Describe Food born disease and Intoxication and Pathogen associated with food poisoning

CO7: Discuss mechanism of preparation of fermented foods and microorganisms as food SCP, edible mushrooms and concept of probiotics with the help of microorganisms

CO8: Describe microorganisms of soil, water, air and various nutrient cycles (Carbon, nitrogen, sulphur)

CO9: Describe processes involved in purification of sewage and portable water, Concept of Sewage treatment

  
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Ref. No.

Date: \_\_\_\_\_

CO10: Describe coliform- test- technique used to determine water potability

CO11: Describe solid waste disposal methods

CO12: Outline of biodegradation of environmental pollutants


CO13: Describes the characteristic features of industrially important microorganisms (yeast, molds, bacteria, actinomycete)

CO14: Outline of strain improvement

CO15: Describe various types of fermentation and the roles of media in fermentation

CO16: Describe the history, design, size, and construction of fermenters (bioreactors)

CO17: Describe the commercial production of industrial alcohol, beer, enzyme, antibiotic, amino acid, organic acid, vitamin and biofuel

  
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# ANWARUL ULOOM COLLEGE (AUTONOMOUS)

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(Affiliated to Osmania University, Hyderabad)

**DEPARTMENT: NUTRITION AND DIETETICS**  
**PROGRAMME: B.SC. NUTRITION AND DIETETICS**  
**ACADEMIC YEAR-(2017-2018)**

### **PROGRAMME OBJECTIVE (GENERAL)**

- 1 Students are able to grab a chance for entrance in various competitive exams at state & national levels
- 2 They can hold on opportunity for post graduate level related to their specialization at graduation level
- 3 They can even opt for diplomas, vocational courses related to medical field
- 4 Perform food management functions in business, health-care, community and institutional areas.
- 5 They can even opt for internship at hospitals level, enter as nutritionist at factories after internship

### **(PROGRAMME OUTCOMES) (GENERAL)**

- PO- 1 The students can get accepted in post graduation programs and can enroll for various entrance exams
- PO - 2 after completion of graduation program students will gain a chance to work in hospitals at interns
- PO- 3 they attain the skills to work in various field like food factories, health care at community and institutional levels, work in food service industry
- PO- 4 the students will gain insight about the role of nutrition in overcoming various health diseases and disorders, their treatment, prevention and cure.
- PO -5 The course will help students grasp different aspects and fulfill requirement needed in aiding future career choices

### **(PROGRAMME SPECIFIC OUTCOMES)**

E.g. B. Com, PSO: The student can understand the basic concepts of various subjects viz. BOM, FA, B, Economics, etc. and its application in real life situations.

PSO-1 SEM I: Nutritional biochemistry: To understand the sources of macro and micro nutrients.

To become proficient for specialization in nutrition

To develop competence to carry out investigations in nutrition

#### **PRACTICAL:**

The students learn about the various qualitative and quantitative analysis techniques for nutrients like carbohydrates, fat, ascorbic acid, calcium, moisture and ash.

PSO -2 SEM II: Nutrition through lifecycle: To provide an overview of the critical role of diet as a determinant of health, nutritional status of the Indian Population, nutrition needs, food distribution system and intervention programs.

To understand the changes in human body composition during different stages of life.

To study the influence of nutrition on man during the different stages of life cycle.

*N. Nigam*  
**HEAD**

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# ANWARUL ULOOM COLLEGE (AUTONOMOUS)

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(Affiliated to Osmania University, Hyderabad)

To be aware of and update and knowledge in the field of nutrition as applied during the lifecycle.

To understand various methods to assess the nutritional status of the community.

**PRACTICAL:**

The student learn about the importance of the standardisation of weights measures they learn about the planning and calculations and preparation of the various diets which help them in understanding the need of proper supplementations of various nutrients required in various health conditions and life stages.

**PSO -3 SEM III: Introduction to food technology:** To impart a systematic knowledge of basic and applied aspects of food processing and technology.

**PRACTICAL:** The students will understand the various methods of cooking they learn about different techniques of estimation of gluten content gelatinization of starches. Edin values of oils, malting and popping value of the millets and different stages of sugar cookery.

**PSO -4 SEM IV: Food technology:** To impart a systematic knowledge of basic and applied aspects of food processing and technology.

Knowledge of potential use of various by products of food industry.

**PRACTICAL:**

They learn different preservation techniques for preserving fruits and vegetables.

**PSO -5SEM V(A): Therapeutic Nutrition:** To understand the importance of diet in health and disease condition.

To modify the diet as per the disease condition

To enlighten on the dietary modification

**PRACTICAL:**

The students are unable to understand the planning preparation and calculation of the various therapeutic diets and we need to modify the diets according to the needs of the patient.

**PSO -5 SEM V(B): Public health/ community nutrition and health education:** To understand the Nutritional problems of community.

To provide students with an understanding of the scope of the public health issue with regard to communicable disease and non-communicable diseases in India.

**PRACTICAL:**

The students will understand the various nutrition assessment techniques two analyse the present health status of the community.

**PSO -6 SEM VI(A): Diet Therapy:** To understand the importance of diet in health and disease condition.

To modify the diet as per the disease condition

To enlighten on the dietary modification

**PSO -6 SEM VI(B): Food Safety and Quality control/ Food microbiology:** To familiarize students with the basics of food microbiology.

To enable students to gain knowledge on preservation techniques and Food contamination.

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# ANWARUL ULOOM COLLEGE (AUTONOMOUS)

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## PRACTICAL:

These students examine the various micro organisms under the microscope. And they learn the staining techniques and the preparation of this common culture media, they identify the different trends that are present in various food commodities.

## COURSE OBJECTIVE

(Subjects Objectives subject wise): Eg. Financial Accounting/ Cell Biology/ Physical Chemistry

1 Nutritional biochemistry: To understand the sources of macro and micro nutrients.  
To become proficient for specialization in nutrition  
To develop competence to carry out investigations in nutrition

## PRACTICAL:

The students learn about the various qualitative and quantitative analysis techniques for nutrients like carbohydrates, fat, ascorbic acid, calcium, moisture and ash.

2 Nutrition through lifecycle: To provide an overview of the critical role of diet as a determinant of health, nutritional status of the Indian Population, nutrition needs, food distribution system and intervention programs.

To understand the changes in human body composition during different stages of life.  
To study the influence of nutrition on man during the different stages of life cycle.  
To be aware of and update and knowledge in the field of nutrition as applied during the lifecycle.

To understand various methods to assess the nutritional status of the community

## Practical's:

These students learn about the standardisation of weights and measures, they become proficient in planning diets for various life stages like adulthood pregnancy, lactations, infancy, preschoolers, schoolgoing child, adolescents and geriatrics

3 Introduction to food technology: To impart a systematic knowledge of basic and applied aspects of food processing and technology.

## PRACTICAL:

The students learn about the various methods of cooking, they learn the technique for estimation of gluten content in wheat, they learn about the gelatinization of different starches, they gain an understanding about the different stages of sugar cookery

4 Food technology: To impart a systematic knowledge of basic and applied aspects of food processing and technology.

Knowledge of potential use of various by products of food industry.

PRACTICAL: They learn about the different cooking methods for cereals pulses millets legumes and different stages of sugar cookery.

5 Therapeutic Nutrition: To understand the importance of diet in health and disease condition.

To modify the diet as per the disease condition

To enlighten on the dietary modification.

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# ANWARUL ULOOM COLLEGE (AUTONOMOUS)

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## PRACTICAL:

The students are unable to understand the planning preparation and calculation of the various therapeutic diets and we need to modify the diets according to the needs of the patient.

6 Public health/ community nutrition and health education: To understand the Nutritional problems of community.

To provide students with an understanding of the scope of the public health issue with regard to communicable disease and non-communicable diseases in India.

## PRACTICAL:

These students will understand the various nutrition assessment techniques to analyse the present health status of the community.

7 Diet Therapy: To understand the importance of diet in health and disease condition.

To modify the diet as per the disease condition

To enlighten on the dietary modification

## PRACTICAL:

It helps in planning and preparation of the diets for various conditions and the need for the modification in the diet according to the needs of the patient and the condition that he is suffering with.

8 Food Safety and Quality control/ Food microbiology: To familiarize students with the basics of food microbiology.

To enable students to gain knowledge on preservation techniques and Food contamination.

## PRACTICAL:

These students examine the various micro organisms under the microscope. And they learn the staining techniques and the preparation of this common culture media. they identify the different adult trends that are present in various food commodities.

## COURSE OUTCOMES

(Subject Outcomes subject wise)

Each unit one outcome

CO - I SEM I: Nutritional Biochemistry:

- The students will understand the definition, composition, Classification, metabolism involved, the dietary sources and the recommended dietary allowances, the digestion, absorption, the deficiency and the abundance of the carbohydrates and the lipids present in the body of the human.
- The students gets familiarized with the concept of the amino acid composition, sources and nutritional significance and in detail about the protein.
- The students will understand the different vitamins their types, sources, functions, RDA, and their deficiencies.
- The students gets familiarized with the different enzymes and hormones present in the human body and their role in the body and also gain insight about the water and electrolytes balance in the body.

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- PRACTICAL:
- The students learn the various qualitative and quantitative estimation techniques for analysis of various nutrients present in the food commodities.

## CO-2 SEM-II: Nutrition through lifecycle:

- The students learn about various food groups, food pyramid the principles involved in planning a diet, and a balanced diet and various methods of cooking involved and changes occurring during cooking.
- The students gain an insight of what are the nutritional requirements for adult man and woman, a pregnant woman, a lactating mother and importance of nutritional support during infancy.
- The students gain an insight of what are the nutritional requirements for a preschooler, school going child, for adolescents and also for Geriatrics and what modifications has to be done in each age group as per their needs.
- The students learn about various methods taken up by both national and international organizations in combating malnutrition.
- PRACTICAL:
- The students will learn in detail the importance of standardisation of weights and measures they learn how to plan and calculate and prepare a diet for various stages of life.

## CO-3 SEM-III: Introduction to Food technology:

- This course is enabling the students to gain an insight about the importance, principles and objectives of food technology.
- They will understand the composition, nutritive value and processing techniques of cereals, millets and sugars.
- They will understand the composition, nutritive value and processing techniques of pulses legumes and nuts and oil seeds.
- They will understand the composition, nutritive value and processing techniques of fats and oils and about spices and condiments and what is the importance of beverages.
- PRACTICAL:
- The students will learn about the various methods of cooking they learn how to estimate the amount of gluten that is present in the wheat sample they learn about the different gelatinization rates of various touches and different stages of sugar cookery they learn about the various techniques of enhancing the nutritive value of millets, pulses and legumes.

## CO-4 SEM- IV: Food technology

- They will understand the composition, nutritive value and processing techniques of vegetables and fruits.
- They will understand the composition, nutritive value and processing techniques of milk and milk products.
- They will understand the composition, nutritive value and processing techniques of poultry, meat and fish.
- They will understand the emerging new technologies in the food industry like production

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of designer foods. Organic foods, GMF and about extrusion technology.

- PRACTICAL:
- The students will learn about the various preservation techniques to preserve fruits and vegetables they learn how to tenderize meat they learn the determination technique of BH in milk and milk products, determination of butter content in milk and determination of quality of egg.

#### CO-5 SEM V(A): Therapeutic Nutrition:

- The students understood the role of dietitian in Hospital and the therapeutic dietary modifications of food and special feeding methods.
- They learnt about the dietary modifications in gastrointestinal, liver and gall bladder diseases.
- They understood the role of nutrition in malnutrition, febrile conditions and genetic disorders.
- They learnt about the role of nutrition in the cardiovascular diseases, diabetes and renal diseases.
- PRACTICAL:
- The students will understand how to prepare calculate and plan a diet for various therapeutic conditions and how to modify a normal diet according to the needs of the patient.

#### CO-6 SEM V(B): Public health/ community nutrition and health education:

- the students learn about communication its definition types processes and barriers and health education what are the aims of this types of approaches and principles of health education, they learn about the different practices about health education, school health services and schedule for immunization of school children and school Health Administration.
- They learned about anthropometry, diet service and the types and different clinical assessment and biochemical assessment methods to understand the present health status of the community.
- The Students gained an insight about the Prevalence of malnutrition in India what are the factors contributing to malnutrition, protein energy nutrition Vitamin A deficiency common nutritional anaemia, Iodine deficiency disorders and endemic fluorosis.
- The students learnt in detail about the different, types of communicable diseases their causes, symptoms, treatment and control measures.
- PRACTICAL:
- The students will learn the various assessment techniques to identify the nutritional status of the community by applying methods like anthropometry, diet survey, biochemical method.

#### CO-6 SEM VI(A): Diet therapy:

- The students understood the role of dietitian in Hospital and the therapeutic dietary modifications of food and special feeding methods.
- They learnt about the dietary modifications in gastrointestinal, liver and gall bladder

*Alajia*  
HEAD

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diseases.

- They understood the role of nutrition in malnutrition, febrile conditions and genetic disorders.
- They learnt about the role of nutrition in the cardiovascular diseases, diabetes and renal diseases.
- PRACTICAL:
- Students understood the planning, calculation and the preparation of the diets for various therapeutic conditions and how to fulfil the needs of the patient by modifying the diet according to the needs and requirements.

## CO-6 SEM VI(B): Food Safety and Quality control/ Food microbiology:

- They learnt in detail about the Scope of microbiology importance of microbiology and the types of microorganisms.
- The methods of food preservation and the principles of food preservation I discussed in detail.
- They learn about the classification of food with ease of spoilage and causes of spoilage in different types of foods like spoilage in cereals and cereal products, milk and milk products, meat and meat products, fish and other seafood, poultry, eggs, spoilage of fresh fruits and vegetables, spoilage of canned products and sugar products.
- They learned about the nutritional leavening provisions in existing food laws and recent developments in food labelling from India and food laws and regulations and standards followed in India.
- PRACTICAL:
- The students learn how to use microscope an visualize the microorganisms underneath the microscope and prepare the simple staining and gran staining, slide and learnt the various culture media preparation techniques, and understood the procedure to asimple test to identify the various adult trends that might be present in the different food commodities.

*Raja*  
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# ANWARUL ULOOM COLLEGE (AUTONOMOUS)

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**DEPARTMENT: NUTRITION AND DIETETICS**

**PROGRAMME: M.SC. NUTRITION AND DIETETICS**

**ACADEMIC YEAR-(2017-2018)**

## **PROGRAMME OBJECTIVE (GENERAL)**

- 1 They can even opt for diplomas, vocational courses related to medical field.
- 2 Perform food management functions in business, healthcare, in community and institutional areas
- 3 They can opt for further academic education and can become researchers, enroll in doctorate programs
- 4 They can opt for working as a dietitian at the hospital or as a nutritionist at the community level.
- 5 They can explore the field of healthcare by becoming registered dietitian, enter into the field of teaching, scientific research and other professions.

## **(PROGRAMME OUTCOMES)**

### **(GENERAL)**

- PO- 1 At the end of the course these students will be qualified as the post graduate students in nutrition and dietetics.
- PO – 2 The course will enable the students to get jobs at reputed organisations with a major scope in different aspects of the profession of healthcare.
- PO- 3 These students can offer the further studies by enrolling themselves into the doctorate programmes.
- PO- 4 The students can start working in the hospitals as dietitian I can also work as a nutritionist at the community level they can associate with the various organisations health and help in the improvement of the health status of the community.
- PO -5 They can start their own business, enter into the field of food service management, work into the food factories and then also enter into the various government programmes and jobs for improving the health status of the nation.

## **(PROGRAMME SPECIFIC OUTCOMES)**

Eg. B. Com. PSO: The student can understand the basic concepts of various subjects viz. BOM, FA, B. Economics, etc. and its application in real life situations.

PSO-1 SEM I: PAPER-I: Human nutrition:

It has the students to understand the role of adequate nutrition in different stages of life cycle. It enables the students to know the nutritional requirements and the meeting management of the athletes.

PRACTICAL:

To familiarise the students with the raw and cooked quantities of the food and to the plan diet for various age groups.

PAPER-II: Nutritional biochemistry – I:

This will enable the students to understand the role of nutrients in the body.

