B.Sc.,Mathematics

Employability **Entrepreneurship** **Skill Development**

Name of the Programme	Course Code	Title of the Course	Employability	Entrepreneurship	Skill development
B.Sc., Mathematics	BMS1Y	SBE I -Statistical Programming using SPSS	✓	✓	✓
	BMS2	SBE II -Quantitative Aptitude	✓		
	BME1	NME I – Mathematics for Competitive Examinations	✓	✓	✓
	BME2	NME II – Mathematics for Competitive Examinations	✓	✓	✓
	BME3	MBE – I Operations Research	✓		
	BMS3Y	SBE III -Document Preparation System Using Latex	✓	✓	✓
	BME4	MBE II – Discrete Mathematics	✓		
	BME5	MBE III – Graph Theory	✓		
	BMNY	CC XIII – Numerical Methods with C Programming Practical's	✓	✓	✓

EMPLOYABILITY

Semester-IV / SBE I	**Statistical Programming Using Computational Packages**	**Course Code:BMS1Y**
Instruction Hours: 2	**Credits: 2**	**Exam Hours: 3**
Internal Marks :25	**External Marks:75**	**Total Marks: 100**

Course Objectives:

- To know the computational methods for solving mathematical problems.
- To understand the computational methods for drawing simple and multiple bar diagrams.
- To learn the computational methods on histogram concepts.
- To study the computational methods on correlation and regression.
- To interpret the computational methods on t-test and goodness of fit

List of Practicals:

1. Mean, Median and Mode.
2. Standard Deviation
3. Simple Bar Diagram
4. Multiple Bar Diagram.
5. Pie Diagram.
6. Histogram.
7. Correlation.
8. Regression.
9. Paired t – test for Means.
10. Chi – Square test for Goodness of fit.

Text Book:

1. P. Chandran, A. Rajathi, SPSS For U, MJP Publishers, 2010.

Reference Books:

1. Kiran Pandya, Addison-Wesley, Dreamtech Press, 2011.
2. K. V. S. Sharma, Statistics Made Simple: Do it Yourself on PC, Prentice Hall India Learning Private Limited, 2010.

E- Resources:

1. https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwizkauQg93yAhXEjOYKHedoBKYQFnoECAYQAQ&url=http%3A%2F%2Fwww.academia.dk%2FBiologiskAntropologi%2FEpidemiologi%2FPDF%2FSPSS_Statistical_Analyses_using_SPSS.pdf&usg=AOvVaw18WQeOj5jEKncZ9x89ryZ1
2. https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwiR4f_0g93yAhXh4nMBHVmvB-0QFnoECCQQAQ&url=http%3A%2F%2Fwww.hstathome.com%2Ftjziyuan%2FSPSS%2520for%2520beginner%2520428pages.pdf&usg=AOvVaw0LtoFtB-B_0-6BFOp-43Bp

Course Outcomes

On completion of the course the learner will be able to

CO 1: Use the computational methods for solving mean, median, mode and standard deviation.

CO 2: Draw simple and multiple bar diagrams.

CO 3: Apply the computational methods on histogram concepts.

CO 4: Compute correlation and regression.

CO 5: Evaluate t-test and goodness of fit

EMPLOYABILITY

Semester-V / SBE-II	**Quantitative Aptitude**	**Course Code: BMS2**
Instruction Hours: 2	**Credits: 2**	**Exam Hours: 3**
Internal Marks -25	**External Marks-75**	**Total Marks: 100**

Cognitive Level	**K 1 -** Acquire/ Remember **K2 -** Understand **K3** - Apply **K4** - Evaluate **K5** - Analyze **K6** - Create
Course Objectives	• To learn puzzles. • To know the time series problems. • To study the arithmetical reasoning problems. • To identify the missing characters. • To get the logical ability.

