Course outcome

B.Sc(computer science)

I Semester **C Language** **Sub code:**

Outcomes

- Students Will able to develop applications.
- Students Can get exposure to problem solving through Programming.
- They trained to the basic concepts of the C- Programming Languages
- This involves lab which is designed a to give the students hands-on experience with the concepts.

Semester II

Object oriented Programming in C++ **Sub.code:**

Outcomes:

- Students Can Learn he Fundamental programming Concepts and methodologies Which are essential to building good program C++ programs.
- Students will be trained to code, document, test and implement Well Structured, robust computer program using the C++ programming Language and also to Write reusable modules.

B.Sc. computer Science

Data structure **Subcode:**

Outcomes:

- Students can understand the baute Concepts of data structure.
- To understand concepts about searching and sorting techniques, how data are stored into which order like queues, lists and Graphs.
- To Get knowledge about solving Problems with the help of Fundamental data Structure.

Visualbasics **Sub. code:**

Outcomes:

- Students list the Concepts Visual Programming
- Students code visual program by using visual basic Work environment.
- Students Prepare various projects by helping visual programming.

Computer Architecture. **Subcode:**

OUTCOMES

- To Learn about Multi-Processors and Multi-computers, Performance metrics and measures.
- Super scalar and vector processors cache memory organisation, Superscalar pipeline design, multithread architecture, Data Flow Computer, static and dynamic, Flow.

BIG DATA ANALYTIC **Sub. code:**

Outcomes

- Students Learning Outcomes are designed to specify what the Students will be able to perform after completion of thiscourse.
- Ability to identify the Characteristics of datasets and Compare the trivial data and Big data for applications.

B.Sc (Computer Science)

IV Semester

Programming In JAVA **Sub. Code:**

Outcomes:

* Students can design desktop and web applications using object-oriented designs with JAVA.

* Students can get Sound knowledge aboutinheritance and dynamic binding, exception handling in JAVA applications

* They can develop web applications Using Applets.

Data Base Management system **Sub.code:**

Outcomes

- Students Can get knowledge about the Fundamental elements of relational database management systems.
- They can be Familiar with basic database Storage structure and access techniques: File and Page organizations, indexing methods.

Machine Learning **Sub. code:**

Outcomes:

- Understand wide variety oflearning algorithms.

- Understand how to evaluate models generated from data.

- Understand, optimize the models Learned and report on the Expected accuracy that can be achieved by applying the models.

B.Sc. (Computer science)

V semester

Software Engineering:

Out comes: **Sub code:**

- An ability to identity, Formulates and solves Complex engineering problems by applyingPrinciples of Engineering, science and Mathematics.
- An ability to apply engineering design to produce solutions that meet specified heads with consideration of public health, welfare, social.
- An ability to develop and conduct appropriate experimentation, analyze and interpret data and use engineering Judgment to draw conclusions.

Data Communication and Networking

Outcomes: **sub code:**

- Students will be able to understand various types of transmission media, network devices.

- To understand Parameters of evaluation of Performance for each media and device.

- To know about an Overview of security issues related to data communication in networks.

ASP. Net

Outcomes:

- Create aweb application using.net.

- Learn data access mechanism provided .net.

- Building windows applications.

- It's integration with Alp, net.

- To build windows Application.

Cloud Computing **Sub. code**

Outcome:

- Students should be able to Articulate the main concepts, key technologies, strength, and limitations of cloud computing.
- To understand applications For State-of-the art cloud computing identify the architecture and infrastructure of Cloud Computing**.**
- Students able to choose the appropriate technologies, algorithms and approaches for the related issues.

B.Sc. (computer science)

ComputerGraphics

Out comes:

- Students will demonstrate their ability to use modern 3D Techniques, models and Computer graphicalgorithms to solvegraphic Problems.
- Students will be able to identity and explain the core concept Operating system.

Operating System

Outcomes: **Subcode**:

- To understand what is an Operating system and the role it Plays.
- High level understanding of the structure of operating systems, applications.
- To get knowledge of the services provided by operating systems.
- Students can get exposure to some details of major OS concepts.

Data Warehousing and Data mining **Sub Code**

Out comes:

- To understand Data warehouse Fundamentals, Data mining principles, Design data warehouse with dimensional modelling and apply OLAP Operations.
- Identify appropriate data mining algorithms real word problems, compare and evaluate different data mining techniques like Clarification, prediction and association rule mining.
- Describe complex data types with respect to spatial and web mining.

Internet of things **sub code:**

Out comes:

- Students will be able to use the IOT Technologies in practical domains of society.
- Students will be able to gain knowledge about the state of the art methodologies in Tot application domain.

- Students will be thorough about the technology behind the IOT and associated Technologies.

B.Sc. (Computer Science)

Learning outcomes:

- An ability to apply mathematics to solving Computing Problems.
- An ability to critically analyze a Problem and to design, implement and Evaluate a Computing Solution that meets requirements.
- An ability to work effectively in Small groups on computing medium Scale projects.

Learning Outcome

B.com.

Learning outcomes:

- Students can get thorough knowledge of Finance and commerce and the Practical exposure helps the Students to stand in organization.
- Students will be able to communicate effectively both in terms of business as well as social interaction.
- This study will encourage Entrepreneurship Spirit among students and encourage them to participate effectively in Social,Commercial and civic issues leading to national development.
- It will develop the ability to think critically and independently translating in to well develop Personal valve system.