It also helps these students to understand the classification, functions and the metabolism of nutrients like carbohydrates, amino acids, proteins and nucleic acids

PRACTICAL:

This will help the students to get acquainted with the principles, techniques and applications of

*[Signature]*  
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Anwarul-Uloom College  
New Malleshpally, Hyderabad-500011, T.S



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various methods of food analysis.

**PAPER-III: Human Physiology:**

this will enable the students to understand the functions of various systems in the body.

It helps in getting the students acquainted with the abnormalities of the endocrine system

**PRACTICAL:**

The course will help the students to get acquainted with the principles common techniques and application of different methods of analysis for various components in blood. full

**PAPER-IV: Principles of dietetics:**

This will help in imparting in depth knowledge regarding the prevalence, aetiology, diagnosis common diet and lifestyle management in different diseases.

It helps the students to gain knowledge on the methods of assessment of nutritional status among the individuals and the interaction of their drugs and nutrients

**PRACTICAL:**

This will help in familiarising the students with newer concepts in the dietary management of various diseases and disorders

**PSO -2 SEM II: PAPER-I: principles of food:**

It provides understanding of composition of various foodstuffs to the students.

It helps in familiarising these students with the changes occurring in the foodstuff as a result of the processing an cooking.

**PRACTICAL:**

The students gets familiarised with the changes that are occurring in the various foodstuffs as the result of processing an cooking

**PAPER-II: nutritional biochemistry – I I:**

it enables the students to understand the role of the different nutrients in the body.

It helps in understanding the classification, functions and the metabolism of dilip it's, vitamins and the minerals.

**PRACTICAL:**

It helps the students to get familiarised with the changes occurring in their various foodstuffs as a result of the processing an cooking.

**PAPER-III:research methodology:**

It helps the students to understand the importance of the research design.

do impart in depth knowledge on collection compilation an analysis of the data.

**PRACTICAL:**

This will help these students for understanding newer concepts in their research.

It also enables the students to analyse the data for the project work with the satistical techniques.

The application of the status tickle methods related to the community nutrition and the sensory evaluation techniques.

**PAPER-IV: died in disease:**

this will help in imparting in depth knowledge regarding prevalence, aetiology, diagnosis, diet and lifestyle management in acute and chronic diseases.

It helps students to gain knowledge to recommend an provide appropriate nutritional care for prevention and or treatment of various diseases.

**PRACTICAL:**

This will help the students to get familiarised with the newer concepts in the dietary management of various diseases and disorders.

**PSO -3 SEM III: PAPER-I: Community nutrition:**

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it helps the students to understand the causes slash detriments and consequences of nutritional problems in the community.

It helps to familiarise the students with various approaches to nutrition and health interventions, programmes and policies.

**PRACTICAL:**

It helps to give an insight into the various locust ingredients available in the market and to develop a low cost nutritious recipes for the vulnerable segments of the community. It helps the students to develop teaching aids for imparting the nutrition and health education

**PAPER-II: food microbiology**

it helps to familiarise the students with the basics of food microbiology.

it enables the students to gain knowledge on preservation techniques and food contamination

**PRACTICAL:**

It helps the students to familiarise with the sterilisation techniques, inoculation techniques.

It helps in developing a skill in preparation of the various media preparations and solutions

**PAPER-III: food service management:**

it helps the students to gain knowledge on requirement an management of various food service establishments.

it helps the students to know the different types of the food cost involved and the methods to control them.

**PRACTICAL:**

It helps the students to gain knowledge on quantity food production.

it helps the students to learn about the various different menus and we need to standardise the recipe for the recipe conversion and to develop a HA CCP plan for Indian recipes.

**PAPER- IV: Food hygiene and sanitation**

it helps the students to make an understanding about the environmental sanitation and the link between environmental sanitation and health.

it is to make students understand the importance of the personal hygiene and the environmental sanitation

it helps the students to understand an assist and practise controlling factors in the environment that can potentially affect public health.

**PRACTICAL:**

it helps to understand the principle of food hygiene and sanitation necessary for the food handlers add both household and the food service establishment's levels.

**PSO -4 SEM IV: PAPER-I: Advanced nutrition:**

It helps to familiarise the students with the recent advances in the nutrition field

It helps to impart the knowledge on the bioavailability of the various nutrients.

**PAPER-II: Paediatric nutrition:**

It helps to understand the growth common development an nutritional requirements of the children.

it helps the students to gain an insight knowledge an inborn errors of metabolism man the paediatric critical care


**PAPER-III: Nutraceuticals and functional foods:**

It helps to familiarise students with the recent advances in the nutraceuticals.

It helps to impart knowledge on the health benefits of the nutraceuticals and functional foods

**PAPER-IV: Diet and psychology counselling skills:**

It helps to familiarise these students with diet counselling skills an to acquaint them with basic

  
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Hyderabad-500017



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principles of psychology.

**PRACTICAL:**

**PAPER-I: Hospital internship in nutrition and dietetics :**

Internship is a phase of training where a graduate is expected to conduct actual practices of diet management and healthcare and acquire skills under supervision of a practising dietitian so that he or she may become capable of functioning independently.

**PAPER-II: Internship- case studies presentation:**

the students are expected to submit a bound copy of the word processed, printed internship report to the programming in charge for necessary action after the internship these students shall give a presentation on their internship.

**PAPER-III: Project work – collection of data:**

it is to continue the project work initiated and to submit dissertation at the end of the semester the students will be guided and supervised by the member of the teaching faculty.

**PAPER-IV: Project work- report writing and presentation of the project seminar:**

The presentation of the work in front of the faculty of the department has to be done and practical performance in the laboratory, interpretation of the result obtained, calmer regularity and any other criteria relevant to these studies are concerned.

## COURSE OBJECTIVE

(Subjects Objectives subject wise)

**ISEM I: PAPER-I: Human nutrition:**

It has the students to understand the role of adequate nutrition in different stages of life cycle. It enables the students to know the nutritional requirements and the meeting management of the athletes.

**PRACTICAL:**

To familiarise the students with the raw and cooked quantities of the food and to plan diet for various age groups.

**PAPER-II: Nutritional biochemistry – I:**

This will enable the students to understand the role of nutrients in the body. It also helps these students to understand the classification, functions and the metabolism of nutrients like carbohydrates, amino acids, proteins and nucleic acids

**PRACTICAL:**

This will help the students to get acquainted with the principles, techniques and applications of various methods of food analysis.

**PAPER-III: Human Physiology:**

this will enable the students to understand the functions of various systems in the body. It helps in getting the students acquainted with the abnormalities of the endocrine system

**PRACTICAL:**

The course will help the students to get acquainted with the principles common techniques and application of different methods of analysis for various components in blood. full

**PAPER-IV: Principles of dietetics:**

This will help in imparting in depth knowledge regarding the prevalence, aetiology, diagnosis common diet and lifestyle management in different diseases.

It helps the students to gain knowledge on the methods of assessment of nutritional status among the individuals and the interaction of their drugs and nutrients

**PRACTICAL:**

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New Anwarul Uloom College  
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This will help in familiarising the students with newer concepts in the dietary management of various diseases and disorders

## 2SEM II PAPER-I: principles of food:

It provides understanding of composition of various foodstuffs to the students.

It helps in familiarising these students with the changes occurring in the foodstuff as a result of the processing and cooking.

### PRACTICAL:

The students get familiarised with the changes that are occurring in the various foodstuffs as the result of processing and cooking

## PAPER-II: nutritional biochemistry – I I:

It enables the students to understand the role of the different nutrients in the body.

It helps in understanding the classification, functions and the metabolism of lipids, vitamins and the minerals.

### PRACTICAL:

It helps the students to get familiarised with the changes occurring in their various foodstuffs as a result of the processing and cooking.

## PAPER-III: research methodology:

It helps the students to understand the importance of the research design.

It imparts in depth knowledge on collection, compilation and analysis of the data.

### PRACTICAL:

This will help these students for understanding newer concepts in their research.

It also enables the students to analyse the data for the project work with the statistical techniques.

The application of the statistical methods related to the community nutrition and the sensory evaluation techniques.

## PAPER-IV: diet in disease:

This will help in imparting in depth knowledge regarding prevalence, aetiology, diagnosis, diet and lifestyle management in acute and chronic diseases.

It helps students to gain knowledge to recommend and provide appropriate nutritional care for prevention and or treatment of various diseases.

### PRACTICAL:

This will help the students to get familiarised with the newer concepts in the dietary management of various diseases and disorders

## 3 SEM III: PAPER-I: Community nutrition:

It helps the students to understand the causes and detriments and consequences of nutritional problems in the community.

It helps to familiarise the students with various approaches to nutrition and health interventions, programmes and policies.

### PRACTICAL:

It helps to give an insight into the various food ingredients available in the market and to develop a low cost nutritious recipes for the vulnerable segments of the community. It helps the students to develop teaching aids for imparting the nutrition and health education

## PAPER-II: food microbiology

It helps to familiarise the students with the basics of food microbiology.

It enables the students to gain knowledge on preservation techniques and food contamination

### PRACTICAL:

It helps the students to familiarise with the sterilisation techniques, inoculation techniques.

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Board of Studies  
Department of Dietetics  
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Osmania University  
Hyderabad



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It helps in developing a skill in preparation of the various media preparations and solutions

**PAPER-III: food service management:**

it helps the students to gain knowledge on requirement an management of various food service establishments.

it helps the students to know the different types of the food cost involved and the methods to control them.

**PRACTICAL:**

It helps the students to gain knowledge on quantity food production.

it helps the students to learn about the various different menus and we need to standardise the recipe for the recipe conversion and to develop a HA CCP plan for Indian recipes.

**PAPER- IV: Food hygiene and sanitation**

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it is to make students understand the importance of the personal hygiene and the environmental sanitation

it helps the students to understand an assist and practise controlling factors in the environment that can potentially affect public health.

**PRACTICAL:**

it helps to understand the principle of food hygiene and sanitation necessary for the food handlers add both household and the food service establishment's levels

**4SEM IV: PAPER-I: Advanced nutrition:**

It helps to familiarise the students with the recent advances in the nutrition field

It helps to impart the knowledge on the bioavailability of the various nutrients.

**PAPER-II: Paediatric nutrition:**

It helps to understand the growth common development an nutritional requirements of the children.

it helps the students to gain an insight knowledge an inborn errors of metabolism man the paediatric critical care

**PAPER-III: Nutraceuticals and functional foods:**

It helps to familiarise students with the recent advances in the nutraceuticals.

It helps to impart knowledge on the health benefits of the nutraceuticals and functional foods

**PAPER-IV: Diet and psychology counselling skills:**

It helps to familiarise these students with diet counselling skills an to acquaint them with basic principles of psychology.

**PRACTICAL:**

**PAPER-I: Hospital internship in nutrition and dietetics :**

Internship is a phase of training wearing a graduate is expected to conduct actual practises of diet management and healthcare and acquire skills under supervision of a practising dietitian so that he or she may become capable of functioning independently.

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it is to continue the project work initiated and to submit dissertation at the end of the semester the students will be guided and supervised by the member of the teaching faculty.

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**PAPER-IV: Project work- report writing and presentation of the project seminar:**  
The presentation of the work in front of the faculty of the department has to be done And practical performance in the laboratory, interpretation of the result obtained calmer regularity and any other criteria relevant to these studies are concerned.

## **COURSE OUTCOMES** **(SUBJECT OUTCOMES SUBJECT WISE)**

**CO -1 SEM-I:**

**PAPER-I: Human nutrition:**

The students learnt about the principles of nutrition what are the steps required in meal planning and the nutritional requirements of adult man an adult woman.

The students learned in detail about the nutritional support during pregnancy and lactation. Anne the need of nutrition during infancy and the importance of Weaning.

The students understood the need of supplementations of proper nutrition for preschoolers, schoolgoing children and adolescence.

The students understood in detail about the nutritional requirements of old age an athletes.

**PRACTICAL:** The students God acquainted with the row an cook quantities of different food commodities an how to prepare, plan, calculate the nutritive value for various life stages.

**PAPER-II: nutritional biochemistry – I:**

The students understood the classification, sources, function and requirements, digestion and absorption of the carbohydrate and the metabolism and the inborn errors of the carbohydrate metabolism.

The students understood the classification and the functions and the sources of the amino acids and proteins and types, components and structure of nucleic acids.

The students learned in detail about the amino acid metabolism, balance, imbalance and toxicity of amino acids and inborn errors of amino acid metabolism.

The students learnt in detail about the synthesis of pure enson pyramids Anne their degradation, protein synthesis.

**PRACTICAL:**

the students got acquainted with the principles, techniques an application off various qualitative and quantitative analysis off various nutrients like proteins carbohydrates, fatty acids, amino acids.

**PAPER-III: Human Physiology:**

the students learnt about the structure and functions of the gastrointestinal tract and the excretory system in detail.

The students got well acquainted with the structure and functions and the mechanism of the respiratory system and the abnormalities associated with the respiratory system and the mechanics a man the classification structure and function of the parts of the nervous system.

The students were able to gain knowledge about the structure and function of the circulatory system and decomposition of the blood and blood coagulation.

The students were able to learn in detail about the endocrine glands, the formation and the secretion of the hormones and the various different glance and their functions and deficiency's off their hormones

**PRACTICAL:**

These students got acquainted with the different principles, techniques all methods of analysis for various components of blood

**PAPER-IV: Principles of dietetics:**

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the students understood the role and responsibilities of dietitian, the interpersonal relationship with the patient and they need of nutritional counselling and nutritional assessment, you modifications of the normal diet and the need for the modification of the diet.

These students understood what is enteral nutrition, parental nutrition and the need of the nutritional support before and after the operative conditions and the need of the nutritional support in the person suffering with burns.

The students understood the provision of the proper nutrition in energy imbalances and gastrointestinal disorders.

The students gained a inside about the need of the nutrition in febrile conditions, the emphasis on the drug and nutrient interaction.

#### PRACTICAL:

The students understood the preparation, planning and calculation of the nutritive values for various diseases and disorders.

#### CO-2 SEM-II:

##### PAPER-I: Principles of food:

the students learn about the different cereals and pulses what are the compositions off cereals and pulses and what are the different processing an cooking techniques used.

The students will understand in detail the composition and the nutritive value of milk,egg, meat, poultry and fish.

The students understood in detail about facts an oil Anne sugars what are the different types of sugars what are the stages of sugar cookery and the factors affecting crystallisation.

These students understood the various plant pigments what are the factors affecting plant pigments on cooking, what is sensory evaluation and the types of evaluation techniques.

#### PRACTICAL:

These students learn in detail what is gelatinization an factors affecting gelatinization, how to estimate the amount of alkaline phosphate present in the milk and prepared mayonnaise, understand the various stages of sugar cookery and conduct the sensory evaluation

##### PAPER-II: Nutritional biochemistry-II:

The students understood the classification, sources, function, digestion and absorption of the lipid's and the metabolism involved in it.

The students understood the imbalances of the lipid's and the fat soluble vitamins in detail.

The students understood the functions, distribution, requirements, disturbance in fluid balance and the role of salutes, what are the different water soluble vitamins their physiological action, transport, utilisation, storage, sources, functions and deficiencies.

The students understood about the various different minerals and trace elements what are their Physiology, sources, functions and deficiencies.

#### PRACTICAL:

The students learn in detail the quantitative estimations of various vitamins and minerals.

##### PAPER-III: Research methodology:

the students understood what is the definition of the research what is the characteristic of research, fried area of the good research merits and demerits of the research, they learn definition, parts, steps in writing thesis.

The students learned in detail about the sampling design and the types of sampling.

The students learnt about the various methods of data collection and compilation and what are the different types of the data and the criteria for evaluation of instruments they learn about the graphical representation of the data an also the tabulation of the data.

  
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The students learn various different statistical methods like mean, median, common mode, analysis of variance, T test, F Test, contingency tables and chi square test.

**PRACTICAL:**

The students gained knowledge on how to analyse the techniques to collect and compile the data and apply the statistical techniques to tabulate the data, and interpret the data.

**PAPER-IV: Diet in disease:**

the students learned about the dietary management of hepatic disorders.

The students understand the dietary management of renal disorders.

The students learned in detail about the role of nutrition in balancing the hormonal disturbances.