UNIT	CONTENT	HOURS
Unit I	**Problems on puzzles :** Blood Relation - Puzzle Test	**6**
Unit II	**Mathematical Operations**: Number, Ranking and Time Series Test - Mathematical Operations.	**6**
Unit III	**Problems on reasoning:** Arithmetical Reasoning	**6**
Unit IV	**Puzzles on missing character:** Inserting the Missing character.	**6**

Unit V	**Logical Reasoning:** Data sufficiency – Logical Sequence of Words.	**6**

Text Book:

1. R.S.Agarwal, "A modern approach to Verbal and Non-verbal Reasoning" , S.Chand& Company Ltd, Delhi.

Reference Books:

1. Arun Sharma, Teach Yourself Quantitative Aptitude, Mc GrawHill Education, 2017.
2. Dinesh Khattar, The Pearson Guide to Quantitative Aptitude for Competitive Examinations, Pearson Publications, 2014.

Web- Resources:

1. https://www.splessons.com/lesson/profit-loss-problems/
2. https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwiQ7pHb9tzyAhWp7HMBHcEbBcEQFnoECAMQAQ&url=https%3A%2F%2Fgradeup.co%2Fquantitative-aptitude-practice-questions-answers-pdf-i&usg=AOvVaw11iv2GCS3pvGLz9i2Nd48L

Course Outcomes:

On completion of the course the learner will be able to

CO 1: Solve all types of puzzles.

CO 2: Calculate the time series.

CO 3: Discuss the arithmetical reasoning problems.

CO 4: Find the missing characters.

CO 5: Interpret the logical ability problems.

EMPLOYABILITY

Semester-III / NME I	Mathematics For Competitive Examinations I	Course Code:BME1
Instruction Hours: 2	Credits: 2	Exam Hours: 3
Internal Marks -25	External Marks-75	Total Marks: 100

Cognitive Level	**K 1 -** Acquire/ Remember **K2 -** Understand **K3** - Apply **K4** - Evaluate **K5** - Analyze **K6** - Create
Course Objectives:	• To study the problems on series. • To understand the coding and decoding. • To learn the problems relating blood relation. • To know about the mathematical puzzles. • To interpret the logics using venn diagram

UNIT	CONTENT	HOURS
Unit I	Series Completion: Number Series - Alphabet Series.	6
Unit II	Coding and Decoding: Letter Coding – Number Coding –Matrix Coding	6
Unit III	Blood Relation: Deciphering jumbled up descriptions – Relation Puzzle – Coded Relations.	6
Unit IV	Puzzle Test: Seating / Placing arrangements – Comparison Test.	6
Unit V	Venn Diagram Direction Sense Test – Logical Venn Diagram.	6

Text Book:

1. **R.S. Agarwal, A modern approach to Verbal and Non-Verbal Reasoning, S.Chand& Company Ltd, New Delhi- 55.**

Reference Books:

1. Dinesh Khattar, The Pearson Guide to Quantitative Aptitude for Competitive Examinations, Pearson Publications, 2014.
2. Arun Sharma, Teach Yourself Quantitative Aptitude, Mc GrawHill Education, 2017.

Web - Resources:

1. https://www.splessons.com/lesson/profit-loss-problems/
2. https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwiQ7pHb9tzyAhWp7HMBHcEbBcEQFnoECAMQAQ&url=https%3A%2F%2Fgradeup.co%2Fquantitative-aptitude-practice-questions-answers-pdf-i&usg=AOvVaw11iv2GCS3pvGLz9i2Nd48L

Course Outcomes:

On completion of the course the learner will be able to

CO1: solve the problems on series.

CO2: write the coding and decoding.

CO3: evaluate problems on blood relation

CO4: solve mathematical puzzles

CO5: compute problems using venn diagram.

