# PERIYAR UNIVERSITY

**SALEM – 636011**

## B.Sc. MATHEMATICS
## (Computer Applications)

**New Regulations and Syllabus Under Choice Based Credit System.**
**Effective from the academic year 2008-2009 onwards.**

## BOARD OF STUDIES IN MATHEMATICS

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## 1. OBJECTIVES OF THE COURSE

Mathematics is a key to success in the field of science and engineering. Today, the students need a thorough knowledge of fundamental basic principles, methods, results and a clear perception of the power of mathematical ideas and tools to use them effectively in modeling, interpreting and solving the real world problems. Mathematics plays an important role in the context of globalization of Indian economy, modern technology, and computer science and information technology. This syllabus is aimed at preparing the students to hope with the latest developments and compete with students from other universities and put them on the right track.

## 2. ELIGIBILITY FOR ADMISSION

A Pass in the higher secondary Examination of TamilNadu Higher Secondary Board or some other Board accepted by the Syndicate as equivalent thereto with Mathematics (other than Business mathematics) as one of the subjects.

## 3. DURATION OF THE COURSE

The course of study shall be based on semester pattern with internal assessment under Choice Based Credit System. The course shall consist of six semesters and a total period of three years with 140 credits.The course of study will comprise of the following subjects according to the syllabus and is given in the scheme of Examinations and books prescribed from time to time.

## 4. EXAMINATIONS

The theory of examination shall be of three hours duration for each paper at the end of each semester. The candidate failing in any subject(s) will be permitted to appear for each failed subject(s) in the subsequent examinations.
The practical examinations for UG course shall be conducted at the end of the even semesters only.

## 5. SCHEME OF EXAMINATIONS

The Scheme of examinations for different semesters shall be as follows:

B.Sc .Mathematics(Computer Applications) – Course Structure under Choice Based Credit System.
(Applicable to the candidates admitted from the year 2008 – 2009 onwards).

| Semester | | Course Code | Course Title | Instruction Hours / Week | | | | Credit | Exam Hours | Total Marks | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Lecture | Tutorial | Practical | Total | | | Internal | External | Total |
| I | I | **08UFTA01** | Tamil -I | 4 | 2 | – | 6 | 3 | 3 | 25 | 75 | 100 |
| | II | 08UFEN01 | English- II | 4 | 2 | – | 6 | 3 | 3 | 25 | 75 | 100 |
| | III | 08UMACA01 | Core Course I- Algebra& Trigonometry | 6 | – | – | 6 | 5 | 3 | 25 | 75 | 100 |
| | | | Allied I- Course I- Throry | 5 | – | – | 5 | 3 | 3 | 25 | 75 | 100 |
| | | | Allied I –Practical | – | – | 2 | 2 | - | * | - | 75 | 100 |
| | IV | 08UES01 | Environmental studies | 1 | - | - | 1 | - | * | - | - | - |
| | | 08UVE01 | Value Education | 2 | | - | 2 | 2 | 3 | 25 | 75 | 100 |
| | | 08UMACAS01 | Skill Based Elective CourseI- | 2 | - | - | 2 | 2 | 3 | 25 | 75 | 100 |
| II | I | 08UFTA02 | Tamil –II | 4 | 2 | - | 6 | 3 | 3 | 25 | 75 | 100 |
| | II | 08UFEN02 | English –II | 4 | 2 | - | 6 | 3 | 3 | 25 | 75 | 100 |
| | III | 08UMACA02 | Core Course II- Calculus | 5 | - | - | 5 | 4 | 3 | 25 | 75 | 100 |
| | | | Elective Course I- Office Automation with practical | 3 | - | 2 | 5 | 5 | 3+3 | 25 | 75 | 100 |
| | | 08UMACAE01 | Allied I-Course II- Theory | 5 | - | - | 5 | 3 | 3 | 25 | 75 | 100 |
| | | | Allied I-Practical | - | - | 2 | 2 | 2 | 3 | 25 | 75 | 100 |
| | IV | 08UES01 | Environmental studies | 1 | - | - | 1 | 2 | 3 | 25 | 75 | 100 |
| III | I | 08UFTA03 | Tamil-III | 4 | 2 | - | 6 | 3 | 3 | 25 | 75 | 100 |
| | II | 08UFEN03 | English –III | 4 | 2 | - | 6 | 3 | 3 | 25 | 75 | 100 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | III | 08UMACA03 | Core course III-Differntial Equations&Laplace Transforms | 4 | - | - | 4 | 4 | 3 | 25 | 75 | 100 |
| | | 08UMACA04 | Core Course IV – Vector Analysis | 5 | - | - | 5 | 4 | 3 | 25 | 75 | 100 |
| | | | Allied II –Course I –Theory | 5 | - | - | 5 | 3 | 3 | 25 | 75 | 100 |
| | | | Allied II-Practical | - | - | 2 | 2 | - | ** | - | - | - |
| | IV | 08UMANE01 | Non Major Elective Course –I | 2 | - | - | 2 | 2 | 3 | 25 | 75 | 100 |
| IV | I | 08UFTA04 | Tamil –IV | 4 | 2 | - | 6 | 3 | 3 | 25 | 75 | 100 |
| | II | 08UFEN04 | English IV | 4 | 2 | - | 6 | 3 | 3 | 25 | 75 | 100 |
| | III | 08UMACA05 | Core Course V-Programming in C with practical | 3 | - | 2 | 5 | 4 | 3+3 | 25 | 75 | 100 |
| | | | Allied II-Course II-Theory | 5 | - | - | 5 | 3 | 3 | 25 | 75 | 100 |
| | | | Allied II – Practical | - | - | 2 | 2 | 2 | 3 | 25 | 75 | 100 |
| | IV | 08UMACAS02 | Skill Based Elective Course II | 2 | - | - | 2 | 2 | 3 | 25 | 75 | 100 |
| | | 08UMACAS03 | Skill Based Elective Course III | 2 | - | - | 2 | 2 | 3 | 25 | 75 | 100 |
| | | 08UMANE02 | Non Major Elective Course II | 2 | - | - | 2 | 2 | 3 | 25 | 75 | 100 |
| V | III | 08UMACA06 | Core Course VI – Algebraic Structures | 6 | - | -- | 6 | 6 | 3 | 25 | 75 | 100 |
| | | 08UMACA07 | Core Course VII – Sequences and Series | 5 | - | - | 5 | 5 | 3 | 25 | 75 | 100 |
| | | 08UMACA08 | Core Course VIII –Discrete Mathematics | 5 | - | - | 5 | 5 | 3 | 25 | 75 | 100 |
| | | 08UMACA09 | Core Course IX – Visual Basic | 5 | - | - | 5 | 5 | 3 | 25 | 75 | 100 |
| | | 08UMACAE02 | Elective Course II –Linear Programming | 5 | - | - | 5 | 5 | 3 | 25 | 25 | 100 |
| | IV | 08UMACAS04 | Skill Based Elective Course IV – | 2 | - | - | 2 | 2 | 3 | 25 | 75 | 100 |
| | | 08UMACAS05 | Skill Based Elective Course V- | 2 | - | - | 2 | 2 | 3 | 25 | 75 | 100 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VI | III | 08UMACA10 | Core Course X – Linear Algebra | 6 | - | - | 6 | 5 | 3 | 25 | 75 | 100 |
| | | 08UMACA11 | Core Course XI – Java Programming with Practical | 4 | - | 2 | 6 | 5 | 3+3 | 25 | 75 | 100 |
| | | 08UMACA12 | Core Course XII – Complex Analysis. | 6 | - | - | 6 | 5 | 3 | 25 | 75 | 100 |
| | | 08UMACA13 | Core Course XIII –Graph Theory | 5 | - | - | 5 | 5 | 3 | 25 | 75 | 100 |
| | | 09UMACA03 | Elective Course III –Object oriented with C++ | 5 | - | - | 5 | 5 | 3 | 25 | 75 | 100 |
| | IV | 08UMACAS06 | Skill Based Elective Course VI - | 2 | - | - | 2 | 2 | 3 | 25 | 75 | 100 |