The students understood in detail about the role of nutrition in the disorders of circulatory system, disorders of musculoskeletal system, cancer and AIDS.

**PRACTICAL:**

The students will understand the newer concepts in the dietary management of various diseases and disorders affecting the humans.

**CO-3 SEM III:**

**PAPER-I: Community nutrition:**

the students understand the need of anthropometric measurements and the various different diet services their uses and limitations.

The students learn the importance of the nutrition and health education and what are the tools and techniques of health education and Health Administration at the various levels.

the students learn and understand the nutrition and the health interventions at the national level and the programmes that are organised by the government to prevent various deficiencies and to come back the malnutrition in the nation.

the students will understand in detail what are the vital statistics, the occupational Hazards and the need of the protection of the health and nutritional status of the workers and the management during calamities and emergencies.

**PRACTICAL:**

The students are expected to develop a local nutritious recipe which is standardised and calculate the cost and the nutritive value of the recipe. The students learn to prepare a diet survey and collect the data and compile it also the students are expected to develop various audio visual aids.

**PAPER-II: Food microbiology:**

These students learn in detail about the scope of the microbiology and the importance of the microbiology in different areas and what are the different types of the microorganisms and what are the factors affecting their growth.

The students learn what is food preservation what are the principles of the food preservation and the methods of the food preservation in detail.

The students understand the classification of the food by ease of this spoilage, what are the causes of this spoilage in different types of the foods, what are the sources of the contamination, this spoilage in different food groups.

The students learn in detail the definition of the fermentation what is the history of the fermented foods, the benefits of the fermentation and what are the different types of the fermentation, the different foods that are fermented.

**PRACTICAL:** The students get familiar with the different sterilisation techniques and the methods of media preparation and solutions. They learn about the different inoculation techniques and prepare bacterial staining.

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## PAPER-III: food service management:

The students learn about the management of the food service establishment, what are the functions of the management, the principles involved in the management and the types of the food service establishments.

the students learn about the organisation of these spaces and the equipments in the food service establishment.

The students understand in detail the characteristics of the food what are their sensory qualities and the nutritional qualities, Huawei food purchasing is important and what are the different types of food purchasing sources, they learn about the importance of the menu planning and the types of the menu plans.

The students understand how to formulate and standardise the different recipes and learn the steps involved in the formulation and standardisation of the recipes, they learn the importance of the food product labelling and their regulations.

### PRACTICAL:

the students prepare different menus for quantity food production and standardise the recipes for the recipe conversion factor an eel Anne the nutritive values the develop HACCP plan for an Indian recipe.

## PAPER-IV: Food hygiene and sanitation:

The students understand the definition of hygiene, food hygiene and the need of the sanitation and what are the basic aspects of the personal hygiene.

the students understand the classification of the best and the ways to control the household pest by the utilisation of pesticides and insecticides and they understand the need for personal hygiene.

the students learn about the uses of the water what are the sources of the water and the contamination of the water what are the hazards of the water pollution and the purification of the water at both large scale and small scale.

the students learn about the environmental pollution and the prevension of the different environmental pollutions.

### PRACTICAL:

The students understand the principles of the food hygiene and sanitation by preparing an inventory list to cheque the personal hygiene of the food handlers there hand hygiene an wash hand technique, how do they take care of the skin hair, hand, fee, nails and the mouth and by running an estimation of hardness of water and microbial contamination of the water

## CO-4 SEM IV: PAPER-I: advanced nutrition:

the students get familiar to the current trends in the field of the nutrition they learn about the designer foods, genetically modified foods and novel proteins.

The students learn about the bio availability of the nutrients in performing the various bodily functions.

These students learn about the nutrition which is associated with the immunity and the gene expression and principles of gene expression.

The students understand the importance of the food packaging and labelling of the food what are the different types of the packaging material, the packages with the special features and the principles and codex guidelines and the labelling provisions in the existing food loss

### PAPER-II: Paediatric nutrition:

the students learn about the normal growth pattern in the children and the nutritional assessment methods for understanding the health status of the children an the nutritional support in the critically ill children and the diary management of PEM.

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These students learn in detail about the dry tree management in the gastrointestinal track, liver and kidney diseases.

the students learn in detail about the role of the nutrition in the management of diabetes, cardiovascular diseases and aids in the paediatrics.

The students learn about the diary management in the special conditions like in allergies and intolerances an inborn errors an nutrition for children with special needs which include ketogenic diet for epilepsy neutropenic diet for marro transplants an autism

**PAPER-III: Neutraceuticals Ann functional foods:**

The students learn about the definition, history common market trends and sources, classification of the new rescue tickles how why do chemicals can be considered as neutraceuticals and what are the significances and relevance of neutraceuticals in the management of the diseases and disorders.

the students learn about the evolution and definition of the functional foods water the legal status is a functional foods in different countries and the types of the foods which can be categorised as the function foods.

The students learn about the probiotics and prebiotics what are the health benefits and what are the recent advances in both pre and probiotics.

the students learn about the definition common mode of action and classification of the fighter chemicals and the classification, mechanism of action of the antioxidants

**PAPER-IV: Diet and psychology counselling skills :**

the students learn the meaning significances, processes, types of diet counselling, what is the goal of the counselling an it sequence they understand the material needed for the counselling and what role does a counsellor place in effective counselling

the students learn about the diet counselling at the hospital and the community level how to organizing health camps and patient feedback at both hospital and community level they learn to deliver an effective counselling for various health conditions.

The students learn the definition, the nature and scope of psychology they learn about the nature and the goals of the counselling, the principles of the counselling, the characteristics of a good counsellor and this special areas of counselling.

The students learn about the different approaches of counselling and what are the different stages of skills required to deliver an effective counselling session

**PRACTICAL:**

**PAPER-I: Hospital internship in nutrition and dietics:**

the students get an opportunity to complete an internship in a multi speciality hospital which enables them to get trained to manage a die prescription in dependently for clinically common disease conditions encountered at a higher level they can use parental feeds an nasal tube feedings, they can manage the medical commerce surgical, obstructive, new needle and paediatric specialties an monitor the National Health programmes and schemes, they develop a leadership quality to function effectively as the leader of the dietetics department organise to deliver be health and family welfare services in existing social economic, political and cultural environment. By the end of the hospital internship they will be able to perform and complete their work in dependently.

**PAPER-II: Internship- case study presentation**

the students gets an opportunity to display a presentation and give a viral under internship and they have to submit a bound copy of the word processed, printed internship report to the programme in charge for necessary action after their internship

*[Handwritten Signature]*  
Head & Chairman  
Department of Dietetics  
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# ANWARUL ULOOM COLLEGE (AUTONOMOUS)

(Accredited by NAAC with 'A' Grade & An ISO 9001:2015 Certified Institution)

(Affiliated to Osmania University, Hyderabad)

**PAPER-III: project work- collection of the data:**

The students gets in oppourtunity to be guided and supervised by the teaching faculty and perform an independent research work which can be a survey or a laboratory oriented research an you students are required to submit the research copy at the end of the semester in the form of a thesis.

**PAPER-IV: Project work- report writing and presentation of the project seminar:**

These students work is analysed at the time of the presentation of the work in front of the faculty of the department at these two times during this project work by discussing in detail the project and state-of-the-art of the presentation and the discussion of the material and the methods and the protocol that is being followed to perform the study and the presentation of the obtained results which will enablethe students to work in a very professional manner and to present their work systematically at their viva.

  
Head & Chairman  
Board of Studies  
Department of Nutrition & Dietetics  
Anwarul Uloom College  
New City Osmania University Hyderabad



# ANWARUL ULOOM COLLEGE (AUTONOMOUS)

(Affiliated to Osmania University)

## PHYSICS DEPARTMENT

Under Graduate - B.Sc. (M.P.C \*\* M.P.E \*\* M.P.Cs.)

### Program Educational Objectives - Outcomes (2017 - 2018)



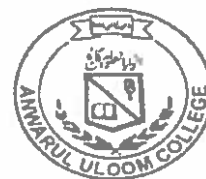
#### Programme Objective: B.Sc.

1. Read, understand and interpret physical information – verbal, mathematical and graphical.
2. Impart skills required to gather information from resources and use them.
3. To give need based education in science of the highest quality at the undergraduate level.
4. Perform experiments and interpret the results of observation, including making an assessment of experimental uncertainties.
5. Provide an intellectually stimulating environment to develop skills and enthusiasms of students to the best of their potential.

#### Programme Outcomes: B.Sc.

- PO-1. This course forms the basis of science and comprises of the subjects like Mathematics, Physics, Electronics, Chemistry, Biology and Zoology.
- PO-2. It helps to develop scientific temper and thus can prove to be more beneficial for the society as the scientific developments can make a nation or society to grow at a rapid pace
- PO-3. After the completion of this course students have the option to go for higher studies i.e. M.Sc. and then do some research for the welfare of mankind
- PO-4. After higher studies students can join as scientist and can even look for professional job oriented courses.
- PO-5. This course also offers opportunities for serving in Indian Army, Indian Navy, Indian Air Force as officers.
- PO-6. Students after this course have the the option to join Indian Civil Services as IAS, IFS etc..
- PO-7. Science graduates can go to serve in industries or may opt for establishing their own industrial unit.
- PO-8. Apart from the research jobs, students can also work or get jobs in Marketing, Business & Other technical fields
- PO-9. Science graduates also recruited in the bank sector to work as customer service executives. Students can also find employment in government sectors.
- PO-10. Often, in some reputed universities or colleges in India and abroad the students are recruited directly by big MNC's after their completion of the course.

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### What is Physics ?

Physics is the study of matter and energy.

Physics has many subcategories:

Mechanics- the study of motion.

Dynamics- the study of causes of motion.

Thermodynamics- heat behaviors. Waves, Sound, Light, Optics.

<b>Programme Specific Outcomes: B.Sc. (M.P.C ** M.P.E ** M.P.Cs.) - Physics</b>
PSO-1. Provide students with a broad understanding and appreciation of the physical principles and laws governing the universe.
PSO-2. Prepare students for success in their chosen careers by emphasizing critical thinking and scientific reasoning through an inquiry-based curriculum.
PSO-3. Develop quantitative, analytical and problem-solving skills in majors and non-majors to ensure that students emerging from the coursework/program are equipped with the set of competencies required in the STEM (Science, Technology, Engineering and Mathematics) workplace.
PSO-4. Students will demonstrate proficiency in analyzing and solving problems in physics and related STEM field.
PSO-5. After the completion of this course students have the option to go for higher studies i.e. M. Sc and then do some research for the welfare of mankind.

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**B.Sc. I year - Semester I  
Paper - I  
Code No. 6118  
Subject - Mechanics**



**Course Objective: Mechanics**

1. This course would empower the student to acquire engineering skills and practical knowledge, which help the student in their everyday life.
2. Learn basics of the kinematics and dynamics linear and rotational motion.
3. Develop skills to understand and solve the equations of Newtonian Gravity and central force problem.
4. This syllabus will cater the basic requirements for their higher studies.
5. This course will provide a theoretical basis for doing experiments in related areas.

**Course Outcomes: Mechanics**

- CO-1. Evaluate line, surface and volume integrals.
- CO-2. Learned conservation laws of energy and linear and angular momentum and apply them to solve problems.
- CO-3. Equation of continuity- Euler Equation.
- CO-4. Apply Kepler's law to describe the motion of planets and satellite in circular orbit, through the study of law of Gravitation.
- CO-5. Fundamental ideas of special theory of relativity such as length contraction and time dilation and mass –energy invariance.

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**B.Sc. I year - Semester II**  
**Paper - II**  
**Code No. 6218**  
**Waves and Oscillations**



**Course Objective: Waves and Oscillations**

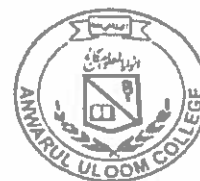
1. To acquire the knowledge of terms, facts, concepts, definitions, laws and principles in simple harmonic oscillations, damped and forced oscillations, complex vibrations, vibrating strings, vibrations of bars and ultrasonics.
2. To acquire the skill in practical aspects of handling the apparatus, recording the observations, drawing diagrams and graphs related to the practicals in Simple Harmonic oscillations, Damped and forced oscillations, Complex vibrations, Vibrating strings, Vibrations of bars and ultrasonics.
3. To develop scientific interest.
4. To develop scientific attitude.
5. To develop good personality traits

**Course Outcomes: Waves and Oscillations**

- CO-1. The students could able to recall and recognize the different terms, facts, concepts, definitions, laws, principles and processes in Simple Harmonic oscillations, Damped and forced oscillations, Complex vibrations, Vibrating strings, Vibrations of bars and Ultrasonics.
- CO-2. They could check the apparatus, perform experiments, records the readings, draw the diagrams and graphs related to the practicals in Simple Harmonic oscillations, Damped and forced oscillations, Complex vibrations, Vibrating strings, Vibrations of bars and Ultrasonics.
- CO-3. The student develop scientific attitude through proper recording, interpretation, precise statements, judgment and independent thinking.
- CO-4. The students develop scientific interest by questioning, reading, discussing and debating.
- CO-5. The students develop personality traits such as Punctuality, faithfulness and self-confidence.

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**B.Sc. II year - Semester III  
Paper - III  
Code No. 6318  
Thermal Physics**



**Course Objective: Thermal Physics**

1. This basic course in thermodynamics will enable the student to understand various thermo dynamical concepts, principles.
2. This course is to develop a working knowledge of statistical mechanic and to use this knowledge to explore various applications related to topics in material science and the physics of condensed matter.
3. To understand the applications of the laws of thermodynamics.
4. Measurement of Planck's constant using black body radiation.
5. To determine Stefan's Constant.

**Course Outcomes: Thermal Physics**

- CO-1. Define postulates of kinetic theory of gases
- CO-2. Differentiate the terms heat and temperature and measure temperature using thermometer and convert one scale of temperature to another scale.
- CO-3. Define different thermal processes and understand laws of thermodynamics and identify its outcomes.
- CO-4. Realize the importance of Thermo dynamical functions and applications of Maxwell's relations.
- CO-5. Differentiate between principles and methods to produce low temperature, liquefy air, helium and hydrogen
- CO-6. Familiarize in depth about statistical distribution and have basic Ideas about Maxwell-Boltzman, Bose-Einstein and Fermi Dirac Statistics and their applications.

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**B.Sc. II year - Semester IV**  
**Paper - IV**  
**Code No. 6418**  
**Optics**



**Course Objective: Optics**

1. This course aims to provide necessary foundation in waves and optics which prepare the students for an intensive study of advanced topics at a later stage.
2. To acquire skills allowing the student to identify and apply formulas of optics and wave physics using course literature.
3. To acquire the knowledge of terms, facts, concepts, definitions, laws, principles and processes in Aberrations, Interference, Diffraction, Polarization, Lasers & Holography and Fiber optics.
4. Fresnel diffraction and Fraunhofer diffraction, Plane diffraction grating, Resolving power of grating.
5. Brewster's law, Nicol prism, Double refraction, Polaroid, optical activity, Laurent's Half shade Polarimeter.
6. Describe and discuss technical applications of simple optical instruments.

**Course Outcomes: Optics**

- CO-1. Use the principles of wave motion and superposition to explain the physics of polarization, interference and diffraction.
- CO-2. The students could able to recall and recognize the different terms, facts, concepts, definitions, laws, principles and processes in Aberrations, Interference, Diffraction, Polarization, Lasers & Holography and Fiber optics.
- CO-3. Calculate wavelength difference and fringe width from the interference pattern.
- CO-4. Understand the properties of light like reflection, refraction, interference, diffraction etc..
- CO-5. Explain diffraction pattern and calculate dispersive power of the grating.
- CO-6. Analyze different types of polarized light.