Semester-IV / NME -II	**Mathematics For Competitive Examinations II**	**Course Code: BME2**
Instruction Hours: 2	**Credits: 2**	**Exam Hours: 3**
Internal Marks :25	**External Marks:75**	**Total Marks: 100**

Cognitive Level	**K 1 -** Acquire/ Remember **K2 -** Understand **K3** - Apply **K4** - Evaluate **K5** - Analyze **K6** - Create	
Course Objectives:	• To learn the problems solving techniques for numbers. • To study the operations on numbers. • To develop arithmetical skills. • To know about puzzles. • To enhance the facts of logical reasoning	
UNIT	CONTENT	HOURS
Unit I	Number, Ranking and Time Series Test Number Test – Ranking Test – Time sequence Test.	6
Unit II	Mathematical Operations: Problem Solving by Substitution – Interchange of signs and numbers – Deriving the appropriate conclusion.	6
Unit III	Arithmetical Reasoning Calculation based Problem – Data based question – Problem on ages – Venn diagram based questions.	6

Unit IV	Missing Characters Inserting the Missing character.	6
Unit V	Logical Reasoning Data sufficiency – Logical Sequence of Words – Logical Reasoning.	6

Text Book:

1. R.S. Agarwal, A Modern Approach to Verbal and Non-Verbal Reasoning, S. Chand & Company Ltd, New Delhi- 55.

Reference Books:

- Dinesh Khattar, The Pearson Guide to Quantitative Aptitude for Competitive Examinations, Pearson Publications, 2014.
- Arun Sharma, Teach Yourself Quantitative Aptitude, Mc GrawHill Education, 2017.

Web- Resources:

1. https://www.splessons.com/lesson/profit-loss-problems/

2. https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwiQ7pHb9tzyAhWp7HMBHcEbBcEQFnoECAMQAQ&url=https%3A%2F%2Fgradeup.co%2Fquantitative-aptitude-practice-questions-answers-pdf-i&usg=AOvVaw11iv2GCS3pvGLz9i2Nd48L

Course Outcomes:

On completion of the course the learner will be able to

CO1: Develop quantitativeability.

CO2: Apply mathematicaloperations.

CO3: Decipher arithmeticalreasoning

CO4: Solve logicalreasoning.

CO5: Crack competitiveexaminations.

Semester-V / MBE I	Operations Research	Course Code:BME3
Instruction Hours: 6	Credits: 5	Exam Hours: 3
Internal Marks :25	External Marks:75	Total Marks: 100

Cognitive Level	**K 1 -** Acquire/ Remember **K2 -** Understand **K3** - Apply **K4** - Evaluate **K5** - Analyze **K6** - Create	
Course Objectives	**The Course aims** • To find the solution of the LPP using graphical method. • To understand different types of LPP. • To solve Transportation Problem using various methods. • To introduce Assignment Problem and solve it. • To explore the concepts of Network Analysis and rules of network construction	
UNIT	**CONTENT**	**HOURS**
Unit I	**Linear Programming Problem(Mathematical Formulation):** Mathematical Formulation of L.P.P – Graphical Solution – Introduction – Graphical Solution method – Some exceptional cases – General Linear Programming Problem – Canonical and Standard form of LPP – Simplex method – Introduction - The computational Procedure.	**18**

Unit II	**Linear Programming Problem(Simplex Method):** Use of Artificial Variables – Two – Phase Method – Duality in Linear Programming problem – Introduction – General primal- Dual Pair– Formulating a dual Problem – Duality and Simplex Method– Dual Simple Method.	**18**
Unit III	**Transportation Problem:** Introduction– LP Formulation of the Transportation problem –Existence of solution in TP –Duality in Transportation problem –The Transportation Table – Loops in Transportation Tables –Triangular basis in TP –Solution of a Transportation problem –Finding an Initial Basic feasible Solution – Test for Optimality – Transportation Algorithm (MODI Method).	**18**
Unit IV	**Assignment problem:** Introduction –Mathematical formulation of the problem – Solution methods of Assignment algorithm – The Travelling Salesman Problem.	**18**
Unit V	**Network Scheduling by PERT/ CPM:** Introduction– Network and Basic Components – Logical Sequencing –Rule of Network Construction – Concurrent Activities – Critical Path Analysis – Probability considerations in PERT –Distinction between PERT and CPM –Applications of Network Techniques.	**18**

Text Book:

1. Kanti Swarup, P.K. Gupta and Man Mohan, Operations Research, Sultan Chand and Sons , Educational Publishers, New Delhi, 2014

Reference Books:

1. V. Sundaresan, K. Ganesan, Resource Managemant Techniques, A.R. Publications, 2002 .
2. J.K.Sharma, Operations Research Theory and Applications, Macmillan India Ltd, 3rd edition, 2006.

