| SUBJECT | | Exam Duration | Contact Hours per Week | | | Credits | Max. Marks | Min Pass Marks |
|---|---|---|---|---|---|---|---|---|
| Code | Title | | L | T | P | | | |
| CM-3401 | Chemical Engineering Thermodynamics | 3 Hours | 3 | 1 | 0 | 4 + 0 | 70 | 22 |

**Course objective :**

- Ability to understand the manufacturing of various inorganic chemicals Ability to understand the process flow diagram and various process parameters.
- Ability to identify and solve engineering problems during production.

**UNIT - I :**

**First Law :** First law of thermodynamics and its application, batch flow processes, steady and unsteady flow, reversibility. Critical properties corresponding state. Compressibility, P. V-T- behavior of pure fluids, viral equations, cubic equations, generalized correlations and eccentric factor, behavior of liquids.

**UNIT - II :**

**Second Law :** Second law of thermodynamics and its applications entropy of various systems. Thermodynamics equations. Effect of pressure on specific heat. Joule-Thompson effect. Third law of thermodynamics.

**UNIT - III :**

**Homogenous Mixtures :** Thermodynamics properties of homogenous mixtures. Property relationshipsfor systems of variable compositions. Partial molal properties. Fugacity and fugacity coefficient, fugacityin ideal solutions, Properties changes of mixing, activity. Heat effects in mixing process. Excessproperties, activity co-efficient gaseous mixtures.

**UNIT - IV :**

**Refrigeration :** Compression and expansion of fluids - single stage, multistage - power requirements and efficiency along with the effect and efficiency along with the effect clearance, compression of real gas, Refrigeration - Ideal reversed Camot Cycle. Vapor compression refrigeration. Binary fluid cycle & Cascade system. Dry ice.

**UNIT - V :**

**Chemical Equilibria :** Chemical potential effect of pressure and temperature on heat of reaction and on free energy. Vant Hoff's equation, Clausius-Calpeyron equation. Gibbs Duhen equation. Equilibria and its applications.

**Course Outcomes :**

- Students will derive fundamental equations that govern the estimation of solution properties (Understanding)
- Students will compute phase equilibrium data and construct P-x-y, T-x-y diagram for ideal binarymiscible vapour-liquid systems. The student will describe salient features of liquid-liquid and liquid-solid phase equilibrium plots. The student will compute bubble and flash point for a given data (Applying)
- Students will compute phase equilibrium data for non-ideal binary miscible vapour-liquid systemsusing van Laar and Margules model and for ideal binary immiscible vapour-liquid systems(Applying)

**1 Hour Lecture (L) = 1 Credit  1 Hour Tutorial (T) = 1 Credit  2 Hours Practical (P) = 1 Credit**

*Contd. … 2*

Students will estimate equilibrium conversion in reversible reactions at given pressure and temperature following rigorous thermodynamic method and Van'tHoeff method. (Applying)

- Ability to apply fundamental concepts of thermodynamics to engineering applications.
- Ability to estimate thermodynamic properties of substances in gas and liquid states.
- Capability to determine thermodynamic efficiency of various energy related processes.

**Suggested Readings :-**

1. Smith J. M. & Van Ness INTRODUCTION TO CHEMICAL ENGINEERING THERMODYNAMICS-2nd Edition.
2. Dodge B. F. CHEMICAL ENGINEERING THERMODYNAMICS-McGraw Hill.
3. Balzhiser, Samuels and Eliassen-CHEMICAL ENGG. THERMODYNAMICS-Prentice Hall.
4. Sandler, S.I.-CHEMICAL ENGINEERING THERMODYNAMICS-John Wiley & Sons.
5. Rastogi and Mishra -CHEMICAL ENGG. THERMODYNAMICS.

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# CHEMICAL ENGINEERING, UEC, UJJAIN.

Syllabus for Four Years Bachelor of Technology Degree Course as per NEP-2020

**July-2024**

| SUBJECT | | Exam Duration | Contact Hours per Week | | | Credits | Max. Marks | Min Pass Marks |
|---|---|---|---|---|---|---|---|---|
| Code | Title | | L | T | P | | | |
| CM-3402 | Material and Energy Balance Computations | 3 Hours | 3 | 0 | 2 | 3 + 1 | 70 | 22 |

**Course Objectives :** To enable students to understand basic chemical engineering concepts and methods of analysis. To introduce students to systems of units and measurement scales, chemical process types, process flow diagrams, steady-state mass balance calculations for batch and continuous processes applied to solution of problems in systems of interest to chemical process industries.