Course Outcome

B.com

I-semester

FINANCIAL ACCOUNTING: **Sub. code:**

Outcomes:

- Acquire Conceptual knowledge of basics of accounting
- Describe the role of accounting information and its limitations.
- Identify events that need to be recorded in the accounting records. Develop the skill of recording financial transactions and preparation of reports.

BUSINESS ORGANISATION **sub.code:**

Outcome

- Learn about Various types of organization and its principles.
- Understand the importance of business and its types, factors influencing the size & Firms, Classification.

- Acquire to knowledge of business, profession and employment, partnership Firm and Joint Stock Company.
- Analyse the co-operative organization.

BUSINESS ECONOMICS **Sub.code**:

Outcomes:

- To Learn Economic models to isolate the relevant elements of managerial Problems, identify the relationship and Formulate them in to a managerial model to Which decision making tools can be applied.
- To provide students with basic understanding of the Economic theory and analytical tool that can be used in decision making problems.
- To understand the concepts and application of Economic in business.

Environmental Studies **Subcode:**

Outcome:

- understand and Evaluate the Global Scale of environmental problems.
- Reflect critically on their roles, responsibilities and identities as citizens, Consumers and environmental actors in Complex, inter connected world.
- Communicate complex environmental information to both technical and Non-Technical audiences.

B.com.

Semester II

Marketing **Sub. Code:**

Outcome:

- Get to know about Various marketing Functions
- Know about the role and various marketing systems
- Students get a clear knowledge about product promotion and so as to Createbrand name.
- Enable the students to gain knowledge about marketing and its Promotional aspects.

Principles of Management **Sub.code:**

Out comes

- Understand the details about planning and MBO
- Learn about Co-ordination and control principles and techniques.
- Understand the Principles of Management in traditional and modern scientific way.
- Understand the importance administration and Management.

Value Based Education **Subcode:**

Outcomes:

- Understand the importance of Value based living.
- Gain deeper understanding about the Purpose of their life.
- Understand and start applying the Essential steps to become Good leaders.

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Semester III

Banking theory Law and Practice **Sub.code:**

Outcomes.

- Understand the concepts Relationship between a of banking, banker& Customer, Marking and endorsing cheque.
- Evaluate the duties of a banker, the recent trends in Banking System.
- Acquire Fundamental knowledge about Central Bank of India (RBI).
- Enable the students to acquire knowledge about banking theory and Practice suitable in the changing and Environment.

Business Statistics **Sub.code:**

Outcomes:

- To understand the Sampling Frame Population Statistic Parameter, descriptive Statistics and
- Inferential Statistics.
- Enables the student to have the proper understanding of statistical applications in Economics and Management.
- To gain knowledge about Various Statistical tools and measurement Techniques.

Company organisation **Sub. Code:**

Outcomes:

- To Gain knowledge about Formation Promotion and incorporation of companies
- To understand the company Management and appointment of Directors, Managers etc.
- Acquire basic knowledge about various meetings conducted by the companies.
- To understand the steps followed by the company at the time of winding up.
-

Business Communication. **Sub code:**

Outcomes

- Manage the preparation of documents and the application of Procedure.
- Develop communication skills.

- To analyze and interpret information to make better decision making
- To Learn solving analytical thinking and problem solving.

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Semester IV

Business Mathematics **Subcode:**

Outcomes:

- Get the knowledge about matrix, differentiation and integration.
- Analyze simple and compound interest, indefinite and definite integrals of Simple Function.
- Evaluate the solution of Linear programming Problem by using graphical and simplex Methods.

Computer Applications in business **Subcode:**

Outcomes:

- Enables the students to know the importance of computer applications in business.
- To Gain knowledge about various Concepts such as E-commerce, E-business and EDI.
- To understand the E-marketing Techniques and consumer oriented E-commerce applications.
- Students can perform basic office duties and responsibilities.

Entrepreneurship Development **Sub. Code:**

Outcomes:

- It helps to understand the conceptual and applied knowledge about Entrepreneurship.
- To understand the business decisions involved in Starting a It helps to know business
- It helps to know about the importance of business standard and Ethics.
- To understand the Entrepreneurial Process.

Business Taxation **Sub code:**

Outcomes:

- They will be able to explain different types of Income and their taxability and expenses and their deductibility.
- Able to state the use of various deductions to reduce of business the Taxable Income
- Students will be able to describe how the provisions in the corporate tax law can be used for Tax Planning.

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Semester V

Corporate Accounting **Subcode:**

Outcomes:

- Acquire the knowledge in company Accounts and issue of shares and debentures, Calculation of Goodwill and underwriting of shares.
- To understand the accounting treatment of issue and redemption of preference shares & debentures.
- To acquire knowledge about Double accounting System and Banking companies.
- Gain confidence in preparation of company accounts in new Format and preparation of Liquidator's Final Statement.

Cost Accounting **Sub.code:**

Outcomes:

- Acquire basic knowledge on Last accounting Concepts, elements and classification of overheads, Levels of Material control.
- Evaluate the process losses, Wastage, Scrap, normal and abnormal losses and Treatment of profits in Contract costing.
- Analyze the various system of wage payment and methods of operating costing.

Income Tax Law and Practice **Sub.code:**

Outcomes:

- Assess the income of an individual and Tax Payable.
- Acquire the knowledge about the basic Principles and concepts of Income Tax.
- Familiarize with the Computation of Income Tax under the heads, Income From salaries, House Property Income, Capital Jain and Income from Other sources.
- Gain practical knowledge in Computing Tax ability of an individual and the Filing of Income Tax returns.

BusinessLaw **Sub.code:**

Outcomes:

- Understanding of contract, Consideration and capacity
- Understanding of Legality and Statute of Frauds in contracts
- Students can identify contract remedies.
- To demonstrate recognition of the requirements of the Contract agreement.