*-Examination at the end of Second Semester.

**-Examination at the end of Fourth Semester.

**Allied Subjects :**

| Subjects | Subject Code |
|---|---|
| Allied I - Course I – Numerical Methods | 08UMAA07 |
| Allied I – Course II – Numerical Calculus | 08UMAA08 |
| Allied I - Practical | 08UMAAP01 |
| Allied II – Mathematical Statistics I | 08USTA01 |
| Allied II – Mathematical Statistics II | 08USTA02 |
| Allied II – Practical | 08USTAP01 |

**6. UNIFORMITY IN THE NUMBER OF UNITS IN EACH PAPER :**

Each theory paper shall consist of five units. The Question paper shall consist of questions uniformly distributed among all the units.

For theory paper without practicals, **Max marks is 75.**

**7. QUESTION PAPER PATTERN FOR ALL UG COURSES WITHOUT PRACTICAL :**

Time : Three Hours Maximum Marks :75

Part A: (10 x 2 = 20)
Answer ALL Questions

(Two Questions From Each Unit )

Part B : (5 x 5 = 25)

Answer ALL Questions

(One Question From Each Unit with internal choice )

Part C : ( 3 x 10 = 30)
Answer Any Three Questions out of Five Questions

( One Question From Each Unit )

**Question Paper Pattern For All UG Courses With Practical**

Time : Three Hours Max Marks : 50 Part A – (10 x 2 = 20)

Answer All Questions (Two questions from each unit)

Part B – ( 5x 6 = 30 ) Answer All questions

( One question from each unit with internal choice )

Total Marks for theory with practical = 100 marks

For Theory = 50 Marks

For continous Internal Assessment : 25 Marks.

For Practical = 25 Marks

**8. PASSING MINIMUM:**

The Candidates shall be declared to have passed the examination if the candidate secure not less than 30 marks in the University examination in each theory paper without practical .

**9. CLASSIFICATION OF SUCCESSFUL CANDIDATES:**

Candidates who secure not less than 60% of the aggregate marks in the whole examination shall be declared to have passed the examination in the First class .All other successful candidates shall be declared to have passed in the second class . Candidates who obtain 75% of the marks in the aggregate shall be deemed to have passed the examination in First Class with Distinction provided they pass all the examinations prescribed for the course at the first appearance. Candidates who pass all the examinations prescribed for the course in the first attempt and within a period of three academic years from the year of admission to the course only eligible for University Ranking.

**10.COMMENCEMENT OF THIS REGULATION:**

The CBCS regulations shall take effect from the academic year 2008-2009 ie, for the students who are admitted to the first year of the course during the academic year 2008-2009 and thereafter.

**11. TRANSITARY PROVISION:**

Candidates who were admitted to the UG course of study prior to 2008-2009 shall be permitted to appear for the examinations under those regulations for a period of three years ie, up to and inclusive of the examinations of April/May 2013.Thereafter they shall be permitted to appear for the examination only under the regulations then in force.

**B.Sc. Mathematics – Course Structure under CBCS**

**First Year / First semester**

**Core course I – Algebra and Trigonometry**

**Course code : 08UMACA01** **Max Marks :75**

**Unit I**

Characteristic equation - Characteristic roots and Characteristic vectors – properties – problems - Cayley – Hamilton theorem (statement only) and its problems – Diagonalisation of Matrices – problems.

**Unit II**

Polynomial equations – Imaginary and Irrational roots – relation between roots and coefficients of equations – Symmetric functions of roots in terms of coefficients of third degree equation - problems.

**Unit III**

Sum of the powers of the roots of an equation – Newton's Theorem on the sum of the powers of the roots – Transformation of equations – Roots with sign changed – Roots multiplied by a given number – Reciprocal equations – problems.

**Unit IV**

To increase or decrease the roots of a given equation by a given quantity. Removal of terms - Square of the roots – Transformations in general – Descarte's rule of signs – problems.

**Unit V**

Expansions of sin nθ,Cos nθ and Tan nθ – Expansions of $\sin^n\theta$ , $\cos^n\theta$ -Expansions of sinθ , cosθ and tanθ in terms of θ – Hyperbolic and inverse hyperbolic functions and its properties – Logarithm of a complex number – General prinicipal values – problems.

**Text Books :-**

| S.NO | Tiltle of the Book | Author | Publishing Company | Year of Publication |
|---|---|---|---|---|
| 1. | Algebra-Volume I | T.K.Manickavasagam Pillai and S. Narayanan. | Vijay Nicole Imprints Pvt, Ltd,#c-7,Nelson Manickam Road,Chennai-600029 | 2004 |
| 2. | Trigonometry | T.K.Manickavasagam Pillai and S. Narayanan | Vijay Nicole Imprints Pvt, Ltd,#c-7,Nelson Manickam Road, Chennai-600029 | 2004. |
| 3. | Algebra,calculus and Trigonometry | Dr.P.R.Vittal. | Margham publications,24,Rameswaram Road, T.Nager,Chennai-600017. | 2000. |

**Reference Books :-**

| S.NO | Tiltle of the Book | Author | Publishing Company | Year of Publication |
|---|---|---|---|---|
| 1. | Trigonometry. | N.P.Bali. | Krishna Prakaaaasan mandir,9, Shivaji Road,Meerut(UP)-250001 | 1994. |
| 2. | Algebra. | Burnside and Pantern. | Macmillen publishers,U.K. | 1976. |

**First Year / First semester**

**Skill Based Elective Course I – Aptitude Examination - I**

**(This paper is common for both B.Sc Mathematics and B.Sc Mathematics (CA) Major students.)**

**Course Code - 08UMACAS01** **Max Marks :75**

**Unit I**

Numbers , H.C.F. and L.C.M. of numbers , Decimal Fractions.