**UNIT - I :**

**Mathematical and Engineering Calculations :** Units and dimensions, conversions units, expression and equations, Dimensional groups and constants, stoichiometric and composition relationships conservation of mass, mass and volumetric relationships in volumetric chemical reactions. Basis of calculation. Excess reactants, degree of completion.

**UNIT - II :**

**Ideal Gases & Vapors Pressure :** Behavior of ideal gases, Gaseous mixtures, Vapour pressure, Clausius Clapeyron equation. Coxchart, Duhrings plot, Raoult's Law. Humidity & saturation, relative humidity, humid heat, humid volume, dew point, Humidity chart and its use.

**UNIT - III :**

**Material Balance :** Crystallization, dissolution, solving material balance problems with and without chemical reactions. Recycle, bypass and purge calculations. Aid of computer in solving material balance problem.

**UNIT - IV :**

**Energy Balance :** Heat capacity, calculation of enthalpy changes. Energy balances with chemical reactions. Heat of vaporization, heat of formation, Laws of thermo chemistry, heat of combustion, heat of reaction, solution of set of equations.

**UNIT - V :**

**Combustion Case Study :** Heating value of solid, liquid & gaseous fuels, characterization of petroleum. Thermal efficiency, complete and incomplete combustion of fuels. Actual & Theoretical flame temperature Case study of selected problems.

**List of Experiments :-**

1. To determine the boiling point relation with respect to concentration of caustic soda and verify Duhring's rule.
2. Application of dry and wet bulb thermometer to find out atmospheric humidity.
3. Use of humidity chart to find enthalpy, dew point, humid heat and saturation.
4. Solubility at room temperature & at boiling point to urea in water and verify the material balance.
5. Crystallization of copper sulfate in saturated solution by cooling and finding out the crystal yield.
6. To find out the heating value of coal using a calorimeter.
7. Combustion of coal & performing the material balance.
8. Proximate analysis of coal sample.
9. Measurement of flame temp, and compare actual & theoretical temp. (Business-Burner, Sprit-lamp, Kerosene lamp).
10. To find the heat of reaction using calcium oxide and water.

**1 Hour Lecture (L) = 1 Credit  1 Hour Tutorial (T) = 1 Credit  2 Hours Practical (P) = 1 Credit**

*Contd. … 2*

**Course Outcomes :**

To familiarize the students who succeeded in this course;

- Convert among different units and combinations of units using conversion factor tables.
- Explain the dimensional homogeneity; given the units of some terms in an equation assign units to other terms.
- Calculate mass or mass flow rate and volume or volumetric flow rate.
- Given the composition of a mixture expressed in terms of mass fractions, calculate the composition in terms of mole fractions or vice versa.
- Explain the meaning of batch, semi-batch, continuous, steady-state, transient processes and draw and fully label a flow chart for a given process.
- Given the component partial pressures of an ideal gas mixture and the total gas pressure, determine the mixture composition in either mole fractions, mass fractions or volume fractions.
- Explain the terms separation process, distillation, absorption, adsorption, scrubbing, liquid extraction, crystallization and leaching.
- Sketch a phase diagram (P vs. T) for a single species and label regions for all phases.
- Estimate the vapor pressure of a pure substance at a specified temperature or boiling point and at a specified pressure.

**Suggested List of Readings :-**

1. O. A Hougen, K.M Watson, R.A. Ragatz - Chemical Process Principles Part I - CBS publications, New Delhi1995 edition.
2. David M. Himmelblau - Basic Principles and calculations in chemical Engineering - Prentice Hall India, SixthEdition Feb, 1999.
3. B. I Bhatt, S. M. Vora-Stoichiometry-Tata Mc-Graw Hill, 1996.
4. Narayanan K.V. and Lakshmikutty B., "Stoichiometry and Process Calculations", Prentice Hall of India.

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| SUBJECT | | Exam Duration | Contact Hours per Week | | | Credits | Max. Marks | Min Pass Marks |
|---|---|---|---|---|---|---|---|---|
| Code | Title | | L | T | P | | | |
| CM-3403 | Fluid Mechanics | 3 Hours | 3 | 0 | 2 | 3 + 1 | 70 | 22 |

**Course Objectives :** Fluid flow operation is a basic demand of engineering especially chemical engineering, in process plant, this subject provide knowledge related to fluid flow especially highly viscous fluid, gases through pipe system and tanks etc.

**UNIT - I :**

**Properties of Fluid :** Forces on fluid, stresses, the concept of constitution relations, fluid statics, Normal forces in fluid, Pressure Measurement, forces on submerged bodies, buoyancy, Stability.