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**B.Sc. III year - Semester V**  
**Paper - V**  
**Code No. 6518**  
**Electricity, Magnetism and Electronics**



**Course Objective: Electricity, Magnetism and Electronics**

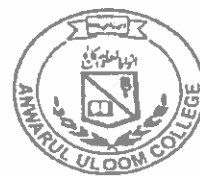
1. To acquire the knowledge of terms, facts, concepts, definitions, laws, principles and processes in Electric field intensity and potential, Dielectrics, Electric and magnetic fields, Electromagnetic induction, Alternating currents and electromagnetic waves, Maxwell's equations, Basic electronics and Digital electronics.
2. To acquire the skill in practical aspects of handling the apparatus, recording the observations, drawing diagrams, circuits and graphs related to the practical of Electric field intensity and potential, Dielectrics, Electric and magnetic fields, Electromagnetic induction, Alternating currents and electromagnetic waves, Maxwell's equations, Basic electronics and Digital electronics.
3. To develop scientific interest.
4. To develop scientific attitude.
5. To develop good personality traits

**Course Outcomes: Electricity, Magnetism and Electronics**

- CO-1. The students could able to recall and recognize the different terms, facts, concepts, definitions, laws, principles and processes in Electric field intensity and potential, Dielectrics, Electric and magnetic fields, Electromagnetic induction, Alternating currents and electromagnetic waves, Maxwell's equations, Basic electronics and Digital electronics.
- CO-2. They can analyze, interprets, predicts, relates and realizes the various phenomena in Electric field intensity and potential, Dielectrics, Electric and magnetic fields, Electromagnetic induction, Alternating currents and electromagnetic waves, Maxwell's equations, Basic electronics and Digital electronics.
- CO-3. The student develop scientific attitude through proper recording, interpretation, precise statements, judgment and independent thinking.
- CO-4. The students develop scientific interest by questioning, reading, discussing and debating.
- CO-5. The students develop personality traits such as Punctuality, faithfulness and self-confidence.

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**B.Sc. III year - Semester VI**  
**Paper - VI**  
**Code No. 6618**  
**Modern Physics**



**Course Objective: Modern Physics**

1. To acquire the knowledge of terms, facts, concepts, definitions, laws, principles and processes in Atomic and molecular physics, Matter waves & Uncertainty Principle, Quantum (wave) mechanics, General Properties of Nuclei, Radioactivity decay, Maxwell's equations, Crystal Structure and Superconductivity.
2. To acquire the skill in practical aspects of handling the apparatus, recording the observations, drawing diagrams, circuits and graphs related to the practicals of Atomic and molecular physics, Matter waves & Uncertainty Principle, Quantum (wave) mechanics, General Properties of Nuclei, Radioactivity decay, Maxwell's equations, Crystal Structure and Superconductivity.
3. To develop scientific interest.
4. To develop scientific attitude.
5. To develop good personality traits.

**Course Outcomes: Modern Physics**

- CO-1. The students could able to recall and recognize the different terms, facts, concepts, definitions, laws, principles and processes in Atomic and molecular physics, Matter waves & Uncertainty Principle, Quantum (wave) mechanics, General Properties of Nuclei, Radioactivity decay, Maxwell's equations, Crystal Structure and Superconductivity.
- CO-2. They could check the apparatus, perform experiments, records the readings, draw the diagrams, circuits and graphs related to the practicals of Atomic and molecular physics, Matter waves & Uncertainty Principle, Quantum (wave) mechanics, General Properties of Nuclei, Radioactivity decay, Maxwell's equations, Crystal Structure and Superconductivity.
- CO-3. The students develop scientific interest by questioning, reading, discussing and debating.
- CO-4. The student develop scientific attitude through proper recording, interpretation, precise statements, judgment and independent thinking.
- CO-5. The students develop personality traits such as Punctuality, faithfulness and self-confidence.

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*Khaleequl Haq*

Chairman BOS, Dept. of Physics  
**ANWAR-UL-ULOOM COLLEGE**  
Mallepally, Hyderabad-500 001.



# ANWARUL ULOOM COLLEGE (AUTONOMOUS)

(Affiliated to Osmania University)



## PHYSICS DEPARTMENT

Post Graduate - M.Sc.

### Program Educational Objectives - Outcomes (2017 - 2018)

#### Programme Objective: M.Sc.

1. Read, understand and interpret physical information – verbal, mathematical and graphical.
2. Impart skills required to gather information from resources and use them.
3. To give need based education in science of the highest quality at the undergraduate level.
4. Perform experiments and interpret the results of observation, including making an assessment of experimental uncertainties.
5. Provide an intellectually stimulating environment to develop skills and enthusiasms of students to the best of their potential.

#### Programme Outcomes: M.Sc.

- PO-1. This course forms the basis of science and comprises of the subjects like Mathematics, Physics, Chemistry, Electronics and Computer Science.
- PO-2. It helps to develop scientific temper and thus can prove to be more beneficial for the society as the scientific developments can make a nation or society to grow at a rapid pace
- PO-3. After the completion of this course students have the option to go for higher studies i.e. PhD and then do some research for the welfare of mankind
- PO-4. After higher studies students can join as scientist and can even look for professional job oriented courses.
- PO-5. This course also offers opportunities for serving in Indian Army, Indian Navy, Indian Air Force as officers.
- PO-6. Students after this course have the the option to join Indian Civil Services as IAS, IFS etc..
- PO-7. Science graduates can go to serve in industries or may opt for establishing their own industrial unit.
- PO-8. Apart from the research jobs, students can also work or get jobs in Marketing, Business & Other technical fields
- PO-9. Science graduates also recruited in the bank sector to work as customer service executives. Students can also find employment in government sectors.
- PO-10. Often, in some reputed universities or colleges in India and abroad the students are recruited directly by big MNC's after their completion of the course.

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## What is Physics ?



Physics is the study of matter and energy.

Physics has many subcategories:

Mechanics- the study of motion.

Dynamics- the study of causes of motion.

Thermodynamics- heat behaviors, Waves, Sound, Light, Optics.

### OBJECTIVE OF THE PROGRAMME:

The major objective of the programme is to nurture the students for careers in teaching, research, etc. It also aims to develop thorough and in-depth knowledge of various core subjects in Physics such as Mathematical Physics, Electronics, Quantum Mechanics, Nuclear Physics, Condensed Matter Physics, Classical Mechanics, Electromagnetic theory, Atomic and Molecular physics, etc.

The M.Sc. Physics programme will also inculcate strong student competencies in Physics and its applications in a technology-rich, interactive environment through elective and value added skill based courses.

M.Sc Physics postgraduate course syllabus and subjects prepare students to become research analysts or to work in healthcare, pharmaceutical companies, government hospitals, medical research labs, and environment protection companies.

The M.Sc. Physics curriculum includes topics such as mathematical methods, quantum mechanics, solid-state physics, atomic spectroscopy, relativity and cosmology, radiation theory, statistical mechanics, computer application in physics, astrophysics, and classical mechanics.

### Programme Specific Outcomes: M.Sc. - Physics

PSO-1. Provide students with a broad understanding and appreciation of the physical principles and laws governing the universe.

PSO-2. Prepare students for success in their chosen careers by emphasizing critical thinking and scientific reasoning through an inquiry-based curriculum.

PSO-3. Develop quantitative, analytical and problem-solving skills in majors and non-majors to ensure that students emerging from the coursework/program are equipped with the set of competencies required in the STEM (Science, Technology, Engineering and Mathematics) workplace.

PSO-4. Students will demonstrate proficiency in analyzing and solving problems in physics and related STEM field.

PSO-5. After the completion of this course students have the option to go for higher studies i.e. PhD and then do some research for the welfare of mankind.

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**M.Sc. I year - Semester I  
Paper - I  
Code No. P 101  
Subject - Mathematical Physics**



**Course Objective: Mathematical Physics**

1. To impart knowledge about various mathematical tools employed to study physics problems.
2. The purpose of the course is to introduce students to methods of mathematical physics and to develop required mathematical skills to solve problems in quantum mechanics, electrodynamics and other fields of theoretical physics.
3. The objective of this course is to provide a strong mathematical foundation in vector calculus, matrices and differential equations.
4. To enhance problem solving skills and to give the ability to formulate, interpret and draw inferences from the mathematical solutions.

**Course Outcomes: Mathematical Physics**

The students will have understanding of:

- CO-1. Basic and advanced mathematical tools required for Physics Problems.
- CO-2. Different Techniques to solve differential and integral equations.
- CO-3. Various special functions and important transforms and their applications.
- CO-4. Solve transfer functions in Instrumentation using Laplace transforms.
- CO-5. Apply Matrices in the study of electrical circuits, Quantum Mechanics and Optics.

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**M.Sc. I year - Semester I  
Paper - II  
Code No. P 102  
Classical Mechanics**



**Course Objective: Classical Mechanics**

1. This course is an essential one designed to provide the foundations of the advanced level mechanics.
2. The course aims to develop an understanding of Lagrangian and Hamiltonian formulation which allow for simplified treatments of many complex problems in classical mechanics and provides the foundation for the modern understanding of dynamics.
3. To learn Lagrangian and Hamiltonian mechanics, systems with constraints, rigid body dynamics, vibrations, central forces, Hamilton-Jacobi theory, action-angle variables, and continuous systems.
4. This course also provides an introduction to classical field theory and relativistic mechanics.

**Course Outcomes: Classical Mechanics**

The students will have understanding of:

- CO-1. Idea and concepts in classical physics.
- CO-2. Basic concepts in Variational principle and Principle of Least Actions.
- CO-3. Derivations, necessity and applications of Lagrangian and Hamiltonian formulations.
- CO-4. Central force problems, theory of small oscillations and its applications.
- CO-5. Explore the application of Hamilton's equations in solving the equation of motion of a particle in a central field, projectile motion of a body.

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**M.Sc. I year - Semester I**  
**Paper - III**  
**Code No. P 103**  
**Quantum Mechanics - I**



The aim of the course on Quantum Mechanics-I is to enable the students to understand the basic techniques & methods of quantum mechanics so that they may apply these methods in various other fields of physical science and in research and development.

**Course Objective: Quantum Mechanics - I**

1. The course is on the fundamental topics of quantum mechanics.
2. The course starts with the introduction of postulates of quantum mechanics, operator formalism. The topics covered range from exactly solvable systems, time-independent and time-dependent perturbation theories, orbital and spin angular momenta and relativistic quantum mechanics.
3. The skill for solving simple systems is cultivated.
4. The primary objective of this course is to develop familiarity with the physical concepts and facility with the mathematical methods of quantum mechanics. A secondary, but still very important objective is to cultivate your skills at formulating and solving physics problems.

**Course Outcomes: Quantum Mechanics - I**

The students will have understanding of

- CO-1. Difference between classical and quantum mechanical theory and approach.
- CO-2. Linear Vector Space, operators and tools to calculate eigen values.
- CO-3. Various techniques to solve time dependent and time independent Schrodinger equations using different coordinate systems.
- CO-4. Connection between symmetry and conservation laws, commutation relations, tools to calculate components and total angular momentum.
- CO-5. Various approximation methods utilized in Quantum Mechanics.
- CO-6. Evaluate the eigen values of L and J vectors.

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**M.Sc. I year - Semester I  
Paper - IV  
Code No. P 104  
Solid State Physics**



The main objective of this course is to provide the fundamental knowledge in solid state physics and then study their physical properties. It covers crystal structures, binding and their defects, elastic properties, effect of temperatures on metals, basic of dielectrics, semiconductor phenomena and magnetic field effects.

**Course Objective: Solid State Physics**

1. The aim of this course is to provide an extended knowledge of the principles and techniques of solid state physics.
2. The course covers the physical understanding of matter from an atomic view point.
3. Topics covered include the structure, thermal, electrical, magnetic and superconductivity properties of matter.
4. The course has a theoretical lecture component and makes extensive use of examples and exercises to demonstrate the material properties.

**Course Outcomes: Solid State Physics**

On Successful completion of course student will:

- CO-1. Understand different types of crystal structures in terms of the crystal lattice and the basis of constituent atoms.
- CO-2. Understand the theory of X-ray diffraction in the reciprocal lattice (k-space)
- CO-3. Apply the theory of lattice vibrations (phonons) to determine thermal properties of solids.
- CO-4. Study the problem of electrons in periodic potential, examine its consequence on the band-structure of the solids.
- CO-5. Gain knowledge about the experimental techniques for crystal growth from solution and melt.

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**M.Sc. I year - Semester II**  
**Paper - I**  
**Code No. P 201**  
**Electromagnetic Theory**



The course will enable the students to understand various laws of Electrostatics and Magnetostatics including boundary value problems. Maxwell Equations for understanding propagation of electromagnetic waves in various media. It will also help the student to understand the origin of the electromagnetic radiations from an accelerating charge particle.

**Course Objective: Electromagnetic Theory**

The course on electromagnetic theory is framed

1. To understand the fundamental theories that explain electrostatics and magnetostatics.
2. To illustrate the application of electrostatics in macroscopic media.
3. To couple the electrostatics and magnetostatics phenomena and explain the elementary ideas of electromagnetic theory.
4. To extend the electrodynamics principle for explaining the electromagnetic optical wave propagation.

**Course Outcomes: Electromagnetic Theory**

On Successful completion of course student will:

- CO-1. Acquire knowledge on general wave equation using Maxwell's equations and able to derive Laplace equations for electrostatic potential in Cartesian, spherical and cylindrical coordinates.
- CO-2. Analyze scalar and vector magnetic potentials and the propagation of EM waves in different media.
- CO-3. Understand the propagation of EM waves in bounded and unbounded media and boundary conditions for EDB and H.
- CO-4. Understand Poynting theorem and its physical significance.
- CO-5. Analyze Fresnel relations-Reflection (R) and Transmission (T) coefficients. Brewster's angle.
- CO-6. Have an idea on the concept of EM radiation of inhomogeneous wave equation, harmonically oscillating source.

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**M.Sc. I year - Semester II**  
**Paper - II**  
**Code No. P 202**  
**Statistical Mechanics**



**Course Objective: Statistical Mechanics**

The aim of the course "Statistical Physics" is to train the students in the methods of Statistical Physics.

1. The objective of the course is to understand what is temperature and how to calculate it?
2. To acquire the knowledge of various statistical distributions and their applications in physics.
3. To comprehend the concepts of phase transitions and thermodynamic functions.
4. Student will learn the various fundamentals and applications of classical and quantum statistical methods and phase transition theory.

**Course Outcomes: Statistical Mechanics**

On Successful completion of course student will:

- CO-1. Gain knowledge about classical and quantum statistical mechanics, including Boltzmann, Fermi-Dirac, and Bose-Einstein statistics.
- CO-2. Apply the formalism of statistical mechanics and probability theory to derive relations between thermo dynamical quantities.
- CO-3. Broad understanding of statistical mechanics, and show a critical awareness of the significance and importance of the topics, methods and techniques.
- CO-4. Understand the physical statistics and its relation to information theory and able to solve statistical mechanics problems for simple non-interacting systems.
- CO-5. Understand the phase transitions and universality in second order phase transitions.

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**M.Sc. I year - Semester II**  
**Paper - III**  
**Code No. P 203**  
**Quantum Mechanics - II**



**Course Objective: Quantum Mechanics - II**

1. The aim of the course on Quantum Mechanics-II is to enable the students to understand the basic techniques & methods of quantum mechanics so that they may apply these methods in various fields of research and development.
2. Introduction to methods of quantum mechanics, including Schrödinger equation and its solutions as applied to simple physical problems, elementary approximate methods, and scattering theory.
3. Student will be made familiar with, scattering theory, perturbation theory and relativistic quantum mechanics.
4. This course will provide the necessary knowledge and skills to apply advanced techniques in quantum mechanics throughout the students' careers.

**Course Outcomes: Quantum Mechanics - II**

On Successful completion of course student will:

- CO-1. Understand the kinematics of scattering process.
- CO-2. Evaluate the partial wave analysis using Born approximation method.
- CO-3. Apply time Independent perturbation theory for non degenerate case.
- CO-4. Gain knowledge on WKB approximation method to study alpha decay.
- CO-5. Remember time dependent perturbation theory.
- CO-6. Analyze the interaction of an atom with electromagnetic radiation and the relativistic quantum mechanics using Klein Gordon equation.
- CO-7. Explore the properties of gamma matrices.