**Unit II**

Simplification , Square roots and Cube Roots , Average.

**Unit III**

Problems on numbers , problems on Ages.

**Unit IV**

Surds and Indices , Percentage , Profit and Loss.

**Unit V**

Ratio and Proportion , Partership.

## Text Books :-

| S.NO | Tiltle of the Book | Author | Publishing Company | Year of Publication |
|---|---|---|---|---|
| 1. | Quantitative Aptitude for competitive Examinations | R.S.Aggarwal. | S.Chand and company Ltd,152,Anna salai,Chennai. | 2001 |

**Firse Year / Second Semester**

**Core Course II - Calculus.**

**Course code : 08UMACA02** **Max Marks :75**

**Unit I**

Curvature - Radius of curvature , Circle of curvature and Center of curvature in Cartesian co-ordinates and Polar co-ordinates - Evolutes and Envelopes – definition - Method of finding envelopes - Problems in all sections.

**Unit II**

Asymptotes:- Definition - Methods of finding asymptotes of plane algebraic curves – special cases – problems. Slope of the tangent in polar co-ordinates - Angle of intersection of two curves - Pedal equation of a curve – Problems.

**Unit III**

Integration - Bernoulli's formula - Reduction formula for $\int_0^{\Pi/2} \sin^n x\, dx$ , $\int_0^{\Pi/2} \cos^n x\, dx$ , $\int_0^{\Pi/4} \tan^n x\, dx$ , $\int \sec^n x\, dx$ , $\int \operatorname{cosec}^n x\, dx$ , $\int \cos^m x \sin^n x\, dx$ , $\int \cot^n x\, dx$ , $\int_0^a x^n e^{ax}\, dx$, $\int e^{-x} x^n\, dx$ , $\int x^m (\log x)^n\, dx$ - Problems for all the above cases.

**Unit IV**

Beta and Gamma functions – Definition – properties – problems - relation between Beta and Gamma functions - Applications to evalution of definite integrals.

**Unit V**

Fourier series - Definition – Fourier coefficients – Fourier series of periodic functions of period 2JI - Even and Odd functions – Half Range series – problems.

**Text Books :-**

| S.NO | Tiltle of the Book | Author | Publishing Company | Year of Publication |
|---|---|---|---|---|
| 1. | Calculus Volvme. I | T.K.Manichava sagam Pillai and S.Narayanan | Vijay Nicole Imprints Pvt Ltd,#C-7,Nelson Chambers,115,Nelson Manickam Road,Chennai-600029 | 2004 |
| 2. | Calculus Volvme. II. | T.K.Manichava sagam Pillai and S.Narayanan | Vijay Nicole Imprints Pvt Ltd,#C-7,Nelson Chambers,115,Nelson Manickam Road,Chennai-600029 | 2004 |
| 3. | Calculus. | Dr.P.R.Vittal. | Margham publications , 24,Rameswaram road, T.Nagar,Chennai 17. | 2000. |

**Reference Books :-**

| | Tiltle of the Book | Author | Publishing Company | Year of Publication |
|---|---|---|---|---|
| 1. | Calculus. | N.P.Bali. | Krishna prakasan Mandhir,9,Shivaji Road,Meerut.(UP) | 1994 |
| 2. | Calculus | D.Sudha. | Emerald Publishers,135,Anna Salai,Chennai-600002 | 1988 |

**B.Sc. Mathematics (Computer Applications)**

**First Year -Second Semester**

**Elective Paper I -OFFICE AUTOMATION With Practical.**

**Course Code : 08UMACAE01** **Max Marks : 50**

**Unit I**

Word 2000 features - Text Formatting options - Sorting lists paragraphs and tables - Find and replace , create and edit styles - Footnotes and endnotes , book marks and cross references.

**Unit II**

Creating tables – Formatting - mail merge features - Adding colours and grapics - toolbars - document protection - Additional features of word XP.

**Unit III**

Excel 2000 features importing and exporting data - working with template links - report managers – Formatting , Sorting and Filtering data – Naming Ranges – Working tool bars, Pivotal tables and pivotal charts, sharing worksheet and protection - Additional features of Excel XP.

**Unit IV**

Introduction to MS PowerPoint 2000 - preparing slides and presentation - Adding animations - Inserting sounds and movies - Additional features of PowerPoint XP
Introduction to MS-Access - creating new database - creating a table Editing a table - Entering and Editing data into a table - creating a simple report.

**Unit V**

Basics of networking - Types – LAN , WAN , MAN - Introduction to web using dial - up network - concept of Internet - E mail basics , development tools and browsers - surfing the web - communication channels.

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**Text Books :-**

| S.NO | Tiltle of the Book | Author | Publishing Company | Year of Publication |
|---|---|---|---|---|
| 1. | Working In Microsoft Office | R.Mansfiebl. | T.M.Hill. | 1999. |
| 2. | Microsoft Office 2000. | C.Futon. | PHI. | 2000. |

**Reference Books :-**

| S.NO | Tiltle of the Book | Author | Publishing Company | Year of Publication |
|---|---|---|---|---|
| 1. | Microsoft Office 2000-8 IN I | HaBranken. | PHI. | 2000. |

**Course Code : 08UMACAEP01** **Max Marks : 25**

**List of Practicals :**

1. Preparation of word document.
2. Preparation of a table using Excel.
3. Preparation of a slide in Power Point.
4. Creating and editing a table.
5. Preparation of letters using mail merge.
6. Creation of simple reports using MS-Access.
7. Demonstration of Find,Replace,cut,pasting texts in a word document.
8. Creation of version charts (pie, tire,etc.,)
9. Creation of Animation pictures.
10. Table formatting.

**Second Year / Third Semester**

**Core Course III – Differential Equations and Laplace Transforms**

**Course Code : 08UMACA03** **Max Marks :75**

**Unit I**

Ordinary Differential Equations – First order but not of the first degree – Equations solvable for p , x and y – Clairaut's form –Second order differential equations with constant co-efficients – Purticular Integrals of the form $e^{\alpha x}$ V where V is of the form x , $x^2$ , sinax , cosax , xsinax and xcosax.

**Unit II**

Second Order Differential equations with variable co-efficients – both homogeneous linear equations and non – linear homogeneous equations – Method of variation of parameters – simple problems.

**Unit III**

Partial Differential Equations – Formation of Partial Differential equations by eliminating arbitary costants and arbitary functions – complete,particular , singular and general integrals – solution of equations of standard types f (p,q) = 0 , f (x,p,q) = 0 , f (y,p,q )=0 , f (z,p,q) = 0and f (x,p) = f (y,q) – Clairaut's form – Lagrange's equation Pp+Qq=R - problems.