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Semester VI

Management Accounting **Sub. code:**

Outcomes.

- Perform Cost variance analysis and demonstrate the use of Standard Costs in Flexible budgeting.
- It helps to calculate various accounting ratios reports and relevant data.
- It helps to prepare analyses of various special decisions, using relevant management techniques.

- Analyze Cost-volume- Profit techniques to determine Optimal managerial decision.

Industrial Law. **Sub. code:**

Outcomes:

- To learn the provisions of Act for Industrial Management and employees welfare and Factories Act.
- To familiarize the students with recent amendments in industrial law.

Auditing **Sub code:**

Outcomes:

- Know the stops For Performing an audit
- Apply auditing Practices to different nature of concerns.
- Plan an audit taking into account concept to f evidence, risk and materiality.
- Equipped to draft business reports and letters.

BA (HISTORY)

History of India upto 6414.A.D.

Outcome:

- Acquisition of knowledge about geographical features of data and prehistoric India.
- Students will understand Indus valley Vedic civilization and Vedic literature civilization
- knowledge gained about condition of North India during 6th century BC and rise of new religion
- Students can understand the Malleyan Empire, Gupta dynasty and Valdhanaempire

Learning outcome

- Understand the features of Indus valley Civilization, Buddhism and Jainism.
- Visualize the administration of Mauryas and the architecture of Mauryar.
- Identify the administration of Guptas.

History of Tamilnadu up to 1336 A.D.

Outcomes:

- Students can gain knowledge features of geographical features of Tamilnadu and sangam age.
- Students can understand the age of the cholas and pandyas.
- Students can learn about the Muslim invasion in Tamil country and Impact of their rules

kLearning Outcomes:

- Illustrating the influence of Geography and Topography of Tamilnadu.
- Assess the rule of pallavas and first pandyan Empire.
- Explaining the contribution of imperial cholas to Art and Architecture.

Principles of Tourism.

Course outcome:

- Students can understand the tourism, its types and forms
- Knowledge will be gained about the tourism, Organizations.
- Students can understand the causes for the rapid growth of Tourism.
- Students can understand the travel formalities and Regulations

Learning outcome:

- Interpret the growth of Tourism through theages.
- Demonstrate the important Tourist centers in India.
- Explain the Tourist centres in South India.
- Illustrate the type of tourism Organisations.

II Semester

History of India Cony A. D to 1526 AD).

Outcome :

- Students will understand about the origin and theory of Rajputs.
- Knowledge gaines about the advents of muslim invaders.
- Students will understand the Khilji imperialismand Rise of Thuglag.
- Acquisition of knowledge about Bahmini kingdom its origin and disintegration.

Learning outcome:

- Defining the rise of Delhi Sultanate.
- Analyzing the regime. and reforms of the Ala-ud- Din - Khilji.
- Assessing the Bhakti movement and its impact in India.

History of Tamilnadu (1336 AD -1800 AD)

Course Outcomes:

- Students will be able to understand the foundation of vijayanagar empire, impact of the their role on Tamilnadu and valangai and Idangai issues.
- Acquisition of knowledge about the Morathas of Tamil country and their contribution to Tamil culture.
- Knowledge gained about the Sethupatis of Ramnad and the Nawabs..

Learning Outcome:

- Ability to evaluate the historical significance of Tamil Literatures.
- Understand the cultural part of the Tamil with the help of modern archaeological excavations.
- Compare the life and heritage of the Tamil with other people.

Tourism product in India:

Course outcome.

- Acquisition of knowledge about the natural tourist resources and man- made resources of India.
- Students can understand the tourism productand India's climate and seasons.
- Enable the students to know about theimportant tourist Centers and popular pilgrimtourist centers in India.

Learning outcome:

Semester IV

History of India (1526-1442 AD)

Course outcome

Students can understand the advent of a new Political culture in India.

Acquisition of knowledge about the emergence of Hindu rivivalism by way of Maratha imperialism

Students will have a wider discussion on a new administration, economic policy and religion.

History of Tamilnadu(1800 - 1964 AD)

course outcome:

- Enable the students to study more on Political domination and native resistance.
- Knowledge gained about the emergence of Nationalism in Tamilnadu.
- Acquisition of knowledge about the rise of regional sub-nationalism in Tamilnadu.

Constitution of India.

Course outcome:

- Students will be able to understand the fundamental rights and duties guaranteed by the Indian constitution.
- Acquisitism of knowledge about the genesis of the constitution of India.
- Enable the students to have a wider idea on centre state relations.

Semester -IV

Course Name History of India (1772-1947 AD)

course outcome.

- Acquisition of knowledge about the imperialist Policies of the British Rule.
- Students will be able to understand the Various social reforms initiated in India.
- Enable the students to estimate the role of Indian leaders in liberating mother India from alien Rule.

Course Name: History of kawope. (476 - 1453 AD)

Course outcome:

- Knowledge gained about the glorious legacy of Roman Empire.
- Students will have an idea on the influence of Renaissance and Enlightenment.
- Acquisition of knowledge about the society during the middle ages.

Semester - V

Course Name: Elements of Historiography.

course outcome:

- Enable the students to understand thr fact that History is a utility subject.
- Basic knowledge on Historical research methodoldogy.
- Acquisition of knowledge about the pioneers in Historiography.