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**M.Sc. I year - Semester II**  
**Paper - IV**  
**Code No. P 204**  
**Electronics**



**Course Objective: Electronics**

1. This course provides the student with the fundamental skills to understand the basic of semiconductor and components like diode, transistor, FET, MOSFET and operational amplifier It will build mathematical and numerical background for design of electronics circuit & component value.
2. To develop an understanding of fundamentals of electronics in order to deepen the understanding of electronic devices that is part of the technologies.
3. To acquaint the students with the theory, construction and operation of electronic devices.
4. To introduce the basics of digital communication methods.
5. To introduce the construction and working of nonlinear electronic circuits.

**Course Outcomes: Electronics**

On Successful completion of course student will:

- CO-1. Acquire knowledge of operational amplifier circuits and their applications.
- CO-2. Gain knowledge and evaluate the Boolean expressions, combinational logic circuits and simplifications using karnaugh maps.
- CO-3. Analyze the operation of decoders, encoders, multiplexers, adders and subtractors.
- CO-4. Understand the working of latches, flip-flops, designing registers, counters, a/d and d/a converters.
- CO-5. Design and Analyze synchronous and asynchronous sequential circuits.
- CO-6. Interpret the architecture, instruction set and also practice the basic programs of 8085 microprocessor.

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**M.Sc. II year - Semester III**  
**Paper - I**  
**Code No. P 301**  
**Subject - Modern Optics**



**Course Objective: Modern Optics**

On Successful completion of course student will:

1. To study the key concepts used in optics.
2. The main aims of this course are to develop a working knowledge and conceptual understanding of important topics in contemporary laser physics at a quantitative level.
3. Information processing using optical techniques such as holography and Fourier transform is an important area of Modern Optics.
4. In this course the fundamentals, techniques and applications of holography and Fourier optics will be provided.

**Course Outcomes: Modern Optics**

On Successful completion of course student will:

- CO-1. Gain knowledge on laser rate equations for Two, Three, Four-level laser systems.
- CO-2. Understand Einstein relations for emission and absorption of radiation.
- CO-3. Gain knowledge on classification of laser systems.
- CO-4. Gain knowledge on application of various laser systems.
- CO-5. Understand basic principles of holography and its applications.
- CO-6. Understand the concept of recording and reconstruction of a hologram.
- CO-7. Understand the fourier transforming properties of lenses.
- CO-8. Understand the applications of non-linear optics.

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**M.Sc. II year - Semester III**  
**Paper - II**  
**Code No. P 302**  
**Advanced Solid State Physics**



**Course Objective: Advanced Solid State Physics**

1. The aim of the course on advanced solid state physics is to enable the students to understand the physics of magnetic and superconducting, ferro & antiferromagnetic materials and behaviour of these materials under temperature and external fields.
2. Students may also able to understand the optical behaviour of materials and various ordered phases of matters. The study of this course enables the students to extend his knowledge for research work in the condensed matter physics and material science.
3. Understand the relation between the electron structure of crystalline solids and their dielectric, magnetic and superconducting properties.
4. The course conveys an understanding of how solid state physics has contributed to the existence of a number of important technological developments of importance in our lives now and in the future.

**Course Outcomes: Advanced Solid State Physics**

On Successful completion of course student will:

- CO-1. Acquire knowledge about different experimental approaches in the study of Fermi surfaces in different materials.
- CO-2. Understand piezo, pyro and Ferro electricity, ferroelectric domains and hysteresis.
- CO-3. Understand basic theories of magnetic materials like ferromagnetism, ferrimagnetism, anti-ferromagnetism.
- CO-4. Acquire basic knowledge on (low temperature) superconductivity in type I and type II super conductors, and also different theoretical approaches to super conductivity (BCS).
- CO-5. Understanding of various phenomena related to super conductivity, such as the Meissner effect, flux quantization, Giæver- and Josephson tunneling.

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**M.Sc. II year - Semester III**  
**Paper - III**  
**Code No. PEI 303**  
**Digital Logic Circuits**



This class is an introduction to the basic concepts, analysis, and design of digital systems. This consists of both combinational and sequential logic. Lectures will enable students to experience with several levels of digital systems.

**Course Objective: Digital Logic Circuits**

1. Design methodologies for electronic circuits, to use mathematical expressions to describe the functions of simple combinational and sequential circuits.
2. Understand Boolean algebra, basic laws and rules in logic design, DeMorgan's theorem, Karnaugh map, and approaches to simplifying logic circuits.
3. Understand systematical design methodology for combinational logic circuits and build this kind of digital systems by using some IC devices.
4. Understand systematical design methodology for sequential logic circuits.

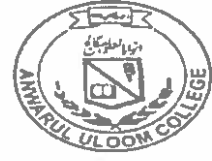
**Course Outcomes: Digital Logic Circuits**

On Successful completion of course student will:

- CO-1. Acquire the basic knowledge of digital logic levels and its application.
- CO-2. Gain knowledge on digital arithmetic operations for algebraic simplification.
- CO-3. Understand digital IC terminology and characteristics of TTL, MOS,ECL families.
- CO-4. Design Decoders, Encoders, Digital multiplexers, Adders and Subtractors, Binary comparators, Latches and Flip-Flops.
- CO-5. Design registers and Counters, A/D and D/A converters.
- CO-6. Understand, analyze and design of programmable logic devices and VHDL.
- CO-7. Identify basic requirements for a designing a combinational logic circuit.
- CO-8. Identify and prevent various hazards and timing problems in a digital circuit.

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**M.Sc. II year - Semester III  
Paper - IV  
Code No. PEI 304  
Microprocessors, DSPs & Interfacing**



**Course Objective: Microprocessors, DSPs & Interfacing**

1. To familiarize the architecture of microprocessors and micro controllers.
2. To introduce the basic architecture of Pentium family of processors.
3. To provide the knowledge about interfacing techniques of bus & memory.
4. To know about the connectivity of interfacing devices with processors.
5. Introduction of the architecture of DSP processors.

**Course Outcomes: Microprocessors, DSPs & Interfacing**

On Successful completion of course student will:

- CO-1. Understands the internal architecture, organization and assembly language programming of 8086 processors.
- CO-2. Write simple assembly language programs.
- CO-3. Explain the architecture of generic advanced microprocessor and features of advanced microprocessors.
- CO-4. Understand the various processing operations on Digital signals.
- CO-5. Know the architecture of DSP Processors TMS320C54XX Processor.

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**M.Sc. II year - Semester III  
Paper - V  
Code No. PEI 305  
Electronic Instrumentation**



**Course Objective: Electronic Instrumentation**

1. To provide the necessary foundation and advanced techniques on computational and software platforms related to the field of Electronics and Instrumentation.
2. Develop an ability to design an intelligent system for industrial automation.
3. To be successful in their respective professional careers in the field of Electronics & Instrumentation.
4. To engross in life long process of learning that keep themselves abreast of new developments in the field of Electronics & Instrumentation.

**Course Outcomes: Electronic Instrumentation**

On Successful completion of course student will:

- CO-1. Measure various electrical parameters with accuracy, precision, resolution.
- CO-2. Design different types of amplifiers and filters.
- CO-3. Select specific instrument for specific measurement function.
- CO-4. Understand principle of operation, working of different electronic instruments like digital multi meter, vector voltmeter, and power factor meter.
- CO-5. Analyze the functioning, specification, and applications of signal generators and signal analyzing instruments.
- CO-6. Understand working & principle of various signal analyzers like wave analyzer, distortion analyzer & spectrum analyzers.
- CO-7. Test and troubleshoot electronic circuits using various electronic measuring instruments.

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**M.Sc. II year - Semester IV**  
**Paper - I**  
**Code No. P 401**  
**Nuclear Physics**



**Course Objective: Nuclear Physics**

The course of nuclear and particle physics is concerned

1. To study of the fundamentals of nucleus with deuteron system and explain the origin of nuclear forces.
2. To illustrate different nuclear models that exposes the structure of nucleus
3. To explain the theories of various radioactive decays and nuclear reactions
4. To determine conservation of physical quantities and study high energy physics.

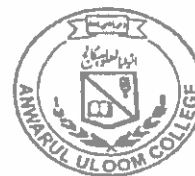
**Course Outcomes: Nuclear Physics**

On Successful completion of course student will:

- CO-1. Understand Nuclear Force And Nuclear Models.
- CO-2. Analyze the semi empirical mass formula and its applications using liquid drop model and shell model.
- CO-3. Understand the concept of Nuclear Decay Processes.
- CO-4. Interpret the Classification of nuclear reactions.
- CO-5. Understand the Classification of elementary Particles and their Quantum Numbers.

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**M.Sc. II year - Semester IV  
Paper - II  
Code No. P 402  
Spectroscopy**



**Course Objective: Spectroscopy**

1. The objective of the course is to explain the origin of the atomic spectra and behaviour of atoms in external electric and magnetic field.
2. Describe the quantum mechanics and model on molecular formation Identify and analysis different spectroscopic theory.
3. The aim of the course on Atomic and Molecular Spectroscopy is to enable the students to understand the basic techniques & methods of the subject so that they may apply these methods in various fields of research and development.

**Course Outcomes: Spectroscopy**

On Successful completion of course student will:

CO-1. Understand the basic principles of atomic absorption spectroscopy.

CO-2. Interpret the working principles and outline the atomic absorption spectroscopy device.

CO-3. Understand Micro-wave, IR and RAMAN spectroscopy and interpret the data from these measurements.

CO-4. Understand the basic principles of NMR and ESR spectroscopy and its applications.

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**M.Sc. II year - Semester IV**  
**Paper - III**  
**Code No. PEI 403**  
**Embedded Systems And Its Applications**



**Course Objective: Embedded Systems And Its Applications**

1. To develop systematic approach for development of embedded systems using general purpose microcontrollers.
2. To understand the concepts of Hardware of various microcontrollers to enable Programming and Interfacing of microcontroller.
3. To study programming of microcontrollers using assembly and embedded C with tools.
4. To know about the interfacing Circuits.

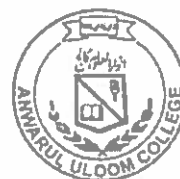
**Course Outcomes: Embedded Systems And Its Applications**

On Successful completion of course student will:

- CO-1. Analyze the models of embedded systems using different processor technologies and also various types of peripherals used in embedded system.
- CO-2. Analyze a given embedded system design and identify its performance.
- CO-3. Understand the programming model and Instruction set of 8051 Microcontroller, Addressing mode supported by 8051 instruction set.
- CO-4. Practice the assembly language programs.
- CO-5. Gain knowledge on Serial data transfer, Interrupts, I/O ports and port expansion, DAC, ADC, Stepper motor.
- CO-6. Interpret the interfacing of LCD, key board, A/D & D/A, and stepper motor 8051 Microcontroller.

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**M.Sc. II year - Semester IV  
Paper - IV  
Code No. PEI 404  
PC Architecture**



**Course Objective: PC Architecture**

1. Modern computer technology requires an understanding of both hardware and software, since the interaction between the two offers a framework for mastering the fundamentals of computing.
2. The purpose of this course is to cultivate an understanding of modern computing technology through an in-depth study of the interface between hardware and software.
3. In this course, you will study the history of modern computing technology before learning about modern computer architecture and a number of its essential features, including instruction sets, processor arithmetic and control, the Von Neumann architecture, pipelining, memory management, storage, and other input/output topics.
4. The course will conclude with a look at the recent switch from sequential processing to parallel processing by looking at the parallel computing models and their programming implications.

**Course Outcomes: PC Architecture**

On successful completion of course student will:

- CO-1. Explain digital logic and its use in digital systems.
- CO-2. Understand machine level representation of data.
- CO-3. Understand assembly level machine organization.
- CO-4. Describe memory system organization and architecture.
- CO-5. Describe interfacing and communication.
- CO-6. Understand technical literature on computer systems.
- CO-7. Analyze a computer system's expected performance.

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**M.Sc. II year - Semester IV**  
**Paper - V**  
**Code No. PEI 405**  
**Instrumentation for Measurement, Control,**  
**Data Acquisition And Data Transmission**

**Course Objective: Instrumentation for Measurement, Control, Data Acquisition  
And Data Transmission**

Successful completion of the course will enable the students to:

1. Understand the principles of operation and limitations of common measuring instruments.
2. Model instruments and their operating conditions to use the instruments correctly.
3. Design and use signal conditioning devices.
4. Gain awareness of economical and societal aspects of instrumentation systems and communication of data.

**Course Outcomes: Instrumentation for Measurement, Control, Data Acquisition  
And Data Transmission**

On successful completion of course student will:

- CO-1. Understand the Classification of transducers - Active and Passive transducers, Electrical transducers, Displacement transducers, Digital transducers.
- CO-2. Understand the operation of strain gauge, Types of strain gauges, Strain gauge circuits, Calibration of strains gauges. Strain gauge load cell.
- CO-3. Categorise the different kinds of Temperature, Pressure measurement devices and apply them in various electronic devices.
- CO-4. Analyze the different types of flow meters like Head type flow meters-Orifice meter, Venturi Tube, Pitot tube, Rotameter, Anemometer, Electromagnetic flow meter - Ultrasonic flow meter.
- CO-5. Understand open loop control & closed loop control systems.
- CO-6. Gain the knowledge on working of dc and ac servomotors and use them in applications requiring precise position control.

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*Khaleequl Hasan*  
Chairman BOS, Dept. of Physics  
**ANWAR-UL-ULOOM COLLEGE**  
Mallepally, Hyderabad-500 001.

**ANWARUL ULOOM COLLEGE  
AUTONOMOUS  
ACCREDITED BY NAAC WITH 'A' GRADE  
NEW MALLEPALLY HYDERABAD  
POLITICAL SCIENCE  
BA [EPP] & [HPML]**

**2017-18**

<b>PROGRAMME OBJECTIVE (GENERAL)</b>
1. It makes the students learn their role & responsibilities
2. The study of Political Science is gaining more significance as the society and political system grows more and more complex.
3. Allows better understanding of political conditions and trends and functioning of the government across the globe.
4. The objective is to provide knowledge related to culture & civilization & development of Social behavior.
5. The department of political science is one of the oldest departments of our college.
<b>PROGRAMME OUTCOMES (GENERAL)</b>
PO -1. Get familiar with the origin, evolution & core value of the subject which can be put to use in their day today life.
PO -2. Students will learn their role & responsibilities in the society & can take active part in the existing political system.
PO -3. Students will be exposed to the International politics & political issues by a course study of I.R.
PO -4. The course offers a number of job oriented courses which ensure the students to their career as a lawyer, collector, political leader, teacher lecturer etc.
PO -5. Students will be able to discuss & debate the changing trends of Indian political system.
<b>PROGRAMME SPECIFIC OUTCOMES</b>
1. Serve as a politician
2. Makes students to go for higher studies and take up research.
3. Serve as a political party member, political adviser & a good citizen of India.

4. Work in elections & political as well as administrative system.
5. This is the most appropriate combination for the public service examination.

**Course Objective- Paper- I POLITICAL SCIENCE- THEORIES AND APPROACHES**

1. Students will be able to analyze what Political Science is, along with its evolution and scope.
2. Understands various approaches to study political science like Marxist, liberal and behavioral approach.
3. Students will be able to evaluate relationship of political science with other social sciences.
4. Students will understand the theories of state ( origin, nature, function), also evaluate social contract, evolutionary & divine origin theory
5. Students will undertake research to understand various ideologies like individualism, socialism and Marxism.

**Course Objective- Paper- II POLITICAL SCIENCE- CONCEPTS AND INSTITUTIONS**

1. Students will analyze various institutions such as nation and state.
2. Students will examine the idea of power and authority.
3. Students will understand concepts such as liberty, equality and justice that acts as core to the study of political science.
4. Students will critically examine the differences and similarities between various forms of governments.
5. Students will study about various organs of government, along with its functions, structure and composition.

**Course Objective- Paper- III INDIAN GOVERNMENT AND POLITICS [UNION GOVT]**

1. Students will analyze the emergence of National Movement & inspire by the struggle for freedom.
2. Students will assess the status of fundamental rights of Indian citizens.
3. Students will understand the significance of Indian Constitution & role of Constituent Assembly.
4. Students will be able to express their views on independence & partition.
5. They also come to know the role & importance of a Democratic society.