E- Resources:

1. **https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwji3JTx_tfyAhWS8XMBHSA4C40QFnoECAsQAQ&url=http%3A%2F%2Fwww.ru.ac.bd%2Fstat%2Fwp-content%2Fuploads%2Fsites%2F25%2F2019%2F03%2F405_01_Srinivasan_Operations-Research_-Principles-and-Applications-Prentice-Hall-of-India-2010.pdf&usg=AOvVaw2dnrAYWf2nwV5__kL0Q5V9**

2. https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwihrbini93yAhXe4nMBHRw4DwIQFnoECAoQAQ&url=https%3A%2F%2Fprolightinggroup.com%2Fwp-content%2Fuploads%2F2020%2F08%2FOperations-Research-and-Management-Science-Handbook.pdf&usg=AOvVaw2uoiENWCkpg0CjXMtRe5Jk

Course Outcomes

On Completion of the Course, Students should be able to

CO1 : Analyze and solve linear programming models of real life situations

CO2 : Understand the problem solving method of Simplex and Big M Method.

CO3 : Exhibit the applications of Transportation Problem.

CO4 : Solve Assignment problems.

CO5 : Use PERT and CPM techniques in solving Network Analysis problems

Semester-V / SBE-III	**Document Preparation System Using Latex**	**Course Code:BMS3Y**
Instruction Hours: 2	**Credits: 2**	**Exam Hours: 3**
Internal Marks :25	**External Marks:75**	**Total Marks: 100**

Cognitive Level	**K 1 -** Acquire/ Remember **K2 -** Understand **K3** - Apply **K4** - Evaluate **K5** - Analyze **K6** - Create	
Course Objectives:	• To introduce the fundamentals of Latex. • To know the symbols and arrays in Latex. • To study the commands and floating body in Latex. • To know the table of contents, sections and paragraphs. • To understand the page breaking, numbering and listing environment.	
UNIT	**CONTENT**	**HOURS**
Unit I	**Introduction:** Preparing Inputs – Sentences and Paragraphs (Quotation mark, dashes, Space after a period, Special Symbols and Simple text Generating Commands).	**6**
Unit II	**Sectioning the document:** Document classes – Sectioning – Changing the text style – Accents, Symbols – Mathematical Formulas and Symbols – Arrays – Delimeters and Multiline Formulas.	**6**

Unit III	**Commands and Floating Bodies:** Defining commands and environments – Figures and Floating Bodies – marginal Notes – Lining up in Columns.	**6**
Unit IV	**Table of contents and Citations:** Creating Table of Contents – Cross References – Bibliography and Citations – Splitting Your Input – Making Index and Glossary – Keyboard Input and Screen Output.	**6**
Unit V	**Page break and numbering:** Slides and Overlays – Notes – Printing only some slides and Notes – Letters – Lining and Page Breaking – Numbering – Length, spaces and boxes – List making Environments.	**6**

Text Book:

1. A Document Preparation System Latex, By Leslie Lamport, Addison-Wesley Publications, 1994.

Reference Books:

1. Stefan Kottwitz, Latex Beginner's Guide: Create high-quality, professional-looking documents and books for business and science using LaTeX, PacktPublishing, 2011.
2. S. Swapna Kumar, LATEX - A Beginner Guide to Professional Documentation, Laxmi Publications Pvt Ltd, 2020.

Web- Resources:

1. https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwjRoMX0pNjyAhUp8HMBHZgDC5UQFnoECAIQAQ&url=http%3A%2F%2Fwww.docs.is.ed.ac.uk%2Fskills%2Fdocuments%2F3722%2F3722-2014.pdf&usg=AOvVaw1rdgIk6SR2IqqtgFZ5xOIq

2. https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwilt4mQveTyAhXQcn0KHRAmD48QFnoECAMQAQ&url=https%3A%2F%2Frkdf.ac.in%2FEresources%2F2.%2520Introduction%2520to%2520LaTeX.pdf&usg=AOvVaw1TlSC8kRn7MZmBfFhYooxA

Course Outcomes:

On completion of the course the learner will be able to

CO 1: Interpret the fundamentals of Latex.