**UNIT - II :**

**Newtonian and Non-Newtonian Fluid :** Viscosity measurement, Equations of changes: Equation of Continuity & Equation of motion. Navier stokes equation, concept of Reynolds number and friction factor : Friction factor for rough and smooth pipes, loss of head due to friction in pipes and fittings.

**UNIT - III :**

**Boundary Layer Theory :** Bernoulli's equation, Fluid machinery; pumps, fans, blowers, compressor & vacuum pumps. Power and head requirement for pumps.

**UNIT - IV :**

**Flow of Fluids :** Flow of in compressible fluid in conduits and thin layers, flow past immersed bodies. Dimensional analysis, Buckingham - theorem, Dimensionless numbers and their significances, similitude criteria.

**UNIT - V :**

**Fluid Flow Measurement :** Constant area and constant head meters, Nozzles, Pitot tube, Weirs and Notches.

**List of Experiments:**

1. To determine the local pint pressure with the help of pitot tube.
2. To find out the terminal velocity of a spherical body in water.
3. To determine the viscosity of a given viscous liquid by capillary tube flow method
4. To find the pressure drop in a packed bed.
5. To study the flow behavior of a non-Newtonian fluid and to determine to flow constants.
6. To determine to power-number-Reynolds number curve for an agitated vessel.
7. To differentiate between laminar and turbulent flow using Reynolds experiment.
8. To study the characteristics of an air compressor.
9. To study the characteristics of a centrifugal pump.
10. To study the flow of a fluid in a pipeline and to prepare the friction factor-Re plot.
11. To determine the friction losses, expansion losses, and reduction losses in bend sand pipes and verify the Bernoulli equation.
12. To prepare the calibration curve for an orifice meter and Rota meter.
13. To prepare the calibration curve for venture meter.

**Course Outcomes :** After these course pupils get basic knowledge related to Newtonian fluid and Non-Newtonian fluid, pressure difference through pipes, pumps etc.

Note : Each student should perform at least sight experiments out the above list.

**1 Hour Lecture (L) = 1 Credit  1 Hour Tutorial (T) = 1 Credit  2 Hours Practical (P) = 1 Credit**

*Contd. … 2*

**Suggested List Reading :-**


1. WL McCabe & LG UNIT OPERATIONS IN CHEMICAL ENGG-3ed. Mc-Graw Hill & Kogakusha 1976.
2. J.M. Coulson & J.F. Rechardson - CHEMICAL ENGINEERING – Vol. I & II.
3. B.S. Maney, zel (SI) Van Nostand & Reinhold- MECHANICS OF FLUID- ELBS, 1970.
4. I. Grannet - FLUID MECHANICS FOR ENGG. AND TECHNOLOGY- Prentice Hall, 1971.
5. Maurice G. Larian - FUNDAMENTALS OF CHEMICAL ENGG. OPERATION- Constable and Company Ltd. Landon.
6. S.K. Gupta - MOMENTUM TRANSFER - Newage Publication.


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# CHEMICAL ENGINEERING, UEC, UJJAIN.

Syllabus for Four Years Bachelor of Technology Degree Course as per NEP-2020

**July-2024**

| SUBJECT | | Exam Duration | Contact Hours per Week | | | Credits | Max. Marks | Min Pass Marks |
|---|---|---|---|---|---|---|---|---|
| Code | Title | | L | T | P | | | |
| CM-3404 | Inorganic Process Technology | 3 Hours | 3 | 0 | 2 | 3 + 1 | 70 | 22 |

**Course Objectives :** To study process technologies of various inorganic process industries.

**UNIT - I :**

**Chlor-Alkalies :** Salts and Sodium compounds, soda ash, Caustic Soda, Chlorine and potassium salts.

**UNIT - II :**

**Acids and Phosphates :** Hydrochloric Acid, Sulphur and sulfuric acid, Phosphoric acid and phosphates.

**UNIT - III :**

**Nitrogenous Fertilizers :** Nitrogenous Industries, Ammonia and Nitric acid, Nitrogenous Fertilizer, mixed fertilizers, N-P-K Fertilizers and micronutrients.

**UNIT - IV :**

**Cement and Ceramics :** Types and Manufacture of Portland cement, Manufacture of glasses and special glasses, Ceramics : Refractories and its classification. Industrial gases: Nitrogen, Oxygen, Hydrogen, carbon dioxide and Acetylene.

**UNIT - V :**

**Inorganic Chemicals and Paints :** Inorganic chemicals namely Bromine, Iodine and Fluorine, Alumina and Aluminum chloride, Manufacture of paints – Pigments.