**Course Objective- Paper- IV INDIAN GOVERNMENT AND POLITICS [STATE GOVT]**

1. Students will learn about the important political institutions of state government (Governor, C.M, State Council of Minister, and State Legislature).
2. Students will understand the historical process, agencies & social forces that contributed to the formation of Telangana State.
3. Students also analyze the significance & composition of High Court.
4. Students will develop the deeper understanding of services of the local self institutions in India.
5. They will assess the nature of Indian Federalism with focus on union – state relations.

**Course Objective- Paper- V A ANCIENT INDIAN POLITICAL THOUGHT**

1. Students will evaluate the ancient Hindu Social Order.
2. Students will assess the core Gandhian philosophical ideas as a part of Indian Nationalist Political Thought.
3. Modern Indian thought will help the students to understand various concepts by Nehru, Ambedkar & J.P Narayan.
4. Students will analyze socio- religious reform movement's of 19th century to eradicate the evils of Indian society & ideology of the reformers.
5. Students will come to know about the contemporary conditions of the ancient Indian society through the writings of Kautilya, Manu & Buddha etc.

**Course Objective- Paper- V B INTERNATIONAL RELATIONS**

1. Students will, demonstrate understanding of the relations between & amongst the nations.
2. Students learn about the sovereign state system, World War 1, World War 2 & its impact on I.R.
3. Students will come up with their opinion regarding Colonialism, De- colonization & Neo- colonialism.
4. Students critically examine the emergence of third world.
5. Scope, significance & meaning of the International Relations will also be thought to them.

**Course Objective- Paper- VI A WESTERN POLITICAL THOUGHT**

1. Students will easily understand the Greek political thoughts.
2. They will be able to evaluate the relevance of Plato's ideas on justice, education, communism & the most important theory of ideal state.
3. They will learn the ancient thoughts of Aristotle on revolution, slavery & forms of government.
4. Students will understand the medieval thoughts of thinkers like Aquinas & Machiavelli.
5. Their study theories of law, views on church-State & State craft.

**Course Objective- Paper- VI B INTERNATIONAL RELATIONS**

1. Students will understand the meaning of international organizations with special reference to UNO, its structure.
2. Students will analyze the concept of Arm race, Arm control & disarmament.
3. They will analyze the features & determinants of India's Foreign Policy.
4. They will understand the history & evolution of Non-Alignment Movement.
5. Students understand the concept of region, regionalism, and regional organizations like SAARC, ASEAN, and BRICS.

**Course Outcome- Paper- I POLITICAL SCIENCE- THEORIES AND APPROACHES**

1. Students acquired knowledge about Political Science, it's evolution and broad scope.
2. Students came to know about various approaches to study political science.
3. Students were able to analyze the relationship of political science with major social sciences.
4. Students analyzed the importance theories regarding origin of state.
5. Students evaluated various ideologies and how they were used throughout the world.

**Course Outcome- Paper- II POLITICAL SCIENCE-CONCEPTS AND INSTITUTIONS**

1. Students understood the meaning of major concepts of political science such as nation, state, sovereignty and it's theories.
2. They were able to evaluate the concepts such as law, power and authority.
3. They learnt the ideas from french revolution- liberty, equality and rights.
4. Students understood the meaning of democracy, it's types and compared those with

different states.

5. They studied important institutions- legislature, executive and judiciary. their composition and functions.

**Course Outcome- Paper- III INDIAN GOVERNMENT AND POLITICS [UNION GOVT]**

1. Students analyzed the features, importance & Directives Principles of State Policy.
2. Students analyzed the important political institutions of the Indian Union.
3. They learnt about the powers & functions of President, v. president, P.M. (Council of Ministers Parliament).
4. Students realized the status of highest judicial organization in India.
5. Also come to know about its composition, powers & functions.

**Course Outcome- Paper- IV INDIAN GOVERNMENT AND POLITICS [STATE GOVT]**

1. Students examined the agitations took place in 1969, 1972 & 2001.
2. Students developed the deeper understanding of services of the local self institutions in India.
3. They assessed the nature of Indian Federalism with focus on union – state relations.
4. Students understood the historical process, agencies & social forces that contributed to the formation of Telangana State.
5. Students also analyzed the significance & composition of High Court.

**Course Outcome- Paper- V A ANCIENT INDIAN THOUGHT**

1. Students evaluated the ancient Hindu Social Order.
2. Students assessed the core Gandhian philosophical ideas as a part of Indian Nationalist Political Thought.
3. Modern Indian thought helped the students to understand various concepts by Nehru, Ambedkar & J.P Narayan.
4. Students analyzed socio- religious reform movement's of 19th century to eradicate the evils of Indian society & ideology of the reformers.
5. Students came to know about the contemporary conditions of the ancient Indian society through the writings of Kautilya, Manu & Buddha etc.

**Course Outcome- Paper- V B INTERNATIONAL RELATIONS**

1. Students studied the effects of Cold War.

2. Student comprehended the functions of all Financial Institutions of the world (World Bank, IMF, WTO, IBRD).
3. They understood the difference between power & authority.
4. They evaluated the concept of Globalization with different dimensions.
5. Students learnt the International economic institutions, their origin & composition.

**Course Outcome- Paper- VI A WESTERN POLITICAL THOUGHT**

1. They studied theories of law, views on church-State & State craft.
2. Students acknowledged the contributions of Greek political thoughts.
3. They are also able to evaluate the relevance of Plato's ideas on justice, education, communism & the most important theory of ideal state.
4. They learnt the ancient thoughts of Aristotle on revolution, slavery & forms of government.
5. Students understood the medieval thoughts of thinkers like Aquinas & Machiavelli.

**Course Outcome- Paper- VI B INTERNATIONAL RELATIONS**

1. Students understood the concept of region, regionalism, regional organizations like SAARC, ASEAN, BRICS
2. Students recognized the meaning of international organizations with special reference to UNO, its structure.
3. Students analyzed the concept of Arm race, Arm control & disarmament.
4. They analyzed the features & determinants of India's Foreign Policy.
5. They were able to appreciate the history & evolution of Non-Alignment Movement.



**HOD**

**HEAD**  
**DEPT. OF POLITICAL SCIENCE**  
**ANWARUL-ULOOM COLLEGE (AUTONOMOUS)**  
**HYDERABAD**

Department: **PUBLIC ADMINISTRATION**

Year: **2017-18**

Programme: **BA [EPP]**

**Programme Objective (General)**

1. The department of public administration teaches students about social, political, economic & cultural issues of the times.
2. It endeavors in understanding the "PUBLIC" in a globalized world.
3. It emphasizes on concept & administrative theory.
4. Students learn the new changing issues of governance & administration

**Programme Outcomes (General)**

- PO -1. The dept focus to introduce and develop knowledge of institutions, organizations, practices, concepts and theories.
- PO -2. Allows better understanding of administrative conditions and trends and functioning of the government across the globe.
- PO -3. The objective is to provide knowledge related to culture & civilization & development of social behavior.
- PO -4. Improves thinking skills & prepare them to participate competently.
- PO -5. Programme provides the base to be the responsible Citizen.

**Programme Specific Outcomes**

1. Serve as a politician
2. Work as a teacher in colleges, schools & high schools.
3. Serve as a political party member, political adviser & a good citizen of India.
4. Work in elections & political as well as administrative system.
5. Can serve in various departments like forest and archaeological departments as conservator.

**Course Objective- Paper- I BASICS OF PUBLIC ADMINISTRATION**

1. Students will learn the meaning, importance, scope and evolution of public administration.
2. Students will be able to comprehend the changing paradigms of public administration.
3. Students will understand the nature of public administration.



4. Students will understand the strong relationship between public administration and law.

5. Students will study the relationship between public administration and political science.

### **Course Objective- Paper- II CONCEPTS AND PRINCIPLES OF PUBLIC ADMINISTRATION**

1. Students will appreciate the nature scope and changing patterns of public administration.

2. Students will demonstrate the knowledge about comparative administration and development administration.

3. Students will be able to evaluate the organizational process and principles such as hierarchy, span of control, coordination, and division of work and unity of command.

4. Students will understand the synthesizing nature of knowledge of public administration from public perspective.

5. Students will grasp the administrative theories, concepts and principles to make sense of administrative practice.

### **Course Objective- Paper- III INDIAN ADMINISTRATION**

1. Students will evaluate the function and the role of other offices in union administration.

2. Students will assess the latest trend in Centre state relations.

3. Students will analyze the legislative, administrative and financial relations between Centre and state.

4. Students will understand the working of Central personnel agencies all India services.

5. Students will analyze the role and powers of Union public service commission.

### **Course Objective- Paper- IV STATE ADMINISTRATION**

1. Students will analyze the administrative history of Telangana.

2. Students will be able to analyze the state level political executive i.e. Governor and Chief Minister.

3. Students will understand the discern that connects and disconnects between structure, purpose, process and results in Indian administration.

4. Students will assess the nature of local governance and district administration in Telangana.
5. Students will understand the functioning of state secretariat and various directorates

**Course Objective- Paper- V A MANAGEMENT OF RESOURCE**

1. Students will understand the meaning, nature and scope of Human resource management.
2. Students will understand importance of Human resource management.
3. Students will demonstrate the understanding of human resource strategy and planning.
4. Students will be able to understand the changing paradigms of resource management.
5. Students will analyze the process of recruitment, selection, appointment and promotion

**Course Objective- Paper- V B OFFICE MANAGEMENT**

1. Students will demonstrate the understanding of nature, scope and importance of office administration.
2. Students will critically analyze the basic principles of office management.
3. Students will be able to understand the challenges of public office administration the background of ICT.
4. Students will understand the forms of management and control
5. Students will assess the office environment

**Course Objective- Paper- VI A MANAGEMENT OF RESOURCE**

1. Students will analyze the meaning scope and importance of financial management.
2. Students will demonstrate knowledge of how the public power is exercised in public resources is managed in expanded.
3. Students will critically evaluate the execution of budget.
4. Students understand the concept and principles of budgeting
5. They will study the preparation and enactment of budget.

**Course Objective- Paper- VI B OFFICE MANAGEMENT**

1. Students will understand the concept of work study work measurement and work simplification.
2. Students will understand the idea of management by objectives.

3. Students will understand the concept of supervision.
4. Students will understand the meaning of staff welfare.
5. Students will analyze the importance and some important staff welfare measures.

**Course Outcome- Paper- I BASICS OF PUBLIC ADMINISTRATION**

1. Students will understand how public administration is related to economics and psychology.
2. Students are exposed to different approaches of Kautilya.
3. Students study the approaches given by Taylor, Henry Fayol, Weber etc.
4. Students will evaluate the different approaches such as Oriental, classical, scientific and bureaucratic approaches.
5. Students will analyze the idea of various thinkers and the concepts of social psychology approaches.

**Course Outcome- Paper- II CONCEPTS AND PRINCIPLES OF PUBLIC ADMINISTRATION**

1. Students will critically evaluate the principle of line and staff agencies, leadership and communication.
2. Students will analyze the idea of New Public administration.
3. Students will be able to understand minnow brook conference I, II, III.
4. Students will evaluate the concept of new public management.
5. Students will critically evaluate the role of public services in emergence and development of new Telangana state.

**Course Outcome- Paper- III INDIAN ADMINISTRATION**

6. Students will understand historical evolution and socio-economic, political, cultural and global context of Indian administration.
7. Students will be able to describe the post independence Indian administration.
8. Students will be able to understand the transformative role of Indian administration.
9. Students will analyze the role of central level political executive i.e. President, Prime Minister and Council of Ministers.
10. Students will understand the working of central secretariat.

**Course Outcome- Paper- IV STATE ADMINISTRATION**

1. Students will understand the Indian administration's role as the main instrument of

state to achieve its developmental goals.

2. Students will understand the significance of administrative reforms and its need
3. Students develop a deeper understanding of second administrative reforms commission and its recommendations.
4. Students will understand the concept of e-government.
5. Students will analyze the importance of values and ethics in administration

#### **Course Outcome- Paper- V A MANAGEMENT OF RESOURCE**

1. Students will understand the components of pay, principles of pay and pay commissions.
2. Students will understand the concept of performance appraisal, reward and incentives management
3. Students will analyze the idea of human resource development.
4. Students will critically examine the concept of training its objectives, types and evaluation.
5. Students will analyze the institutional capacity building strategies and programmes.

#### **Course Outcome- Paper- V B OFFICE MANAGEMENT**

1. Student will be able to make office planning and layouts.
2. Students will discuss the methods of managing the office records.
3. Students will comprehend the administrative process in office
4. Students will analyze the maintenance of office stationery.
5. Students will understand the impact of technology in office administration.

#### **Course Outcome- Paper- VI A MANAGEMENT OF RESOURCE**

1. Students will analyze the organization and functions of finance ministry.
2. Students will examine the role of finance ministry in managing resources.
3. Students will evaluate the role of finance commission in Centre state relations.
4. Students in this unit will analyze functioning of public accounts committee, estimates committee and committee on public undertakings.
5. Students will critically evaluate the role of the comptroller and auditor General of India.

**Course Outcome- Paper- VI B OFFICE MANAGEMENT**

1. Students will understand the introduction of social system and public office administration.
2. Students will also analyze the systems approach.
3. Students will examine the basic premises and influence of social factors on public office.
4. Students will understand the objective, introduction and application of management techniques.
5. Students will demonstrate knowledge of the problems in application of management techniques.

*Yi ane*

**HEAD**  
DEPT. OF PUBLIC ADMINISTRATION  
ANWARUL ULOOM COLLEGE  
HYDERABAD.

Anwarul Uloom Degree College  
(An autonomous Muslim minority institution)  
New Mallepally Hyderabad.5000001. T.S India

Affiliated to Osmania University

Department of Telugu.

2017 – 18. Departmental

Programme Objectives and Outcomes.

(పాఠ్యాంశాల ఉద్దేశ్యాలు మరియు సాధించినవి)

Degree 1<sup>st</sup> year (డిగ్రీ మొదటి సంవత్సరం)

Programme Objectives

(పాఠ్యాంశాల ఆధారంగా ఉద్దేశ్యాలు)

1. ప్రాచీన తెలుగు సాహిత్యం లోని కవుల రచనా విధానాన్ని తెలుసుకోవడం.
2. సుభాషితాల ద్వారా విద్యార్థులను నైతిక వర్తన కలిగించడం
3. విద్యార్థులలో విశ్వ మానవ ప్రేమతత్వాన్ని పెంపొందించడం
4. ప్రజల కోసం ప్రజాసంక్షేమం కోసం తమ జీవితాలను పణంగా పెట్టిన నాయకులను స్మరించు కోవడం
5. జ్ఞాపక శక్తిని పెంపొందించుకోవడం.

Programme Out comes,.

(సాధించినవి)

1. ప్రాచీన తెలుగు భాషా సాహిత్య నిర్మాణాల గురించి కవిత్వము వచనాన్ని గురించి తెలుసుకుంటారు నన్నయ రచనలు లక్షణాలైన పుస్తక కథా కవితార్థ యుక్తి, అక్షర రమ్యత నానా రుచిరార్థ సూక్తి అనే వాటిని తెలుసుకుంటారు తెలుగులో ఆదికవిగా నన్నయ్యను గుర్తిస్తారు. పాల్కురికి సోమన దేశీ ఛందస్సు గురించి ప్రాచీన తెలుగు సాహిత్యంలో శైవమత ప్రాధాన్యతను తెలుసుకుంటారు.

2. వీనుగు లక్ష్మణ కవి వ్రాసిన సుభాషిత పద్యాల ద్వారా విద్యార్థులు నైతిక ప్రవర్తన యొక్క ప్రాధాన్యతను తెలుసుకొని తగువిధంగా తమ జీవితాలను దిద్దుకొని సమాజంలో మంచి పౌరులుగా ఎదుగుతారు.

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Department of Telugu.

2017 – 18. Departmental

Programme Objectives and Outcomes.

(పాఠ్యాంశాల ఉద్దేశ్యాలు మరియు సాదించినవి)

Degree 2nd year (డీగ్రీ రెండవ సంవత్సరం)

Departmental Program Objective's and Outcomes.

డీగ్రీ రెండవ సంవత్సరం తెలుగు ద్వితీయ భాష పాఠ్య ప్రణాళికల ఆధారంగా ఉద్దేశ్యాలు ఫలితాలు.