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**Unit IV**

Laplace Transforms – Definition – Laplace transform of standard formulae – Elementary theorems – Laplace transform of periodic functions – problems.

**Unit V**

Inverse Laplace Transforms – Standard formulae – Elementary theorems – Applications to second order linear differential equations – Applications to simultaneous linear differential equations – problems.

**Text Books :**

| S.No | Name of the Book | Author | Publishing Company | Year of Publications |
|---|---|---|---|---|
| 1 | Calculus . | T.K.Manickavasagam pillai and S.Narayanan | Vijay Nicole Imprints Pvt Ltd # c-7,Nelson Chambers ,115, Nelson Manickam Road, Chennai -600029 | 2004 |
| 2. | Differential Equations, Fourier series and Analytical solid geometry. | Dr. P. R. Vittal | Margham Publications ,24, Rameswaram Road, T.Nager, Chennai - 600017 | 2000 |

**Reference Books :**

| S.No | Name of the Book | Author | Publishing company | Year of Publications |
|---|---|---|---|---|
| 1. | Ordinary & Partial differential Equations | M.D.Raisinghania | S.Chand & Co. Ltd. | 1993 |
| 2. | Introduction to Partial Differential Equations | K.Sankar Rao | Prentice Hall India – New Delhi m | 1997 |

**First year / Second semester**

**Elective Course I - Vector Analysis**

**Course Code – 08UMACA04** **Max Marks :75**

**Unit I**

Vector differentiation: Limit of a vector function – continuity and derivative of vector function - Geometrical and Physical significance of vector differentiation - Partial derivative of vector function – gradient and directional derivative of scalar point functions – Equations of tangent plane and normal line to a level surface.

**Unit II**

Vector point function: Divergence and curl of a vector point function – solenoidal and irrational functions – physical interpretation of divergence and curl of a vector point function.

**Unit III**

Vector identities – Laplacian operator.

**Unit IV**

Integration of vector functions – Line , surface and volume intergrals.

**Unit V**

Guass - Divergence Theorem – Green'sTheorem – Stoke's Theorem(statement only). Verification of theorems and simple problems using the theorems.

**Text Books :-**

| S.NO | Tiltle of the Book | Author | Publishing Company | Year of Publication |
|---|---|---|---|---|
| 1. | Vector Analysis | P.Duraipandian and others | S.Viswanathan and co, 38, McnicalsRoad, Chetpet,Chennai 31. | 1984. |
| 2. | Vector Analysis | Dr.P.R.Vittal | Margham publications, 24, Rameswaram Road, T.nagar, Chennai– 17. | 1997. |
| 3. | Vector Analysis | T.K. Manickavasagam and others. | Vijay Nicole Imprints Pvt Ltd, # c-7 Nelson Chambers, 115, Nelson Manickam Road, Chennai – 29. | 2004. |

**Reference Books :-**

| S.NO | Tiltle of the Book | Author | Publishing Company | Year of Publication |
|---|---|---|---|---|
| 1. | Vector Calculus | K.Viswanathan & S. Selvaraj | Emerald Publishers, 135,Anna Salai Chennai-2. | 1984. |
| 2. | Vector Calculus | J.N. Sharma & A.R. Vasishtha | Krishna Prakasan Mandhir,9,Shivaji Road, Meerut(UP). | |
| 3. | Vector Algebra | M.D. Raisinghania and others. | S. Chand & Co,Ltd., Ram Nagar New Delhi 110055. | 1999. |

**II -YEAR / IV - SEMESTER**

**Programming In C Language With Practical**

**Course Code – 08UMACA05** **Max Marks :50**

**Unit – I**

Introduction – Basic structure of C – programs – character set – keywords and Identifiers – constants – variables – data types – declaration of variables – Assigning values to variables – Defining symbolic constants , operators and Expressions.

**Unit – II**

Reading & writing a character – formatted input & output – IF – IF ELSE – ELSE IF ladder – switch statement - Operator – GO TO statement – WHILE – DO – FOR statement.

**Unit –III**

Array – introducing one dimensional & two dimensional arrays – initializing two dimensional arrays. Handing of character string.

**Unit – IV**

User defined functions – form of C functions – return values & their types – Calling a function – three categories of functions-. Structures and unions – introduction – structure definition – giving values to members – structures initialization – unions.

**Unit – V**

Pointers – introduction – understanding pointers accessing the address of a variables – declaring & initialization pointers. File management – Introduction – defining , opening and closing a file – I/O operation on files.

**Text Books :-**

| S.NO | Title of the Book | Author | Publishing Company | Year of Publication |
|---|---|---|---|---|
| 1. | Programming in ANSI C | E.Balagurusamy | Tata Mc Graw Hill Publications Co Ltd- Ed 2.1 | 1998 |

**Reference Books :-**

| S.NO | Title of the Book | Author | Publishing Company | Year of Publication |
|---|---|---|---|---|
| 1. | The Spirit of C | Mullish Copper | Jaico Publications | 1998 |
| 2. | Let US C | Yashwant Kanikar | BPB publications | 2002 |

**List of Practicals :**

**Course Code : 08UMACAP02 Max Marks : 25**

1. A program to calculate simple interest

2. A program to find the Airthmetic mean and standard deviation.

3. A program to add two matrices.

4. A program to multiply two matrices

5. A program to find the sine value without using built in function.

6. A program to find the roots of an equation using Newton-Raphson method.

7. A program to find the roots of a quadradic equation.

8. A program to solve the system of equations using Gauss –Seidel method

9. A program to find the F(X) value using Language interpolation.

10. A program to find the numerical integration value using trapezoidal rule.

11. A program to illustrate string handling functions

12. A program to write a character into the file and read the same.

**Second Year / Fourth semester**

**Skill Based Elective Course II – Aptitude Examination - II**

**Course Code : 08UMACAS02** **Max Marks :75**

**Unit I**

Chain rule –Time and work.

**Unit II**

Time and Distance .

**Unit III**

Problems on Trains.

**Unit IV**

Boats and Streams.

**Unit V**

Alligation or Mixture.

**Text Books :**

| S.No | Name of The Book. | Author | Publishing company | Year of Publication |
|---|---|---|---|---|
| 1. | Quantitative Aptitude For Competitative Examinations | R.S.Aggarwal | S.Chand and co Ltd,152,Annasalai,Chennai. | 2001 |

**Second Year / Fourth Semester**

**Skill Based Elective Course III – Aptitude Examination – III**

**Course code : 08UMACAS03** **Max Marks :75**

**Unit I**

Simple Interest.

**Unit II**

Compound Interest.

**Unit III**

Logarithms – Races And Games Of Skill.

**Unit IV**

Area.

**Unit V**

Volume and Surface Areas.