CO 2: Apply the symbols and arrays in Latex.

CO 3: Compile the commands and floating body in Latex.

CO 4: Write table of contents, sections and paragraphs.

CO 5: Put page break, number the contents and list the environment

Semester-VI / Elective Course-I(EC)	**Discrete Mathematics**	**Course Code: BME4**
Instruction Hours: 5	**Credits: 4**	**Exam Hours: 3**
Internal Marks:25	**External Marks:75**	**Total Marks: 100**

Cognitive Level	**K 1 -** Acquire/ Remember **K2 -** Understand **K3** - Apply **K4** - Evaluate **K5** - Analyze **K6** - Create	
Course Objectives	**The Course aims** • To know Formal Languages • To understand the concept of permutations and Combinations • To study about Finite State Machines • To gain the knowledge of Numeric Functions • To know the concept of Recurrence Relations.	
UNIT	**CONTENT**	**HOURS**
UNIT I	**Computability And Formal Languages** Languages – Phrase structure grammars – Types of grammars and languages.	**15**
UNIT II	**Permutations , Combinations and Discrete Probability** Introduction – The Rules of sum and Product – Permutations – Combinations – Generation of permutations and combinations.	**15**
UNIT III	**Finite State Machines** Introduction – Finite State Machines – Finite State Machines as Models of Physical systems – Equivalent Machines – Finite State Machines as language recognizers.	**15**

UNIT IV	**Discrete Numeric Functions and Generating Functions** Introduction – Manipulation of Numeric functions – Asymptotic behaviour of Numeric functions – Generating functions.	**15**
UNIT V	**Recurrence Relations and Recursive Algorithms** Introduction – recurrence relations – linear recurrence relations with constant co – efficients – Homogeneous solutions – Particular solutions – Total solutions.	**15**

Text Books:

1. C.L. Liu, Elements of Discrete Mathematics, McGraw Hill Book Company, Second edition, 1985.

Reference Books

1. Knuth D.E – The art of ComputerProgramming , Volume III , Addison – Wesley Publishing Company, 19
2. Hopcraoft J.E. and J.D. Ullman – Introduction to Automata Theory, Languages and Computation, Addison – Wesley, 1979.

Web – Resources:

1. **https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwjtgoP3h9jyAhVimeYKHTwtAJQQFnoECAIQAQ&url=https%3A%2F%2Fgurukpo.com%2FContent%2FB.SC%2FDiscrete_Maths.pdf&usg=AOvVaw3vrwMxdGVfyqoQ5SqJNrCi**
2. **https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwiV6cenjd3yAhUbIbcAHfkhCZ8QFnoECAMQAQ&url=http%3A%2F%2Fdiscrete.openmathbooks.org%2Fpdfs%2Fdmoi-tablet.pdf&usg=AOvVaw3qckwD1F6JlR6GOQUarnb3**

Course Outcomes:

On Completion of the Course, Students should be able to

CO1 : Understand the basic concepts of Formal Languages.

CO2 : Permutations and Combinations

CO3 : Acquire knowledge about Finite State Machines

CO4 : Understand Numeric Functions

CO5 : Understand Recurrence Relations.

Semester-VI / MBE-III	**Graph Theory**	**Course Code: BME5**
Instruction Hours: 5	**Credits: 4**	**Exam Hours: 3**
Internal Marks :25	**External Marks:75**	**Total Marks: 100**

Cognitive Level	**K 1 -** Acquire/ Remember **K2 -** Understand **K3** - Apply **K4** - Evaluate **K5** - Analyze **K6** - Create	
Course Objectives:	• To understand the basic concepts of the graphs. • To learn the various operations and degree sequences of graphs. • To discuss the properties of Hamiltonian graphs and trees. • To know about the planar graphs. • To gain the knowledge of colourability of the graph.	
UNIT	**CONTENT**	**HOURS**
Unit I	**Graphs and Subgraphs:** Introduction –The Konigsberg Bridge problem – Definition and examples –Degrees –Subgraphs – Isomorphism.	**15**
Unit II	**Matrices and Degree Sequences:** Matrices –Operations on graphs –Degree Sequences and Graphic Sequences–Walk, trials and paths – Connectedness and components.	**15**