Course Name : History of Europe (1453 1489 AD)

Course outcome:

- Acquisition of knowledge about the historical Significance of the dawn of modern age.
- Knowledge gained about the Christian Reformation and Counter Reformation.
- Enable the students to understand the power struggle that affected Europe during the period under review

Course Name : History of china (1889-1966 AD)

Course outcome :

- Students will know about the series of Chinese failures.
- knowledge gained about the significance of the advent of Europeans in china.
- Students will understand the emergence of chinese Nationalism.

course Name: Indian Public Administration.

course outcome:

- Students will be able to understand the basic principles of public Administration
- Acquisition of knowledge about the functions and power of the chief executive.
- Learners will understand the role of planning commission and NidhiAyog in the development of Indian Economy.

Semester VI

Course Name: History of Europe (1789 – 1945 AD)

Outcomes:

- Students can understand the majir issues and current issues during the period.
- Students will understand the impact of world wars on Global society.
- Students will be able to estimate the role of UNO in maintaining world peace.

course Name: History of Science and Technology Since 14th Century

Course outcome:

- Students can understand the conditions of india on the eve independence.
- Knowledge gained about the contributions made by the architects in India.
- Students will understand the emergence of regional sub- nationalism in India and its results.

course Name: Women's Studies

Course outcome:

- Sudents can understand the need for change among the women
- Students can understand the various reasons for the secondary status to Indian women
- Estimate the contributions made by pioneering Indian women leaders in uplifting the women folks.

Department of Tamil

Under Graduation Program Outcomes

- To provide understanding of Grammar, History of Literature, Literature (sangam& Modern) Culture of Tamil nadu, Journalism, Folklore and Creating Literature of their own.
- Tamil being One of the Ancient Languages in the world requires Greater responsibility in the students to have a Strong Foundation and wider knowledge of the Language.
- Developed Language and communicative ach skills
- Developed aesthetic sense toappreciate Literature and Life.
- To get an Tamil Updated knowledge of Tamil.
- This course of study gives adequate knowledge and competence to face Competitive examinations.

Department of History

Under Graduation Program outcomes

Students who graduate with a major in history should be able to:

- Identify major historical Periods, ideas, People and events in more than one Civilization /culture and explain diversity within those cultural studied.
- Explain how moral, religious and Ethical developments relate to historical Study and how historical knowledge and understanding applies to life as outside the classroom

- Demonstrate historical understanding by constructing interpretations of the past, Explaining historical development in context and making meaningful connections between Past and present.
- Clear understanding of evidence collected from historical resources.
- Awareness of current historical debates.

Department of English

Under Graduation program outcomes.

- Demonstrates a set of basic Skills in Literary communication and expectation of literary practices with clarity.
- Ability to seek and Write clearly in Standard English.
- To display an ability to read and understand various literary genres and write erotically.
- Learn effective communication by reading the various Language Pattern , Sentence structure and dialogue Forms.
- To demonstrate a critical aptitude and reflexive thinking to systematically analyse the scholarship English Studies.
- Helps the students to understand the Creative resources of Language in Poetry, drama, Fiction, prose and how it expresses the human experiences.

Department of English

Post Graduation Program Outcomes

- Understanding the Literary devices which enhance the beauty of the Poem.
- Students will be able to Perceive Various aspects creatively and critically and will able interpret any piece of writing
- Familiar with the representative Literary, cultural texts of any age regardless of its historical and geographical context..
- Should be able to apply critical and theoretical approaches to reading analysis of Literary texts in multiple genres.
- Appreciate Literature

Department of Commerce

Under Graduation program outcomes.

Towards the end of the Program, the Students will be able to

- Understand the basic principles of accounts, apply commence knowledge ·and skill
- Get motivated to involve in entrepreneurial activities.
- Able to work in digitalized Environment.
- Pursue higher education / get ready for employment.
- Exercise critical thinking and reasoning in problem solving activities.
- Develop self-Confidence and attitude for lifelong Learning

Department of Commerce

Post-Graduation program outcomes

This program is for graduates of Commerce and management.

- To Develop Managerial & Analytical skills. to meet the challenges of over changing business environment at national and International level.
- This program imparts the students training in various aspects of business and its environment
- After completion of the program the Students can seek placement, in the areas of Finance, Accounting & Management.
- Students can the prospective employer requirements such as: Job proficiency, learning aptitude and alto pursue research in commerce and Management areas.

Department of Mathematics

Under Graduation program Outcomes:

- Students Completing Mathematics major should.
- Gain knowledge in Foundational areas of mathematics.
- Apply mathematical knowledge

- Communicate mathematics accurately, precisely and effectively.
- Find employment utilising their mathematical knowledge.
- Be able to solve mathematical problems using technology.
- Undertake Further studies related to Mathematics.

Department of Mathematics

Post-Graduation program outcomes:

- To Develop abstract mathematical thinking
- To improve own Learning and Performance.
- To develop problem solving Skills and apply them independently to problems in pure and applied Mathematics to
- To assimilate complex mathematical ideas and arguments.
- To Solve one dimensional Wave and heat equations employing the methods
- Gives adequate knowledge and Competence to Examinations,

Department of Chemistry

Under Graduation program Outcomes:

- This program enable the students
- To develop the enable the ability to apply the principles of chemistry
- To understand basic facts and concepts in chemistry while retaining the exciting aspects of chemistry
- To develop skills in the proper handling of apparatus and Chemicals. To be exposed to the different processes used in industries ND THEIR APPLICATIONS
- To appreciate the achievements in chemistry and to know the role of chemistry in nature and in society
- To develop problem solving skills
- To apprise the students of its relevance in future studies

B.A. Tamil: Semester-I

1) **,f;fhy ,yf;fpaq;fs;:**

- ,f;fhy ,yf;fpa tiffis mwpKfg;gLj;jp cj;jp> tbtk;> nkhopeil> gilg;ghspapd; jdpj;jd;ik Mfpatw;iw tpsf;fp ,yf;fpaj;jpd; Moj;ijAk;> EZf;fj;ijAk; mwpar; nra;jy;.
- ,f;fhy ,yf;fpa tiffis mwpKfg;gLj;jp cj;jpfos czh;j;jp gilg;ghw;wiy tsh;j;jy;.