**Text Book :**

| S.No | Name of the Book | Author | Publishing company | Year of Publication |
|---|---|---|---|---|
| 1. | Quantitative Aptitude for competitative Examinations | R.S.Aggarwal | S.Chand and Co Ltd,152 ,Annasalai, Chennai. | 2001 |

**Third Year / Fifth semester**

**Core course VI – Algebraic Structures**

**Course code : 08UMACA06** **Max Marks :75**

**Unit I**

Group – Definition – Examples – Addition Modulo n – Multiplication Modulo n – Symmetric Group – Some Preliminary lemmas – problems - Order of an element –properties. (sections 2.1 – 2.3 ).

**Unit II**

Cyclic Groups – Sub Groups – Definition – Examples – Properties – Coset – Lagrange's Theorem - Normal sub groups - Quotient groups – properties – problems (sections 2.4 – 2.6).

**Unit III**

Homomorphism – Definition – Examples - Lemmas - Kernal of a homomorphism – Fundamental theorem – Automorphism – Definition – Inner Automorphism – Lemmas – Examples – Cayley's Theorem. ( Sections 2.7 – 2.9 excluding application 1 & 2).

**Unit IV**

Ring – Definition – Examples – some special classes of Rings – Zero Divisor – Integral Domain - Field - Definition –Examples-Ideals – Quotient Rings – Maximal ideal.(sections 3.1 , 3.2 , 3.4 & 3.5).

**Unit V**

The Field of Quotient of an Integral Domain – Euclidean Rings – Definition – Principal ideal Ring – Greatest common divisor – Properties – Unique factorization theorem (sections 3.6 & 3.7).

**Text Books :-**

| S.NO | Title of the Book | Author | Publishing Company | Year of Publication |
|---|---|---|---|---|
| 1. | Topics in Algebra | I.N.Herstein. | John Wiely, Newyork. | 1975 |

**Reference Books :-**

| S.NO | Title of the Book | Author | Publishing Company | Year of Publication |
|---|---|---|---|---|
| 1. | A first course in modern algebra | A.R.Vasistha | Krishna Prekasen Mandhir, 9, Shivaji Road, Meerut(UP) | 1983 |
| 2. | Modern Algebra | M.L.Santiago | Tata McGraw Hill ,New Delhi. | 1994 |
| 3. | Modern Algebra | K.Viswanatha Naik | Emerald Publishers, 135, Anna Salai, Chennai. | 1988 |
| 4. | A text Book of Modern Algebra | Dr.R.Balakrishnan and Dr.N.Ramabadran | Vikas Publishing House, NewDelhi | 1994 |

**Third Year / Fifth Semester**

**Core Course :VII - Sequences And Series**

**Course code : 08UMACA07** **Max Marks :75**

**Unit I**

Definition – Sequence and subsequence – Limit of a sequence – Convergent sequence – Divergent of sequences – Bounded sequences – Monotone sequences – Operations on convergent sequences(Section 2.1 - 2.7).

**Unit II**

Operations on divergent sequences – Limit superior and Limit Inferior – Cauchy sequences – Convergence and Divergence of series – Series with nonnegative terms – Alternating series – Conditional convergence – Absolute convergence. (Section 2.8 – 2.10 & 3.1 - 3.4 ).

**Unit III**

Rearrangement of series – Tests for absolute convergence – Series whose terms form a nonincreasing sequence – Summation by parts (section 3.4 – 3.8).

**Unit IV**

Vandermonde's Theorem - Binomial theorem for rational index with proof – Summation and approximation (section 4,5,10,14).

**Unit V**

Exponential and Lograthimic series with proof – Summation of series using the above two theorems and approximation.(section 1 - 11).

**Text Books :-**

| S.NO | Tiltle of the Book | Author | Publishing Company | Year of Publication |
|---|---|---|---|---|
| 1. | Methods of Real Analysis | Richard R. Goldberg . | Oxford &IBH Publishing Co.Pvt.Ltd. | 1970 |
| 2. | Algebra –Vol . I | T.K.Manickava sagam Pillai, Natarajan &Ganapathy | | |

**Reference Books :-**

| S.NO | Tiltle of the Book | Author | Publishing Company | Year of Publication |
|---|---|---|---|---|
| 1. | Mathematical Analysis. | Tom .M. Apostel | Narosa Publications ,New Delhi | 2002 |

**Third Year / Fifth Semester**

**Core Course :VIII – Discrete Mathematics**

**Course Code : 08UMACA08** **Max Marks :75**

**Unit I**

Mathematical Logic – Statements and Notations – Connectives – Negation - conjunction – Disjunction-Statement Formulas and Truth Table – Conditional and Biconditional – Well formed Formulas – Tautologies.(sections 1.1 , 1.2.1 – 1.2.4 , 1.2.6 –1.2.8).

**Unit II**

Normal Forms – Disjunctive Normal Forms – Conjunctive Normal Forms - Principal Disjunctive Normal Forms – Principal Conjunctive Normal Forms - Ordering and Uniqueness of Normal Forms – The Theory of Inference for the Statement Calculus – Validity using Truth tables - Rules of Inference - Consistency of premises and indirect method of proof .(sections 1.3.1 - 1.3.5 , 1.4.1 – 1.4.3).

**Unit III**

Relations &ordering – Relations – Properties of binary relation in a set - Functions – Definition & Introduction – Composition of Functions – Inverse function – Binary and n - array operations – Hashing Functions – Natural numbers – Peano Axioms &Mathematical Induction – Cardinality .

**Unit IV**

Algebraic systems – Definition & Examples – Semi groups and monoids – definition and examples – homomorphism of semi groups & monoids – sub semi groups & sub monoids – Grammars – Formal Definition of a Language – Notions of Syntax Analysis.( sections 3.1.1 , 3.1.2 , 3.2.1 , 3.2.2 , 3.2.3 , 3.3 , 3.3.2 , 3.3.3).

**Unit V**

Lattices as partially ordered Sets: Definition and Examples – some properties of Lattices – Lattices as Algebraic systems – sub Lattices – Direct product and homomorphism.

Boolean Algebra: Definition and Examples – subalgebra , Direct product and homomorphism – Boolean Functions – Boolean Forms and Free Boolean Algebras values of Boolean Expression and Boolean Functions ( sections 4.1.1 , 4.1.2 , 4.1.3 , 4.1.4 , 4.2.1 , 4.2.2 , 4.3.1 , 4.3.2 ).

**Text Books :-**

| S.NO | Title of the Book | Author | Publishing Company | Year of Publication |
|---|---|---|---|---|
| 1. | Discrete mathematical structures with applications to computer science | J.P.Trembly, R.Manohar | Tata Mc Graw Hill, NewDelhi | 2001 |

**Reference Books :-**

| S.NO | Title of the Book | Author | Publishing Company | Year of Publication |
|---|---|---|---|---|
| 1. | Discrete Mathematics | Prof.V.Sundaresan, K.S.Ganapathy Subramaniyan, K.Ganesan | Tata Mc Graw Hill, NewDelhi | 2000 |
| 2. | Discrete Mathematics | L.Lovarz, J.Pelikan, K.Vexztergombi | Springer International Edition | 2002 |

**III YEAR / V SEMESTER**

**Core Course IX - Visual Basic**

**Course code – 08UMACA09** **Max Marks :75**

**Unit – I**

Introduction – Data Access – developing for the internet , new control , VB's control set building controls in VB , IDE and VB – Development environment , Event – Driven programming , working with objects and controls – Tool Box , VB modules , Event driven code , designing a form.