Program objectives: (ఉద్దేశ్యాలు):--

1. విద్యార్థులు చక్కని సంభాషణ నైపుణ్యాన్ని పెంపొందించుకోవడం గురించి.
2. విద్యార్థులు చెడు లక్షణాలకు దూరంగా ఉండడం
3. విద్యార్థులకు వ్యవసాయ ప్రాధాన్యతను తెలియజేయడం
4. ప్రాచీన మన వారసత్వ సంపదను సంరక్షించుకోవడం గురించి విద్యార్థులకు అవగాహన కల్పించడం
5. తెలుగు భాషా సాహిత్యాలకు విదేశీయులు చేసిన సేవలు గురించి తెలియచేసి, మాతృభాష గొప్పతనాన్ని విద్యార్థుల్లో పెంపొందించడం.

Program outcomes: లక్ష్యాల సాధన:--

1. శ్రీకృష్ణుని సంధి కి పంపే సందర్భంలో ధర్మరాజు మాటలలో చక్కని నైపుణ్య మైన సంభాషణ దాతుర్యం కనిపిస్తోంది. ఎవరి పట్ల నైనా ద్వేషము, కోపము, అసహనము, పగ అనే విషయాలు. మంచివి కావు అని చెప్పడం. ముఖ్యంగా శత్రువుల తో సంధి చేసుకునే సందర్భంలో హింసాత్మకమైన మాటలు చేతలు సరైనవి కావు అని ధర్మరాజు పలుకుతాడు ఈ లక్షణాలు విద్యార్థుల్లో రాబట్టవచ్చు.

విద్యార్థులు తెలుగు భాషకు విదేశీయులు చేసిన సేవలను గుర్తించి మాతృభాష ఔన్నత్యాన్ని తెలుసుకుని దీని పట్ల గౌరవ భావాన్ని కలిగి తమ వంతు పాత్ర గా భాషా సాహిత్యాల అభివృద్ధిలో పాలుపంచుకుంటారు.

  
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2021



**Program Outcomes**  
**Department of Urdu**  
**Deg 1st Year Sem I**  
**2017-18**

**حصہ نثر و نظم | یونٹ**

اس یونٹ میں طلبا کو محمد قلی قطب شاہ کے حالات زندگی اور ان کی شاعری کے بارے میں سمجھا یا جائیگا۔

طلبا کو محمد قلی قطب شاہ کی نظم کی تشریح سمجھیں گے۔

طلبا کو محمد قلی قطب شاہ اور نظیر اکبر آبادی کی شاعری کی خصوصیات سمجھا نی جائیگی۔

طلبا انشائیہ کے بارے میں پڑھیں گے اور ساتھ ہی انہیں مشتاق احمد یو سفی کا انشائیہ "پڑھنیے اگر بیمار" کا تجزیہ کر وایا جائیگا۔

نظم "توحید" کے ذریعہ اللہ کی واحدانیت کے بارے میں سمجھا یا گیا۔

**نثر و نظم II یونٹ**

طلبا اس یونٹ میں سراج اورنگ آبادی، نظیر اکبر آبادی کی حالات زندگی اور ان کی شاعری کی خصوصیات کو سمجھیں گے۔

طلبا کو "حکایت" کے بارے میں وضاحت دی جائیگی۔ اور ساتھ ہی "حکایت سعادی" کے بارے میں سمجھا یا جائیگا۔

طلبا "افسانہ" کی تعریف اور تاریخ کے بارے میں پڑھیں گے۔

افسانہ "یہ غازی تیرے پر اسرار بندے" کے بارے میں طلبا کو سمجھا یا جائیگا۔

سراج اورنگ آبادی کی غزل گونی کے بارے میں طلبا کو سمجھا یا گیا۔

**حصہ نثر و نظم III یونٹ**

طلبا اس یونٹ میں شاعر "میر تقی میر" کی حالات زندگی کا تجزیہ کریں گے۔

میر تقی میر کی دو غزلوں کی تشریح کو طلبا سمجھیں گے۔

طلبا کو اردو میں سفر نامے کے آغاز و ارتقاء کے بارے میں سمجھا یا جائیگا۔

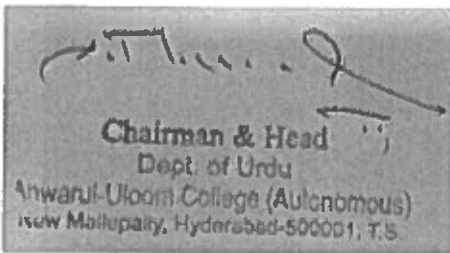
طلبا مشہور شاعر "شاد تمکنت" کے حالات زندگی کا مطالعہ کریں گے اور نظم "اب کے برس" کا مطالعہ کریں گے۔

**حصہ نثر و نظم IV یونٹ**

طلبا الطاف حسین حالی کی دو غزلوں کا جائزہ لیں گے۔

طلبا کو اس یونٹ میں شامل الطاف حسین حالی کی دو غزلوں کی تشریح سمجھائی جائیگی۔

طلبا شاعر حافظ جا لندھری کے حالات زندگی کو پڑھیں گے۔



افسانہ کی ابتداء و ارتقا کے بارے میں سمجھا یا گیا۔

### Program Outcomes

### Department of Urdu

### Deg 1st Year Sem II

2017-18

#### حصہ نظم I یونٹ

طلبا کو اس یونٹ میں ولی دکنی کی دو غزلوں کی تشریح سمجھانی جائیگی۔

طلبا اکبر الہ آباد اور شاعر مقدم کے حالات زندگی کا جائزہ لیں گے۔

#### حصہ نظم و نثر II یونٹ

طلبا کو اردو ڈرامہ کی تعریف اور تاریخ واقف کر وایا جائیگا۔

طلبا امتیاز علی تاج اور بیگم قدسیہ کا ڈرامہ "تلاش" کو پڑھیں گے۔

طلبا شاعر آتش کی شاعری کو سمجھیں گے اور ساتھ ہی ان کے حالات زندگی کا جائزہ لیں گے۔

#### حصہ غزل III یونٹ

اس یونٹ میں طلبا کو مرزا اسد اللہ خاں غالب کی دو غزلوں کی وضاحت کی جائیگی۔

طلبا اردو ادب میں فنون لطیفہ کا جائزہ لیں گے۔

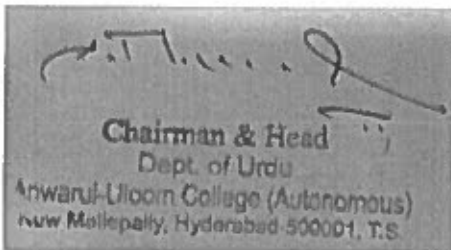
طلبا کو "خاکہ" کی تعریف اور اس کی خصوصیت کے بارے میں سمجھا یا جائیگا۔

خاکہ نگار سلیمان آریب کی حالات زندگی کو طلبا پڑھیں گے۔ اور خاکہ "سلیمان آریب" کا جائزہ لیں گے۔

#### حصہ نظم و نثر IV یونٹ

طلبا مرزا اسد اللہ خاں غالب کی حیات زندگی کا مطالعہ کریں گے۔

طلبا شاعر لدھیانوی کے حالات زندگی اور ان کی شاعری کا جائزہ لیں گے۔



## Program Outcomes

### Department of Urdu

#### Deg 2nd Year Sem III

2017-18

#### حصہ نظم و نثر | یونٹ

طلبا کو اس یونٹ میں حدید اور قدیم مثنوی میں فرق سمجھا یا جائیگا۔

مثنوی "امن نامہ" کا خلاصہ سمجھا یا جائیگا۔

طلبا مشہور شاعر جان نثار اختر، میر انیس کے حالات زندگی کا مطالعہ کریں گے۔

طلبا رپورتاژ کے بارے میں سمجھیں گے۔

#### حصہ نثر و نظم II یونٹ

طلبا کو داستان کی اہمیت اس کی افادیت کے بارے میں سمجھا یا جائیگا۔

طلبا داستان کی خصوصیت کو سمجھیں گے۔ داستان کی ابتداء و ارتقا پر روشنی ڈالی جائیگی۔

اس یونٹ میں طلبا کو "ربا عیات" کی تعریف و تاریخ کے بارے میں سمجھا یا جائیگا۔

طلبا کو شاعر "جگت موہن رواں" اور "ملا وجہی" کے حالات زندگی کے بارے میں آگاہ کیا جائیگا۔

#### نثر و نظم III یونٹ

طلبا صنف قطعہ کے بارے میں سمجھیں گے۔

قطعہ کی تعریف، تاریخ، اور اس اہمیت کے بارے میں طلبا کو سمجھا یا جائیگا۔

طلبا کو شاعر میر انیس کے قطعہ "دنیا بھی عجب سرانے فانی دیکھی" کی تشریح سمجھانی جائیگی۔

انشائیہ کی تعریف سے طلبا کو واقف کر وایا جائیگا۔

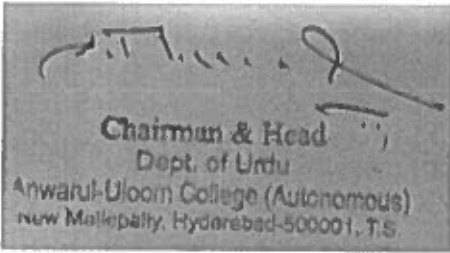
انشائیہ "ذوق چائے نوشی" کو سمجھا یا جائیگا اس کے علاوہ ابوالکلام آزاد کے حالات زندگی کو بیان کیا جائیگا۔

#### نثر و نظم IV یونٹ

اس یونٹ میں طلبا کو اردو میں مضمون نگاری کی تعریف سمجھانی جائیگی۔

قدیم دکنی اردو کی خصوصیات سے طلبا کو واقف کر وایا جائیگا۔

نصیر الدین ہاشمی اور جگت موہن لال رواں کے حالات زندگی کو بیان کیا جائیگا۔



## Program Outcomes

### Department of Urdu

#### Deg 2nd Year Sem IV

2017-18

#### حصہ نظم 1 یونٹ

اس سمسٹر کے یونٹ میں روایتی اور شخصی مرثیہ کے بارے میں طلبا کو سمجھا یا جائیگا۔

الطاف حسین حالی کی حالات زندگی کے بارے میں سمجھا یا جائیگا۔

طلبا کو شخصی مرثیہ "مرثیہ غالب" کے بارے میں سمجھا یا جائیگا۔

طلبا کو "میر تقی میر" کی شاعری اور ان کی غزل کے بارے میں سمجھا یا جائیگا۔

میر تقی میر کی دو غزلیات کی تشریح کی جائیگی۔

طلبا شاعر جو ش ملیحی آبادی کے حالات زندگی کا مطالعہ کریں گے۔ ساتھ ہی ان کی ایک غزل کی تشریح کا بھی جائزہ لیں گے۔

#### حصہ نظم II یونٹ

طلبا کو اس یونٹ میں "نیچرل نظم" تعریف سمجھانی جائیگی۔

طلبا نیچرل نظم "مرغابی" کا خلاصہ سمجھیں گے

طلبا کو شاعر "شوکت علی تھانوی" کی غزل کی تشریح سمجھانی جائیگی۔

#### حصہ نظم III یونٹ

طلبا کو "وطنی نظم" کی تعریف سمجھانی جائیگی اور ساتھ ہی وطنی نظم "خاک بند" کا مطالعہ کر دیا جائیگا۔

طلبا کو شاعر محسن کاکوری، شاعر برج نارائن جکبست کے حالات زندگی کا مطالعہ کر دیا جائیگا۔

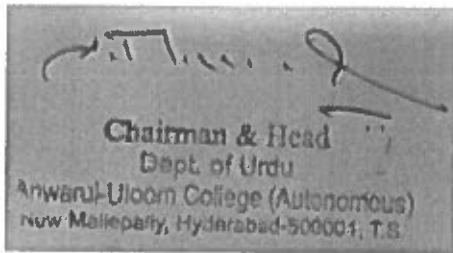
#### حصہ نظم IV یونٹ

طلبا کو "ازاد نظم" کی تعریف اور اس کی خصوصیت سمجھانی جائیگی۔

طلبا کو ازاد نظم "تبوک آواز دے رہا ہے" کی تشریح کر وانی جائیگی۔

طلبا جدید اور روایتی نظم کا جائزہ لیں گے۔

طلبا جدید نظم "دھر تی تیرا مجھ سے روپ" کی تشریح سمجھیں گے۔



## Program Outcomes

Department of Urdu

Deg 3rd Year Sem IV

2017-18

حصہ نثر I یونٹ

طلبا کو فنون لطیفہ کی اہمیت سے واقف کر وایا جائیگا۔

طلبا ادب کی تعریف سمجھیں گے اور افسانہ کی تعریف اور تاریخ کے بارے میں پڑھیں گے۔

حصہ نثر و نظم II یونٹ

طلبا حقیقت اور ادب میں فرق کو محسوس کر یں گے۔

طلبا کو شاعری کی مختلف اصناف کے بارے میں سمجھا یا جائیگا۔

حصہ نثر III یونٹ

اس یونٹ میں طلبا کو داستان کی تعریف و تاریخ کے بارے میں بتلا یا جائیگا

طلبا داستان کے اقسام کو سمجھیں گے

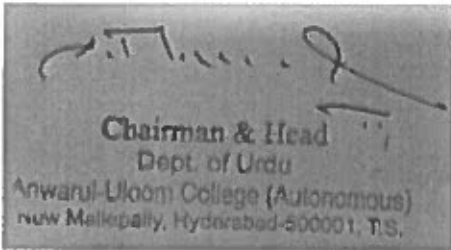
طلبا کو منظوم اور نثری داستان کے فروق کے بارے میں سمجھا یا جائیگا۔

نثر IV یونٹ

طلبا کو ناول کی تعریف و تاریخ سے آگاہ کیا جائیگا

طلبا اردو ادب میں ڈرامہ کا جائزہ لیں گے

طلبا کو ناول اور ڈرامہ میں فرق بھی سمجھا یا جائیگا



## Program Outcomes

### Department of Urdu

### Deg 3rd Year Sem V

2017-18

#### I یونٹ

طلبا کو اردو کی ابتدا و ارتقا کے بارے میں تفصیل سے سمجھا یا جائیگا  
طلبا اس کو بات کو سمجھیں گے کہ اردو زبان کے فروق میں اولیا نے اکرام کا کیا حصہ تھا  
طلبا کو قطب شاہی، عادل شاہی حکومتوں کے قیام کے بارے میں سمجھا یا جائیگا۔  
طلبا قطب شاہی اور عاشاہی دور کے شعراء کی تعریف اور ان کی شعری خصوصیات کے بارے میں پڑھیں گے

#### II یونٹ

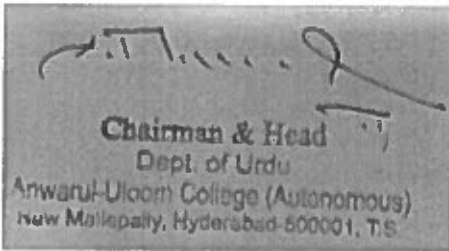
طلبا ولی دکنی کی حالات زندگی کے بارے میں سمجھنے کی کوشش کریں گے  
طلبا کو ولی دکنی اور ان کے معاصرین کے بارے میں پڑھا یا جائے گا۔  
طلبا میر تقی میر اور محمد رفیع سودا کے حالات زندگی کے بارے میں پڑھیں گے اور دونوں شعراء کے دور کے سیاسی حالات کو سمجھیں گے۔  
طلبا کو دبستان دہلی کے شعراء اور ان کی شاعری کی خصوصیات کے بارے میں سمجھا یا جائیگا۔  
طلبا ترقی پسند تحریک کی ابتدا و ارتقا کے بارے میں سمجھیں گے

#### III یونٹ

طلبا دبستان لکھنؤ کے شعراء کی حالات زندگی اور ان کی شاعری کو سمجھیں گے۔  
طلبا کو شاعر اسد اللہ خان غالب اور مومن کی شاعری و ان شعراء کی حالات زندگی سمجھانی جائیگی۔  
طلبا فورٹ ولیم کالج کے قیام اور اس قیام سے اردو ادب کو بونے والے فائدہ کا جائزہ لیں گے۔  
طلبا جدید اور قدیم اردو ادب کا مطالعہ کریں گے۔