2) **,yf;fzk;> ed;D}y; vOj;jjpfhuk;:**

,yf;fzq;fisAk;> vOj;Jf;fspd; tiffisAk;> Gzh;r;rp epiyfisAk; mwpar; nra;jy;.

3) **ehl;LGwtpay; - I**

ehl;Lg;Gwtpaiyg;gw;w mwpar;nra;jy; kf;fspd; tho;f;if KiwfisAk;> gz;ghl;ilAk;> ehl;Lg;Gw ,yf;fpaq;fs; top mwpe;J nfhs;Sjy;> ehl;lhh; ,yf;fpaq;fs; njhFf;fTk;> mtw;iw ghJfhf;fTk; Mh;tj;ij Vw;gLj;Jjy;.

Semster –II

1) **rpw;wpyf;fpaq;fs;:**
rpw;wyf;fpa tiffisAk;> fpuhkpa kf;fisAk;< nja;tq;fs; Fwpj;j tha;nkhopf;fijfisAk; mwpar; nra;jy;.
2) ,yf;fzk;> ed;D}y;> nrhy;yjpfhuk;:
   - gpioaw;w nkhopeiliaf; ifahsr; nra;jy;:
   - Kiwahd tifg;ghl;bidAk; czh;j;jp> nrhy;ypd; tiffisAk; fw;fr; nra;jy;.
3) **ehl;Lg;Gwtpay; - II**
   - ehl;Lg;Gw kf;fspd; fiyfis mwpjy;.
   - Ehl;Lg;Gw kf;fspd; tho;tpaypy; ek;gpf;ifAk;> nghOJNghf;F epfo;TfisAk; mwpe;J nfhs;Sjy;.
   - mope;J tUk; fiyfisAk;> kUj;Jtj;ijAk; fhf;f Kw;gLjy;.

Course Outcome (C.O)

III – SEMSESTER

1) **,yf;fzk;> ahg;G> mzp** **Sub.Code:**
ghf;fspd;; tiffisAk;> nra;As;sfspd; mzpeaj;ijAk;> mzptiffisAk; mwpar; nra;J kuGr; nra;As;fis mZf toptFj;jy;.
2) **ngz;zpak;** **Sub Code**:
   - ngz;;zpa tiffis tpsf;fp myf;fpa rhd;Wfs; $yk; ngz;zpasf; nfhs;iffis czh;j;Jjy;.
   - Ngz;fSk;> rl;lq;fSk;> ngz;fs; Kd;Ndw;wj;jpy; murpd; nfhs;iffs; Fwpj;J fw;gpj;jy;.

3) **Ngr;Rf;fiy**

- Khzth;fSf;F Ngr;rpd; njhlf;fk;> Ngr;rhshpd; jFjpfs;> Ngr;R njhlq;Fk; Kiwfis fw;gpj;jy;.
- Ngr;Rj;jahhpg;Gf;F Fwpg;ngLj;jy;> khzth;fspd; Ngr;Rj;jpwid tsh;j;jy;.

III – SEMSESTER

1) **,yf;fzk;> nghUs; - mfk;>Gwk; Sub Code:**

- gz;ilaj; jkpoh;fspd; mf tho;tpaw; $WfisAk;> jpizg; ghFghLfisAk; fw;fr; nra;jy;.
- Gz;ilj; jkpoh;fspd; tPuk;>nghh; Kiwfs;> kd;dh;fspd; Gfo;> nfhil> ngz;fspd; kwg;gz;G Mfpatw;iw mwpar; nra;jy;.

2) **Nfhtpy;fiy:**

- jpUf;Nfhtpy;fspd; Njhw;wk;> tsh;r;rp Mfpatw;iw khzth;fs; mwpa cjTjy;.
- tuyhw;W mbg;gilapy; Nfhtpy; fl;Lkhdk; jpUTW mikg;G> topghL> ek;gpf;ifs; Mfpatw;iw mwpTWj;jy;.
- Nfhtpy; fiyf;Fk;> gpw fiyf;Fk; cs;s njhlh;ig khzth;fs; mwpe;J nfhs;s cjTjy;.

3) **jypj;jpak;:**

- khh;f;rpa jpuhtpl rpe;jidg; ghh;itapy; jypj;jpak;> jypj; tpLjiyapy; jypj; ngz;zpak; Fwpj;J mwpe;J nfhs;s cjTjy;.

III – SEMSESTER

1) **mw ,yf;fpak;:**

- ePjp ,yf;fpaq;fspd; Njhw;wk;> tif> gz;ilj;jkpoh;fspd; mw czh;Tfs;> ,d;iwa cyfpy; mwp ,yf;fpaq;fspd; ,d;wpaokahikia czur;nra;jy;.
- mwE}y;fspd; tiffisAk; fUj;J xUikg;ghl;ilAk;> fhye;NjhWk; nghUe;Jk; ePjp khh;f;fj;jijAk; czh;j;Jjy;.

2) **fhg;gpa ,yf;fpak;:**

- fhg;gpaq;fspd; tiffisAk;> ,yf;fzq;fisAk;> gz;ghl;Lf; fsq;fisAk; mwpar; nra;jy;.