Unit III	**Hamiltonian graphs and Trees:** Eulerian Graphs–Hamiltonian graphs – Characterization of Trees – Centre of a tree.	**15**
Unit IV	**Planar Graphs:** Introduction –Definition and properties – Characterization of Planar graphs.	**15**
Unit V	**Colourability:** Introduction –Chromatic number and chromatic index –The Five Colour Theorem –Four colour problem – Chromatic polynomials.	**15**

Text Book:

1. S. Arumugam and S. Ramachandran, Invitation to Graph Theory, New Gamma Publishing House, Palayamkottai(2013).

Reference Books:

1. Gary Chartrand and Ping Zhang, Introduction to Graph Theory, Tata McGraw-Hill, New York(2006).
2. S.Kumaravelu, Susheela Kumaravelu, Graph Theory, Janki Calender Corporation, Sivakasi(1999).

Web- Resources:

1. **https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwjH_I6X-dfyAhXk4jgGHe-nCscQFnoECCIQAQ&url=https%3A%2F%2Fwww.zib.de%2Fgroetschel%2Fteaching%2FWS1314%2FBondyMurtyGTWA.pdf&usg=AOvVaw0AdrSj_OV0mNm_RmBixjQS**
2. **https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwit-6j1w-**

TyAhXFV30KHYVpA8kQFnoECAoQAQ&url=http%3A%2F%2Fwww.nrce.niepa.ac.in%2Fmod%2Fpage%2Fview.php%3Fid%3D3681&usg=AOvVaw3Ri7FhsEm7bd7Kz29CiYpg

Course Outcomes:

On completion of the course the learner will be able to

CO 1: Understand the concepts of graphs upto isomorphism.

CO 2: Acquire the knowledge of degree sequences, connectedness and components of graphs.

CO3: Demonstrate the characterization of Eulerian, Hamiltonian and trees.

CO4: Interpret the planarity of graphs.

CO5:Identify the chromatic number, index and polynomial of a graph.

Semester-VI / Core Course- XIV (CC)	**Numerical Methods With C Programming -Practical**	**Course Code: BMNY**
Instruction Hours: 2	**Credits: 2**	**Exam Hours: 3**
Internal Marks:40	**External Marks:60**	**Total Marks: 100**

Course Objectives:

- Learning the basic programming construction and functions to modify the programs in programming in C.
- Leaning to solve algebraic an d transcendental equations
- To solve system of Linear equation,differential equations.
- To find the approximate solution by Numerical methods.
- To find the approximate value of definite integrals of functions.

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List of Practicals:

1. Solving a Quadratic Equation.
2. Sum of series (Sine , Cosine , e^x)
3. Ascending and descending order of numbers.
4. Largest and smallest of given numbers.
5. Sorting names in alphabetical order.
6. Finding factorial, generating Fibonacci numbers using recursive functions.
7. Matrix Manipulations (Addition, subtraction and Multiplication).
8. Mean Standard Deviation and Variance.
9. Solving equations by Bisection method
10. Solving equations by False position method
11. Solving equations by Newton –Raphson method
12. Gauss elimination method of solving simultaneous equations
13. GAUSS-Seidel method of solving simultaneous equations
14. Euler method ,Trapesoidel and Simpson's 1/3 rd rule of integration
15. R-K Fourth order method of solving differential equations.

Course Outcomes:

On completion of the course the learner will be able to

CO 1: develop their programming skills with programming environment with C Programming structure.

CO 2: learn how to obtain numerical solution of non linear equations using bisection, secant, Newton and

fixed point iterations method and convergence analysis of these methods.

CO3:Solve simultaneous system of equation numerically

CO4:Familiar with calculation and interpretation of errors in numerical method.

CO5:Familiar with programming with numerical packages like C Programming