**Unit – II**

Designing User Interface - visual elements of VB – Menus toolbars an tab strips Activex an other controls – status bars on Animation and timer events , Aligning controls , setting focus and Tab order: Right mouse button support working with printer , common dialog , Drivers , folders and files. Adding graphic and multimedia.

**Unit III**

Connecting a database – Building a database project – ODBC – DAO – RDO – ADO – OLEDB – DB – Controls building reports – Data environment.

**Unit IV**

Building Internet Application: Internet Basics with VB , HTML Basics , IIS and Active server pages , WEB class designer.

**Unit V**

IIS object model – Building DHTML applications – DHTML page designer , Building the interface.

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**Text Books :-**

| S.NO | Title of the Book | Author | Publishing Company | Year of Publication |
|---|---|---|---|---|
| 1. | Visual Basic 6.0-The complete Reference | Noel Jorke | TataMcGraw Hill Publication company,NewDelhi. | 2002 |

**Reference Books :-**

| S.NO | Title of the Book | Author | Publishing Company | Year of Publication |
|---|---|---|---|---|
| 1. | Visual Basis 6.0 | Corel | Tata Mc Graw Hill Publication company ,NewDelhi | 2002 |

**Third Year / Fifth semester**

**Elective Course II – Linear Programming**

**Course Code : 08UMACAE02** **Max Marks :75**

**Unit I**

Introduction - Definition of O.R. – Scope , phases and Limitations of O.R. – Linear Programming Problem – Definitions – Mathematical Formulation – Characteristic of a LPP – Matrix form of LPP – Graphical Method – Definitions of bounded , unbounded and optimal solutions – procedure of solving LPP by graphical method – problems – Simplex technique - Definitions of Basic , nonbasic variables – basic solutions – slack variables and optimal solution , simplex procedure of solving LPP – problems.

**Unit II**

Introduction – Big – M method – Definitions of Big – M method , surplus variables and artificial variables – Procedure of solving an LPP by Big – M method – Pseudo optimal solution – Problems – Two – Phase Simplex method – Procedure of solving an LPP by two – phase simplex method – problems.

**Unit III**

Introduction – Balanced and unbalanced T.P , Feasible solution – Basic feasible solution – Optimum solution – degeneracy in a T.P. – Mathematical formulation – North – West Corner rule – Vogell's approximation method (unit penalty method) - Method of Matrix minima (Least cost Method) – problems – algorithm of Optimality test (Modi Method) – Problems .

**Unit IV**

Assignment problem – Definition – Mathematical formulation of the Assignment problem – Test for optimality by using Hungarian method - Unbalanced Assignment problem – Degeneracy in Assignment problem - Maximization case in Assignment problem – Restrictions on Assignment problem – Variations in Assignment problem – problems .

**Unit V**

Introduction – Definition – Basic assumptions – n jobs to be operated on two machines – problems – n jobs to be operated on three machines – problems – n jobs to be operated on m machines – problems – Two jobs to be operated on 'm' machines (graphical method) – problems.

**Text Books :-**

| S.NO | Title of the Book | Author | Publishing Company | Year of Publication |
|---|---|---|---|---|
| 1. | Operations Research, Ninth Edition | P.K.Gupta, Man Mohan and Kanti Swarup | Sultan Chand and Sons, New Delhi | 2001 |

**Reference Books :-**

| S.NO | Title of the Book | Author | Publishing Company | Year of Publication |
|---|---|---|---|---|
| 1. | Operations Research, Second Edition | S.Kalavathy | Vikas Publishing House, New Delhi | 2002 |
| 2. | Operations Research, Second Edition | P.K.Gupta and D.S.Hira | S.Chand & Co, NewDelhi | 2004 |
| 3. | Operations Research | Hamdy Taha | Prentice Hall Publications, NewDelhi | 1996 |

**Third Year / Fifth Semester**

**Skill Based Elective Course IV – Aptitude Examination – IV**

**Course code : 08UMACAS04** **Max Marks :75**

**Unit I**

Calender and Clocks.

**Unit II**

Stocks and Shares.

**Unit III**

Permutations and Combinations - Probability.

**Unit IV**

True Discount and Banker's Discount.

**Unit V**

Heights and Distances – Odd Man Out and Series.

**Text Book :**

| S.No | Name of the Book | Author | Publishing Company | Year of Publications |
|---|---|---|---|---|
| 1. | Quantitative Aptitude for Competitative Examinations | R.S.Aggarwal | S.Chand Co Ltd,152,Annasalai,Chennai. | 2001 |

## Skill Based Elective Course V – MATLAB

**Course Code : 08UMACAS05** **Max Marks :75**

### Unit I

A simple Mathematical Model – Conservation laws in Engineering and Science – Numerical Methods Coverd in this Book (Chapter I –Full).

### Unit II

The MATLAB Environment – Assignment – Mathematical operations – Use of Built - in Functions – Graphics – Other Resources – Case study – Exploratory Data Analysis.
(Chapter II – Full )

### Unit III

M – Files – Input – Output – Structured Programming – Nesting And Indentation (Chapter III –section 3.1 - 3.4).

### Unit IV

Passing Functions To M – Files – Case Study :Bungee Jumper Velocity (Chapter 3 – Section 3.5 – 3.6

### Unit V

Errors 80 – Round Off Errors – Truncation Errors – Total Numerical Error – Blunders – Model Errors – Data Uncertainty (Chapter IV – Full).

**Text Books:**

| S. NO | Title of the Book | Author | Publishing company | Year of Publication |
|---|---|---|---|---|
| 1 | Applied Numerical Methods with MATLAB for Engineers And Scientists | Steven C. Chapra | TATA Mc Graw –Hill Publishing company Ltd. | 2007 |

**Reference Books :**

| S.No. | Title Of The Book | Author | Publishing company | Year Of Publication |
|---|---|---|---|---|
| 1. | Technical Analysis and applications with Matlab | Stanley | Prinded and bounded in India by Barkha Nath Printers ,Delhi | I Indian Reprint 2007 |
| 2 | Aguide to Matlab For Beginnners and Experienced users | Brian –R.Hunt,Ronald l.Lipsman ,Jonathan.m.Rosenberg | Printed in India at Raplika press Pvt Ltd, Kundly,Cambridge University press. | Reprint 2005 |

**Third Year / Sixth Semester**

**Core Course X – Linear Algebra**

**Course Code : 08UMACA10** **Max Marks :75**

**Unit I**

Vector Spaces – Definition – Simple properties – Examples – Homomorphism – Sub space – Quotient spaces – Internal direct sum – External direct sum.(Section 4.1).