❖ fhg;gpaq;fspd; tiffisAk;> fhg;gpa ,yf;fzq;fs; nghWe;Jk; jd;ikia tpsf;fpAk;> gilg;ghsh;fspd; gilg;G EZf;fq;fisAk;> r%fg; gz;ghl;Lf; fsq;fisAk; mwpar; nra;jy;.

3) **njhy;ypay;:**

- njhy;nghUspaypd; tuyhW kw;Wk; kz;zpay; Gul;rp> 19-k; E}w;whz;bd; fz;Lgpbg;Gfs; Kjypadtw;iw gw;wp mwpe;J nfhs;Sjy;.
- kl;ghz;lq;fs; gw;wpa mwpjy;> njhy; nghUspay; fhyf; fzpg;G Kiwfs;> gok; nghUl;fis ghJfhj;jy;> tuyhw;Wf;F Kw;g;gl;l fhyk; Kjypatw;iw mwpar; nra;jy;.

Semester – VI

❖ **rq;f ,yf;fpaq;fs;:**

rq;f ,yf;fpag; ghFghL> kf;fspd; tho;tpay;> ,aw;ifNahL ,ize;j tho;f;if Mfpatw;iw tpsf;fp mfg;nghUs; $Wfisg; Gyg;gLj;jp kuG nra;Al;fis thrpj;J nghUs; mwpar; nra;jy;.

2)**,yf;fpaj; jpwdha;T:**

jpwdha;T tiffisAk;> nfhs;iffisAk; tpsf;fp jkpohpd; jw;fhyj; jpwdha;Tg; Nghf;FfisAk;> jpwdha;T tiffisAk; mwpe;J nfhs;Sjy;.

3.) **rka ,yf;fpak;:**

rka Nkk;ghl;bidAk;> mbath;fspd; rka newpfisAk;> jpUj;jyq;fspd; kfpikAk; midj;J rka khh;f;fj;ijAk; czh;j;JJy;.

❖ rka ,yf;fpak; Njhd;wpa #oiyAk;> mjid tsh;j;j mbath;fisAk;> rka newpfisAk; czur; nra;jy;.

M.Sc Maths

Algebra:

- Understand the Concepts of Groups, Normal Subgroups and quotient groups.
- Explain the concepts of Homomorphism Automorphism on groups and Permutation groups
- Analyze basic Concepts about Rings, Ideals and quotient rings.
- Demonstrate examples of Euclidean rings. Polynomial rings, Polynomial rings over Commutative rings.

Analysis-I:

- Define and recognize the basic Properties of the field of real numbers. Improve and Outline the logical thinking.
- Define and recognize the series of real numbers and Convergence shown the ability of working independently and with groups.
- Define and recognize Bolzano - Weirstrass Theorem.
- Demonstrate an understanding of limits and how they are used in Sequences, series, differentiation and Integration.
- Inverse and implicit function theorem.
- Function of Several variables and differentiation in R^n

Analytic Number Theory

- Analyze and Prove results Presented in Analytic number theory.
- Prove results Similar to the ones Presented in the Course and apply the basic techniques, results and Concepts of the course to concrete examples and exercises.
- Understand the interdisciplinary nature with other mathematical branches.
- Understand theoretical physics and Combinatorics with the knowledge of Partition theory.

Ordinary Differential Equations:

- Apply the fundamental Concepts ODE and PDE and the basic numerical methods for their resolution.
- Solve the Problems choosing the most suitable method.
- Understand the difficulty of Solving Problems analytically and the need to use, Numerical approximations for their resolutions.
- Use Computational tools to solve Problems and applications of ODE and PDE.
- Formulate and solve differential equation Problems in the field of Industrial.
- Use an adequate scientific language to formulate the Numerical Analysis basic Concepts of the course.

Numerical methods:

- Demonstrate understanding the Common Numerical methods.
- Apply various mathematical operations and tasks such as interpolation, differentiation, integration, the solutions of linear equations and the solutions of differential equations and partial differential equations.
- Solve dense Systems of linear equations and last Squares Problems and have a working Knowledge of LU and QR factorizations for these problems.
- Understand and apply appropriate techniques. for numerical differentiation and integration.
- Solve initial value Problem and ordinary differential equations with explicit implicit methods as appropriate Solution.

Algebra- II

- Analyze and demonstrate examples of linear independence and bases, Dual Spaces and inner Product Spaces.
- Assess Properties implied by Roots of Polynomials and more about Roots.
- Classify and determine the trace and transpose of the matrices.
- Define, illustrate and apply the concepts of unitary Hermitian and Normal transformation

Analysis - II

- Demonstrate understanding of the basic Concepts underlying the definition of the General Lebesgue integral.
- Prove basic results of measure theory and Integration theory.
- Demonstrate understanding of the Statements and Proof of the fundamental integral Convergence theorems and then applications.
- Demonstrate understanding of the statements of the main results on integration on Product Spaces and an ability to apply these in examples and to apply the theory of the course to solve a variety of Problems at an appropriate difficulty.

Graph Theory:

- Understand the basic Concepts of graphs, directed graphs and weighted graphs and able to present a graph by matrices.

- Understand the Properties of trees and able to find minimal Spanning tree a Gwen weighted for a graph.
- Understand Euslevan and Hamiltonian graphs.