#### IV یونٹ

طلبا کو اردو اخبار "اودھ پنچ" کی ادبی خدمات کے بارے میں واقف کر وایا جائیگا۔  
طلبا دلی کالج اور علی گڑھ تحریک کے بارے میں مطالعہ کریں گے۔  
طلبا سرسید احمد خاں کی زندگی کا مطالعہ کریں گے اور ان کے رفقا کے بارے میں تفصیل سے پڑھیں گے۔  
دلی کالج کا قیام اور اردو زبان کی ترقی و ترویج کا طبا جائزہ لیں گے۔



**Specific Outcomes**  
**Department of Urdu**  
**Deg 1st Year Sem I**  
**2017-18**

حصہ نثر و نظم | یونٹ

نثر و نظم II یونٹ

طلبا اس یونٹ میں سراج اورنگ آبادی، نظیر اکبر آباد کی حالات زندگی اور ان کی شاعری کی خصوصیات کو سمجھیں گے۔

طلبا کو "حکایت" کے بارے میں وضاحت دی جائیگی۔ اور ساتھ ہی "حکایت سعادی" کے بارے میں سمجھا یا جائیگا۔

طلبا "افسانہ" کی تعریف اور تاریخ کے بارے میں پڑھیں گے۔

افسانہ "یہ غازی" کے بارے میں اسرار بندے" کے بارے میں طلبا کو سمجھا یا جائیگا۔

سراج اورنگ آبادی کی غزل گوئی کے بارے میں طلبا کو سمجھا یا گیا۔

حصہ نثر و نظم III یونٹ

طلبا اس یونٹ میں شاعر "میر تقی میر" کی حالات زندگی کا تجزیہ کریں گے۔

میر تقی میر کی دو غزلوں کی تشریحی کو طلبا سمجھیں گے۔

طلبا کو اردو میں ستر نامے کے آغاز و ارتقاء کے بارے میں سمجھا یا جائیگا۔

طلبا مشہور شاعر "شاد تمکنت" کے حالات زندگی کا مطالعہ کریں گے اور نظم "اب کے برس" کا مطالعہ کریں گے۔

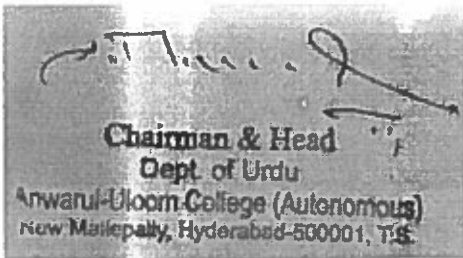
حصہ نثر و نظم IV یونٹ

طلبا الطاف حسین حالی کی دو غزلوں کا جائزہ لیں گے۔

طلبا کو اس یونٹ میں شامل الطاف حسین حالی کی دو غزلوں کی تشریح سمجھانی جائیگی۔

طلبا شاعر حافظ جالندھری کے حالات زندگی کو پڑھیں گے۔

افسانہ کی ابتداء و ارتقاء کے بارے میں سمجھا یا گیا۔



## Specific Outcomes

Department of Urdu

Deg 1st Year Sem II

2017-18

حصہ نظم | یونٹ

حصہ غزل III یونٹ

اس یونٹ میں طلباء کو مرزا اسد اللہ خاں غالب کی دو غزلوں کی وضاحت کی جائیگی۔

طلباء اردو ادب میں فنون لطیفہ کا جائزہ لیں گے۔

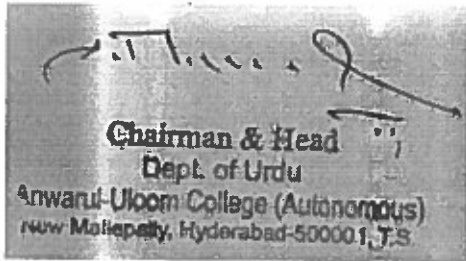
طلباء کو "خاکہ" کی تعریف اور اس کی خصوصیت کے بارے میں سمجھا یا جائیگا۔

خاکہ نگار سلیمان اربیب کی حالات زندگی کو طلباء پڑھیں گے۔ اور خاکہ "سلیمان اربیب" کا جائزہ لیں گے۔

حصہ نظم و نثر IV یونٹ

طلباء مرزا اسد اللہ خاں غالب کی حیات زندگی کا مطالعہ کریں گے۔

طلباء شاعر ادھیانوی کے حالات زندگی اور ان کی شاعری کا جائزہ لیں گے۔





## Specific Outcomes

Department of Urdu

Deg 2nd Year Sem III

2017-18

حصہ نظم و نثر I یونٹ

نثر و نظم III یونٹ

طلبا صنف قطعات کے بارے میں سمجھیں گے۔

قطعات کی تعریف، تاریخ، اور اس اہمیت کے بارے میں طلبا کو سمجھا یا جائیگا۔

طلبا کو شاعر میر امین کے قطعہ "دنیا بھی عجب سرانے فانی دیکھی" کی تشریح سمجھانی جائیگی۔

انشائیہ کی تعریف سے طلبا کو واقف کر وایا جائیگا۔

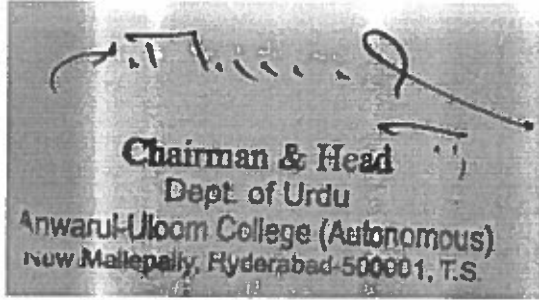
انشائیہ "ذوق چائے نوشی" کو سمجھا یا جائیگا اس کے علاوہ ابوالکلام آزاد کے حالات زندگی کو بیان کیا جائیگا۔

نثر و نظم IV یونٹ

اس یونٹ میں طلبا کو اردو میں مضمون نگاری کی تعریف سمجھانی جائیگی۔

قدیم دکنی اردو کی خصوصیات سے طلبا کو واقف کر ویا جائیگا۔

نصیر الدین ہاشمی اور جگت موہن لال روار کے حالات زندگی کو بیان کیا جائیگا۔



## Specific Outcomes

Department of Urdu

Deg 2nd Year Sem IV

2017-18

حصہ نظم 1 یونٹ

حصہ نظم III یونٹ

طلبا کو "وطنی نظم" کی تعریف سمجھانی جائیگی اور ساتھ ہی وطنی نظم "خاک ہند" کا مطالعہ کر ویا جائیگا۔

طلبا کو شاعر محسن کاکوری، شاعر برج نارائن جکبست کے حالات زندگی کا مطالعہ کر وایا جائیگا۔

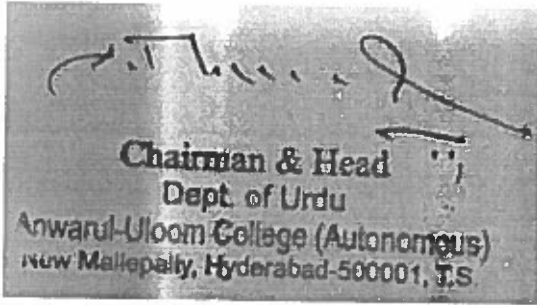
حصہ نظم IV یونٹ

طلبا کو "آزاد نظم" کی تعریف اور اس کی خصوصیت سمجھانی جائیگی۔

طلبا کو آزاد نظم "توک آواز دے رہا ہے" کی تشریح کر وانی جائیگی۔

طلبا جدید اور روایتی نظم کا جائزہ لیں گے۔

طلبا جدید نظم "دھر تی تیرا مجھ سے روپ" کی تشریح سمجھیں گے۔



## Specific Outcomes

Department of Urdu

Deg 3rd Year Sem IV

2017-18

حصہ نثر I یونٹ

طلبا کو فنون لطیفہ کی اہمیت سے واقف کر وایا جائیگا۔

طلبا ادب کی تعریف سمجھیں گے اور افسانہ کی تعریف اور تاریخ کے بارے میں پڑھیں گے۔

حصہ نثر II یونٹ

طلبا حقیقت اور ادب میں فرق کو محسوس کر یں گے۔

طلبا کو شاعری کی مختلف اصناف کے بارے میں سمجھا یا جائیگا۔

حصہ نثر III یونٹ

اس یونٹ میں طلبا کو داستان کی تعریف و تاریخ کے بارے میں بتلا یا جائیگا

طلبا داستان کے اقسام کو سمجھیں گے

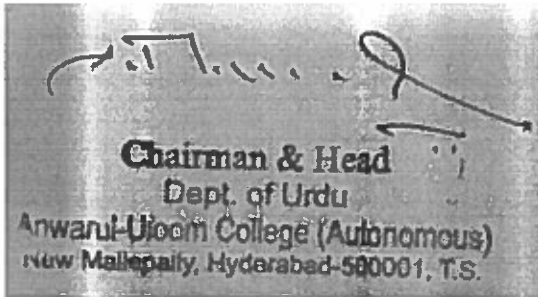
طلبا کو منظوم اور نثری داستان کے فروق کے بارے میں سمجھا یا جائیگا۔

نثر IV یونٹ

طلبا کو ناول کی تعریف و تاریخ سے آگاہ کیا جائیگا

طلبا اردو ادب میں ناول کا جائزہ لیں گے

طلبا کو ناول اور نثر میں فرق بھی سمجھا یا جائیگا



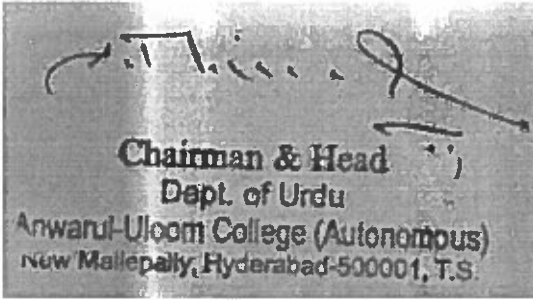
## Specific Outcomes

Department of Urdu

Deg 3rd Year Sem V

2017-18

- طلبا دبستان لکھنور کے شعراء کی حالات زندگی اور ان کی شاعری کو سمجھیں گے۔
- طلبا کو شاعر اسد اللہ خان غالب اور مومن کی شاعری و ان شعراء کی حالات زندگی سمجھانی جائیگی۔
- طلبا فورٹ ولیم کالج کے قیام اور اس قیام سے اردو ادب کو ہونے والے فائدہ کا جائزہ لیں گے۔
- طلبا جدید اور قدیم اردو ادب کا مطالعہ کریں گے۔
- طلبا کو اردو اخبار "اوندھ پنچ" کی ادبی خدمات کے بارے میں واقف کر وایا جائیگا۔
- طلبا دلی کالج اور ملی گڑھ تحریک کے بارے میں مطالعہ کریں گے۔
- طلبا سرسید احمد خاں کی زندگی کا مطالعہ کریں گے اور ان کے رفقا کے بارے میں تفصیل سے پڑھیں گے۔
- دلی کالج کا قیام اور اردو زبان کی ترقی و ترویج کا طلبا جائزہ لیں گے۔





# ANWARUL ULOOM COLLEGE (AUTONOMOUS)

(Accredited by NAAC with 'A' Grade & An ISO 9001:2015 Certified  
Institution)

(Affiliated to Osmania University, Hyderabad)

**Department:** Zoology


**Programme:** B.Sc. (2017-2018)

### Programme Objective:

1. Understanding the field of zoology and its different aspects.
2. Ecology, evolution, wildlife and habitat conservation.
3. Laboratory techniques, specimen observation and preparation.
4. Economic importance of certain animals and livestock farming.

### Programme Outcomes:

1. Analyse complex interactions among the various animals of different phyla, their distribution and their relationship with the environment.
2. Understanding of environmental conservation processes and its importance, pollution, control and biodiversity and protection of endangered species.
3. Develop empathy and love towards the animals. Demonstrated a broad understood of animal diversity, including knowledge of the scientific classification and evolutionary relationships of major groups of animals.
4. To understand the applied biological sciences or economic Zoology such as sericulture, apiculture, aquaculture, Industrial microbiology, rDNA technology and medicine for their career opportunities.

  
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(Affiliated to Osmania University, Hyderabad)

## Programme Specific Outcomes:

1. Understand animal interactions with the environment and identify the major groups of organisms with an emphasis on animals and classify them within a phylogenetic framework.
2. Explain the origin of life with context to the origin of eukaryotic cell and endosymbiotic theory of origin., fossil records, Darwinism and Neo-Darwinism, experimental evidences.
3. Perform procedures as per laboratory standards in the areas of taxonomy, physiology, ecology, cell biology, genetics, applied zoology, clinical science, tools and techniques of zoology, toxicology, entomology, nematology, sericulture, biochemistry, fish biology, animal biotechnology, immunology and research methodology.
4. Ability to connect and apply biological knowledge to other disciplines and to integrate knowledge into their personal and professional lives.

## Course Outcomes: Semester – I Animal Diversity – Invertebrates.

1. To classify Phylum Porifera with taxonomic Keys.
2. To describe the Phylum Coelenterata and its Polymorphism.
3. To identify the given Mollusca with respect to economic importance.
4. To describe general characters of Nematelminths and their parasitic adaptation.
5. To explain classification of protozoa and diseases caused by them.
6. To explain general characters of Arthropoda and metamorphosis in insects.

  
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**Course Outcomes: Semester – II Ecology, Zoogeography and Animal Behaviour.**

1. To Describe Environmental Pollution and its control measures.
2. To understand methods of wildlife and conservation and endangered species.
3. To describe Innate and Acquired types of behaviour.
4. To identify Zoogeographical regions with their climatic and faunal peculiarities.

**Course Outcomes: Semester – III Biology of Chordates and Embryology.**

1. Understand the evolutionary history and relationship between the different classes of chordates.
2. Know the different characteristics along with their habits, habitats and distribution of the chordates.
3. Understand the significance of the differences in physiological systems between the vertebrates.
4. Distinguish the significance of the chordates from other lower organisms and comprehend their advantages.
5. This course will help the students to understand the development of multicellular organisms from a single cell zygote.
6. Students will be able to appreciate the mechanisms that support growth and development.
7. They will learn interesting and unique post embryonic development that happens in other animals.
8. It will help them to understand the concept of aging and the relevance of this knowledge in several medical applications.

  
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**Course Outcomes: Semester – IV Biology of Chordates II. Ecology, Evolution and Zoogeography.**

1. To describe environmental pollution and its control measures
2. To understand methods of wildlife and conservation and endangered species.
3. To describe Innate and Acquired types of behavior.
4. To identify Zoogeographical regions with their climatic and faunal peculiarities.

**Course Outcomes: Semester – V Animal Physiology, Genetics and Evolution.**

1. To describe the types of Digestion.
2. To explain the process of carbohydrates, protein, lipid digestion.
3. To describe the structure of mammalian lungs.
4. To describe the mammalian heart and its functioning.
5. How are the animals classified on the basis of excretion of nitrogenous waste products.
6. To describe Sliding Filament theory of muscle contraction.
7. The skills required to plan, carry out, and evaluate the outcomes of genetic experiments in animal model systems.
8. Develop the necessary communication skills in the discipline required for Oral presentations of research results, and poster presentations at conferences etc.
9. Gain knowledge about the relationship of the evolution of various species and the environment they live in.

  
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# ANWARUL ULOOM COLLEGE (AUTONOMOUS)

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(Affiliated to Osmania University, Hyderabad)

## Course Outcomes: Semester – VI Applied Zoology.

1. Gain knowledge to define the concepts of the applied subjects like Fisheries, Aquaculture and Pest Control.
2. The student will be able to identify, freshwater, marine water fishes.
3. Gain knowledge to explain the tools and techniques used in aquaculture and agricultural practices.
4. The student will be able to describe the fish species commonly used in fishery business.
5. Describe the common agricultural pests from nearby area.
6. Illustrate the diseases in aquaculture and agriculture.
7. Classify freshwater and Marine water fishes.
8. Categorize economically important fish species.

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