**Unit II**

Linear Independence – Dimension of a Vector space – Bases - Dimension of Quotient spaces (Section 4.2).

**Unit III**

Inner product spaces – Definition – Examples – Applications – Orthogonal complement of a sub space – Orthonormal & Orthonormal Basis - Gram Schmidt Orthogonalization process (Section 4.4) .

**Unit IV**

Linear Transformation – The Algebra of linear transformations - Characteristic roots – Matrices – Canonical forms – Triangular forms(section 6.1 - 6.4)

**Unit V**

Nilpotent Transformations – Definitions – Lemma – Theorems Trace and Transpose – Definition – Properties – Theorems.

**Text Books :-**

| S.NO | Title of the Book | Author | Publishing Company | Year of Publication |
|---|---|---|---|---|
| 1. | Topics in Algebra-2nd Edition | I.N.Herstein | John Wiely, NewYork | 1975 |

**Reference Books :-**

| S.NO | Title of the Book | Author | Publishing Company | Year of Publication |
|---|---|---|---|---|
| 1. | A first course in modern algebra | A.R.Vasistha | Krishna Prakasan Mandhir, 9, Shivaji Road, Meerut (UP) | 1983 |
| 2. | Modern Algebra | Viswanatha Naik | Emerald Publishers, 135, Anna Salai, Chennai –2. | 2001 |
| 3. | A Text Book of Modern Algebra | Dr.R.Balakrishnan and Dr.N.Ramabadran | Vikas Publishing Limited, NewDelhi | 1984 |

**Third Year / Sixth Semester**

**Core Course XI : Java Programming with Practical**

**Course Code : 08UMACA11** **Max Marks : 50**

**Unit I**

Basic Concepts of Object – Oriented Programming – Objects and classes – Data Abstraction and Encapsulation – Inheritance – Polymorphism – Dynamic Binding – Message Communication – Java features – Java Environment – Java Program structure – Java Virtual Machine .

**Unit II**

Introduction – constants – Variables – Data Types – Declaration of Variables - scope of variables – Type casting – Operators and Expressions – Decision making and Branching – Decision making and looping .

**Unit III**

Classes – Objects and Methods – Arrays – Strings - Interfaces – Multiple Inheritance .

**Unit IV**

Packages – Multithreaded Programming – Managing Errors and Exceptions.

**Unit V**

Applet Programming – Introduction – Building Applet Code - Applet Life Cycle – Creating an Executable Applet – Designing a Web Page - Applet Tag – Adding Applet to HTML file – Running the Applet - Managing I/O files in Java.

**Text Book :**

| S.No | Name of the Book | Author | Publishing Company | Year Of Publication |
|---|---|---|---|---|
| 1. | Programming with Java a Primer | E.Balagurusamy | Tata McGraw Hill Publications Co ,Ltd, New Delhi | 1998 |

**Reference Book :**

| S.No | Name of the Book | Author | Publishing Company | Year of Publication |
|---|---|---|---|---|
| 1. | The complete Reference –Java - 2 | Patrick Naughhton and Herbert Schedelt | Tata McGraw Hill Publishing Co .Ltd, New Delhi -3rd Edition | 2000 |
| 2. | Java -2 Fourth Edition , | Herbert Schedelt | | |

**List of Practicals :**

**Course Code : 08UMACAP03** **Max Marks : 25**

1. Using Java Classes and Objects .

2. Using Java Inheritance and interface.

3. Using Arrays in Java.

4. Using Exceptions .

5. Using Threads and Multi threads

6. Using I/O Package.

**Third Year / Sixth Semester**

**Core Course XII – Complex Analysis**

**Course Code : 08UMACA12** **Max Marks :75**

**Unit I**

Functions of a complex variable – Limit of a function at a point – Theorems on limits – continuity – Derivatives – Cauchy – Riemann equations – Necessary and sufficient conditions – Analytic function – Examples - Harmonic Function – Properties – To find an analytic function whose real and imaginary part is given.

**Unit II**

Bilinear transformations - Definition - Properties – Invariance of cross ratio – Fixed points – problems – Special bilinear transformations - problems.

**Unit III**

Simply connected domain – Cauchy's fundamental theorem – proof using Goursat's lemma – Cauchy's theorem for multiply connected domains – Cauchy's integral formula & Cauchy's formula for the first derivative – Morera's theorem - problems.

**Unit IV**

Cauchy's Inequality – Liouville's theorem - Fundamental Theorem of Algebra – Maximum modulus theorem – Taylor's series – Laurent's series – problems .

**Unit V**

Singularities – Types of singularities – Isolated singularity – Removable Singularity Pole - Essential singularity – Determination of the nature of singularity – Residue –Definition – calculation of residues – Cauchy's residue theorem – Contour Integration Integration around unit circle - Integration along the real axis – Jordan lemma (statement only ) - Integration of functions with poles on the real axis.

**Text Books :-**

| S.NO | Title of the Book | Author | Publishing Company | Year of Publication |
|---|---|---|---|---|
| 1. | Complex Variables and Applications | Ruel V Churchill | Mc Graw Hill International Book Company, Newyork. | 1986 |
| 2. | Complex Analysis | P.Duraipandian & Laxmi Duraipandian, D.Muhilan | Emerald Publishers, 135, Anna Salai, Chennai – 600 002 | 1988 |

**Reference Books :-**

| S.NO | Title of the Book | Author | Publishing Company | Year of Publication |
|---|---|---|---|---|
| 1. | Theory and Problems of complex analysis | Murray | Schuam Outline Series | 1986 |
| 2. | Functions of a complex Variable | B.S.Tyagi | Krishna Prakasan Mandhir, 9, Shivaji Road, Meerut (UP) | 1985 |
| 3. | Functions of a complex Variable | J.N.Sharma | Krishna Prakasan Mandhir, 9, Shivaji Road, Meerut (UP) | 1985 |
| 4. | Functions of a complex Variable | M.L.Khanna | Jai Prakash Nath, Meerut (UP) | 1986 |

**Third Year / Sixth Semester**

**Core Course XIII – Graph theory**

**Course code : 08UMACA13** **Max Marks :75**

**Unit I**

Introduction – Definition – Examples – Degrees – Definition – Theorem 1and corollary – Theorem 2and problems –subgraphs – definitions – Theorem – 1 - Operations on Graphs - definition – Theorem - 1 – problems.