Complex Analysis:

- Extend the Concepts of analysis of real variables to Complex numbers like sequences and series and differentiate and Integrate Complex functions.
- Carry out contour integration, Compute integrals using residues.
- Apply techniques of Complex analysis to Summation of series.
- Apply Conformal mappings to Problem from Physical Sciences

Topology- I

- Define and illustrate the Concept of topological Spaces and continuous functions.
- Define and illustrate the concept of Product topology and quotient topology.
- Prove a selection of theorems concerning topological Spaces, Continuous functions, Product topologies and quotations topologies
- Define and illustrate the concepts of the Separation axioms.
- Define Connectedness and Compactness and Prove Selection of related Theorems,

Differential Geometry:

- Understand the curvature and torsion of a space Curve how to compute theorem and how they suffice to determine the Shape of the curve.
- Understand the definition of a smooth Surface, and the means by which many examples may be constructed.
- Understand the various different types of Curvature associated to a Surface, and how to compute them. Understand the first and Second fundamental forms of a surface, how to compute them, and how they suffice to determine the local shape of the surface and describe different examples distinguishing general geometric algebraic topology.

Functional Analysis:

- Describe the Properties of normed linear spaces and Construct examples of such Spaces.
- Extend basic notions from Calculus to metric Spaces and normed vector Spaces.
- State and Prove Theorems about finite dimensionally by in normed vector spaces.
- State and prove the Cauchy – Swartz inequality and apply it to the deviation or other inequalities.
- Prove that a given Space is a Hilbert Spaces or a Branch Spaces.
- Describe the dual of a normed linear space.

Topology-T

- Define Connectedness and Compactness, and prove a selection of related theorems and describe different examples distinguishing general, geometric and algebraic topology.

Students who have completed the requirements

- Understand the foundations of Mathematics.
- Be able to perform basic computation in higher mathematics.
- Be able to read and understand middle level proofs
- Be able to write and understand basic proofs.
- Develop and maintain problem- solving skills.
- Use mathematical ideas to model real world problems.
- Be able to communicate mathematical ideas with others.
- Have experience using technology to address mathematical ideas.

CLASSICAL ALGEBRA:

On completion of this course students will be expected to

- Polynomial addition, Multiplication, Subtraction, Division, roots of Polynomials.
- Formation of Equations.
- Relations between roots and Coefficients symmetric function of the roots.
- Sum of the power of the roots of an equation.
- Apply the Newton's Theorem.
- To find Reciprocal equation and transformation of equations.
- Apply Descartes rule of signs.
- Find Eigen values and corresponding eigenvectors.
- Find Eigen values and corresponding eigenvectors.
- Find Eigen values and corresponding eigenvectors for a square matrix.

CALCULUS:

Upon successful completion of calculus the students will be able to

- Compute derivatives and integrals of vector functions.
- Find the lengths and curvatures of space curves.

B.Sc Mathematics Learning Outcomes

Students who have completed the requirements will

- Understand the foundations of mathematics Be able to perform basic computations in higher mathematics.
- Be able to read and understand middle-level Proofs.

- Be able to write and understand basic Proofs.
- Develop and maintain Problem-Salving skills.
- Use mathematical ideas to model real - world Problems.
- Be able to communicate mathematical ideas with others.
- Have experience using technology to address mathematical ideas.

Course Outcome.

I- Semester:

- On Completion of this Course students will be expected to
- Polynomial addition, multiplication. Subtraction, division, roots of polynomials formation of equations.
- Relations between roots and Coefficients Symmetric function of the roots.
- Sum of the Powers of the roots of an equation.
- To find reciprocal equation and transformation of equations.
- Find Eigen value and Corresponding Eigen vectors for a square matrix.

Calculus

- Upon Successful completion of Calculus, The Students will be able to
- Compute derivatives and integrals of vector functions.
- Find the are lengths and curvatures of Space Curves.
- Find the Radius of Curvature and Centre of Curvature in Cartesian and Polar Co-ordinates.
- To find Pedal equation.
- Calculate Double A Triple integration and changing the order of integrations
- Calculate Jacobean's. and change of variables.

Differential Equation.

- Distinguish between linear, nonlinear, partial and ordinary differential equations.
- State the basic existence theorem for1st Order ODE's and determine a Solution interval.

- Recognize and solve a variable Separable differential equation. Recognize and solve a homogeneous differential equation.
- Recognize and solve exact differential an equation.
- Find Particular Solutions to initial value Problems
- Solve basic application Problems described by first order differential equations.

Analytical Geometry & 3D

- Apply Concepts of analytic geometry to help solve application Problems.
- Evaluate Junctions at numerical values and Simplify algebraic expressions with functions evaluated at Symbolic values and analyze and simplify Compositions of functions.
- Establish the behavior of rational functions graphically near asymptotes and at Infinity using the concept of the limit.
- Students Completing this course will be able to find one sided and two sided limits.
- To apply differentiation techniques to graphing optimization on related rates Problems.

Semester III

Sequences and Series:

- An ability to frame works work with an axiomatic frame works.
- Determine if an infinite Sequence is bounded.
- Determine if an infinite Sequence is monotonic
- Determine if an infinite sequence is convergent or divergent.

Statistics - I

- Students will formulate Complete, Concise, and Correct mathematical Proofs.
- Students will frame Problems using multiple mathematical and statistical representations of relevant structures and relationships and solve using standard techniques.
- Students will summarize data visually and numerically
- Students will learn the mathematical and Probabilistic foundations of statistical inference.

Vector Calculus:

- The Course Provides an introduction to functions of several real Variables and classical Vector analysis. To find Partial derivatives, directional derivatives, gradients.

- Find the external Problems and the line and Surface integrals.
- Find the vector valued functions, divergence
- Apply Green and Stokes divergence theorem and applications.

Semester IV

Abstract Algebra - I

- Assess Properties implied by the definitions of groups and rings.
- Use various Canonical types of groups and Canonical types of Rings.
- Analyze and demonstrate examples of ideals and quotient rings.
- Use the Concept of isomorphism and homomorphism for groups will be able to develop new Structures based on given Structures.
- **Statistics - II**
- The Course imparts extensive knowledge in Concepts of Mathematics, Probability, and Statistics along with logic and Proofs.
- This Course Involves an introduction to highly advanced Concepts and theories mathematical Proofs and modeling, regression etc.
- Students will frame Problems using multiple mathematical and Statistical representations of relevant structures and relationships and Solve using Standard techniques.
- Students will learn the mathematical and Probabilistic foundations of statistical inference.

Trigonometry, Laplace transform & Fourier series:

- On Completion of this unit Successful students will.
- Able to understand the Laplace transform of elementary functions.
- Able to use the rules of integration definition of Laplace transform students to Prove the properties of Laplace transform.
- Learns the topics inverse Laplace transform, application of Laplace transform helps to solve linear higher order differential equation System of differential equations.
- Understand the Concept of Fourier Series which gives the idea of expanding the Sectionally Continuous functions Infinite series.
- Recognize and use the vocabulary of angles.
- Find all solutions of a trigonometric equation.

- Recognize polar la ordinates and use them to perform arithmetic On Complex numbers.

Semester V

Linear Algebra:

- Identify and Construct linear transformation of a matrix.
- Characterize linear transformations as on to,1-1
- Solve linear Systems represented as linear transforms.
- Understand the basic ideas of vector algebra: linear dependence and independence and Spanning.
- Know how to find the row space, Column space and null space of a matrix, and be familiar with the Concepts of dimension of a Subspace and the rank and nullity of a matrix understand the relationship of these Concepts to and associated systems of linear equations.
- Find the Gram-Schmidt Orthogonalization of a matrix.

Real Analysis-II

- Be familiar with the notion of a linear transformation and it's
- Define Riemann integrable and Riemanntums
- Prove a theorem about Riemann Sums and Riemann integrals.
- Knowledge of some simple techniques for testing the convergence of sequences and series of functions, and confidence in applying theorem.
- Apply the mean value theorem and fundamental theorem of Calculus to problem in the context of real analysis.

Statics

- Students will learn to identify, formulate and this Solve Engineering. Problems in rigid body Statics.
- Understanding of the analysis of distributed loads.
- Knowledge of internal forces and moments in members.
- An ability to calculate Centroids and moments of Inertia.

Operation Research

- Apply the techniques used in operations research to solve real life Problem in mining.

- Industry Select an optimum Solution with Profit maximization.
- Determine Critical path analysis to solve real life Project Scheduling time and timely
- Identify and develop OR models from the verbal descriptions of the real system. U
- Understand the Mathematical tools that are needed to Salve optimization Problems.

Semester VI

Complex Analysis

- . Represent Complex numbers algebraically and geometrically.
- Define and analyze limits and Continuity for Complex functions as well as Consequences of Continuity.
- Apply the Concept and Consequences of analyticity and the Cauchy- Riemann equations and of results harmonic and entire functions. including the fundamental theorem of algebra.
- Evaluate Complex Contour integrals directly. and by the fundamental theorem, apply the Cauchy integral theorem in its various versions, and the Cauchy integral formula.
- Represent functions as Taylor, Power and Laurent Series, classify Singularities and Poles, find residues and evaluate Complex integrals using the residue theorem.

Number Theory

- Define and interpret the Concepts of divisibility, Congruence, greatest Common divisor, Prime, and Prime factorization.
- Apply the law of Quadratic Reciprocity and other methods to clarify numbers a and Primitive roots, quadratic residues quadratic non residues.
- Formulate and Prove Conjecturer about numeric patens
- Produce rigorous arguments Centered on the material of number theory.

Graph Theory:

- Be familiar with the definitions and basic theory of graphs,
- Be able to implement many of the standard algorithms of graph theory.
- Be able to prove simple results in graph theory.
- State all of the technical definitions Covered in the Course.
- State all of the relevant theorems Covered in the Course.

- Use these definitions and theorems from memory to Construct Solutions to Problems.

Dynamics

- Distinguish Kinematic and Kinetic motion.
- Identify the basic relations between distance, time, velocity and acceleration
- Apply Vector mechanics as Solving Kinematic problems a tool for solving Kinematic problems
- Create a Schematic of real world mechanism.

Coding Theory

- Understand the development of Codes for transmission and detection of information.
- Learn about the input and output of a Signal via transmission channel.
- Study detection and Correction of errors during transmission.
- Represent a linear Code by matrices - encoding and decoding.

Numerical Methods:

- Obtain numerical Solutions of algebraic and transcendental equations.
- Find numerical Solutions of System of linear equations and check the accuracy of the Solutions.
- Solve initial and boundary value problems. in differential equations using numerical Methods.
- Apply various numerical methods life Problems.

Real Analysis I

- By the end of the Course, Students be able to
- Explain the Completeness of a system of real numbers: a least upper bound, a greatest lower bound
- Elaborate on the topological concepts of the real numbers: Open sets, closed sets, accumulation Points, close, Open Covers, Compact sets.
- Define and utilize the following Concept: sequence, Subsequence, monotonic, Cauchy Sequence
- Prove that a given function is continuous or discontinuous and classify its points of discontinuity.
- Justify the Convergence / divergence of a given number Series
- Prove some of the classical theorems of real analysis.