**Unit II**

Introduction – Walks , Trails and paths – Definitions - Theorem – 1,2,3 - Connectedness and components –Definitions – Theorem – 1,2,3 - Definition – Distance – Theorem 1 – Definitions – Cut , Point , Bridge – Theorem 1,2,3,4 –Blocks – Definition – Theorem 1 – Connectivity – Definition – Theorem 1 - Definition.

**Unit III**

Introduction – Eulerian Graphs - definition – Lemmas 1 – Theorem – 1 - Koningsberg Bridge Problem – Corollary I and II – Definition – Theorem - Fleury's Algorithm – Hamiltonian Graphs – Definitions – Theorem 1,2,3 – Lemma – Definition (closure ) - Theorem 1,2 – corollary – Theorem.

**Unit IV**

Introduction – Characterization of Trees – Theorem I – Corollary – Theorem 2 with corollary – Theorem 3 – Center of a Tree – Definition – Theorem.

**Unit V**

Introduction – Definition Basic Properties – Definitions – Theorem 1 - Definitions – Theorem 2 - Definitions – Paths and connections – Definition - Theorem 1 - Definitions – Theorem 2 – Digraphs and Matrices – Definition– Theorem 1-Definition – Theorem 2 – Definition – Theorem 3 .

**Text Books :-**

| S.NO | Title of the Book | Author | Publishing Company | Year of Publication |
|---|---|---|---|---|
| 1. | Invitation to Graph Theory | S.Arumugam, S.Ramachandran | Scitech Publications,Chennai | 2001 |

**Reference Books :-**

| S.NO | Title of the Book | Author | Publishing Company | Year of Publication |
|---|---|---|---|---|
| 1. | Basics of Graph Theory | K.R.Parthasarathy | TMH Publishing company | 2001 |
| 2. | Graph theory | S.Kumaravelu and suseela kumaravelu | SKV Printers | 1996 |
| 3. | A first course in Graph theory | A.Chandran | Macmillan Publishers, Chennai | 1997 |

**Third Year / Sixth Semester**

**Elective Course III – Object Oriented Programming with C++**

**Course Code : 08UMACAE03** **Max Marks :75**

**Unit I**

Object oriented concepts – Objects – Classes – Encapsulation – Inheritance – Polymorphism – Basics of C++
- Environment – Data types – Variables – Keywords – Operators – Control statements – Functions .

**Unit II**

Definition – Data members – Function members – Access Specifiers – Constructors - Default constructor – This Pointer

**Unit III**

Inheritance and Overloading : Overloading arithmetic operators – Binary – Unary operators – Relation operators – Inheritance – derived class and base class members – multilevel and multiple inheritance

**Unit IV**

Polymorphism: Virtual function – pure virtual function – Abstract class – Friend function – Friend class static members – copy constructors.

**Unit V**

Class Templates – function templates – Exception handling streams.

**Text Books :**

| S.No | Name of the Book | Author | Publishing company | Year of Publication |
|---|---|---|---|---|
| 1. | C++ | E.Balagurusamy | Tata McGraw Hill Publication co Ltd ,New Delhi | 2000 |

**Reference Books :**

| S.No | Name of the Book | Author | Publishing Company | Year of Publication |
|---|---|---|---|---|
| 1. | TURBO C++ | Robert Lafore | Galgotia Publications ,New Delhi | 2001 |
| 2. | Programming with C++ | Dr.Ravichandran | Tata McGraw Hill, NewDelhi | 2002 |
| 3. | LET US C++ | Yashwant Kanethkar | BPB Publishers ,NewDelhi | 2004. |

**Third Year / Sixth Semester**

**Skill Based Elective Course VI – CHILAB**

**Course Code : 08UMACAS06** **Max Marks :75**

**Unit I**

Introduction – Learning Scilab – Further References – Starting Scilab – Typing Commands.

**Unit II**

Simple calculations : Basic Arithmetic – Complex Numbers.
Help in Scilab : The Help Command – The Help Window – Help on the Web.

**Unit III**

Adding a Line – Hints for Good Graphs – Plot data as points – Choose a good scale.

**Unit IV**

Solving Equations - Matrices and Vectors – Creating Matrices – Systems of Equations – Polynomials.

**Unit V**

Graphs – Function Plotting – Component Arithmetic – Printing Graphs – Graphs in Reports – Advanced Graphics.

**Text Book :**

| S.No | Name of the Book | Author | Publishing Company | Year Of Publication |
|---|---|---|---|---|
| 1. | Introduction to Scilab | Graeme Chandler,Stephen Roberts | - | August 7, 2002 |

**List of Examiners and Question Paper Setters:-**

1. Dr.A.Mudhusamy,
   Reader and Head of the Department,
   Bharathidasan University,
   Trichy – 24.

2. Dr.C.Durairajan,
   SG Lecturer in Mathematics,
   Department of Mathematics,
   Bharathidasan University ,
   Tiruchirapalli - 620023

3. Dr.E.Chandrasekaran ,
   Reader in Mathematics,
   Presidency college ,
   Chennai

.

4. Prof. S.Selvarangam
   S.G. Lecturer in Mathematics ,
   Presidency College,
   Chennai.

5. Dr.Ponnusamy,
   Reader in Mathematics,
   Government Arts College,
   Coimbatore.

6. Dr.Sitrarasu,
   H.O.D. of Mathematics,
   Kongu Nadu Arts and Science College,
   Coimbatore.

7. Dr.T.Thamizhselvan,
   Prof. and Head of the Department,
   Manonmaniam Sundaranathar University,
   Tirunelveli.

8. Dr, Asokan ,
   Lecturer, Department of Mathematics,
   Madurai Kamaraj University,
   Madurai.

9. Dr.R.Usha ,
   Reader in Mathematics,
   QueenMary's College,
   Chennai.

10. Mr. S. Karthikeyan M.Sc.,M.Phil,
    S.G.Lecturer in Mathematics,
    Erode Arts College (Autonomous ),
    Erode.

11. Mr. P. M. Selvaraj M.Sc.,M.Phil,
    S.G.Lecturer in Mathematics,
    Erode Arts College (Autonomous)
    Erode.

12. Mr. M.Chandrasekaran M.SC.,M.Phil,
    S.G.Lecturer in Mathematics,
    Erode Arts College (Autonomous )
    Erode.

13. Tmt .P.Sampooranam M.Sc.,M.Phil,
    S.G.Lecturer in Mathematics
    Government Arts College (Autonomous),
    Coimbatore.

14. Tmt. Jayanthi Sivananda M.Sc., M.Phil,
    S.G.Lecturer in Mathematics,
    Government Arts College (Autonomous)
    Coimbatore.

15. Tmt.N.Jayanthi M.Sc,M.Phil,
    S.S.Lecturer in Mathematics,
    Government Arts College (Autonomous),
    Coimbatore.

16. Tmt.P.Kannayammal M.Sc,M.Phil,
    S.G.Lecturer in Mathematics,
    Chikaiya Naicker College,
    Veerappan Chattram,
    Erode.