**List of Experiments:**

1. Determination of iron content in a given salt solution.
2. Determination of lime% in a Portland cement.
3. Determination of N-P-K and micronutrients in Fertilizers sample.
4. Determination of dye concentrates using spectrophotometric analysis.
5. Available fluorine in bleaching powder.
6. Preparation of acetic acid from ethyl alcohol.
7. To determine % of formaldehyde in the formalene.
8. To prepare standard azodye and finding the yield.
9. To prepare urea formaldehyde resin and report % conversion.
10. To determine the acetic acid, ethanol concentration in aqueous solutions.

**Course Outcomes :**

- Ability to understand the manufacturing of various inorganic chemicals.
- Ability to understand the process flow diagram and various process parameters.
- Ability to identify and solve engineering problems during production.

**Suggested Readings :-**


1. Austine G.T.-SHREEVES CHEMICALS PROCESS INDUSTRIES-5th Ed., Mc-GrawHill 1984
2. Dryden C.E., M. Gopala Rao - OUTLINES OF CHEMICAL TECHNOLOGY-3rd Ed. Affiliated East-West Press, New Delhi.
3. Pandey G.N, - CHEMICAL TECHNOLOGY VOLUME -|- Lion Press, Kanpur.


**1 Hour Lecture (L) = 1 Credit  1 Hour Tutorial (T) = 1 Credit  2 Hours Practical (P) = 1 Credit**

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| SUBJECT | | Exam Duration | Contact Hours per Week | | | Credits | Max. Marks | Min Pass Marks |
|---|---|---|---|---|---|---|---|---|
| Code | Title | | L | T | P | | | |
| CM-3405 | Object Oriented Programming using JAVA | -- | 0 | 0 | 4 | 0 + 2 | 30 | -- |

**Course Objectives :** Introduction to computer programming using Visual BASIC, Emphasis on the fundamentals of structured designs, development, testing, implementation, and documentation, Includes language syntax, data and file structures, input/output devices, and files etc.

## SECTION A : VISUAL $C^{++}$

**UNIT - I :**

**Visual $C^{++}$ Basics :** Introduction, Building a Basic Application, Using Microsoft Foundation Class (MFC) Library, Visual $C^{++}$ resources: Application Wizard, Accelerators and Menus, Toolbars.

**UNIT - II :**

**Visual $C^{++}$ and Database Management :** Data Access Objects (DAO) versus Open Database Connectivity (ODBC), Database Building Overview, Building a Database Application Using ODBC, Building a Database Application Using DAO.

**UNIT - III :**

**Visual $C^{++}$ and The Internet :** Designing a Web Page. An Overview of JavaScript, Creating and ActiveX Control, Creating an ActiveX Document Application, Using URLS and Monikers, Working with Internet Information Server (IIS), Designing with Security in Mind, Building a Help File, Packaging Your Application.

## SECTION B: VISUAL BASIC

**UNIT - IV :**

**Introduction :** Creating First VB Application, Adding Controls, Activation Controls, Creating Menus, VB Program Structure, Handling Data, Fundamental Expressions, Working with Interactive Keyboard and Screen 110, Adding Loops, Using Arrays, Procedures.

**UNIT - V :**

**Intermediate VB Programming :** VB Forms, Dialog Boxes, Additional Controls, Printing with VB, Understanding Objects and Using Object Browser, Accessing Files, Adding OLE to a Program.

**Unit VI**

**Adding Power to VB Programs :** Using Graphics and Multimedia, Using Form Template, Accessing Database, Using Keyboard and Mouse 1/0, Building Help Subsystem, Using ActiveX, Adding Internet Access to the Applications.

**Unit VII**

**Building a Professional Application :** Developing and Designing Forms, Adding the Controls, Integrating Code, Debugging and Testing, Packaging Your Application.

**1 Hour Lecture (L) = 1 Credit  1 Hour Tutorial (T) = 1 Credit  2 Hours Practical (P) = 1 Credit**

*Contd. … 2*

**Suggested List of Experiment :**

Programs based on each unit in Section A (Visual $C^{++}$) and Section B (Visual Basic). At least 8 programs in Visual $C^{++}$ and Visual Basic each.

**Course Outcome :**

The student will use Visual Basic .Net to build Windows applications using structured and object-based programming techniques. Students will be exposed to the following concepts and/or skills at an introductory concepts level :

- Analyze program requirements.

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# CHEMICAL ENGINEERING, UEC, UJJAIN.

Syllabus for Four Years Bachelor of Technology Degree Course as per NEP-2020

**July-2024**

| SUBJECT | | Exam Duration | Contact Hours per Week | | | Credits | Max. Marks | Min Pass Marks |
|---|---|---|---|---|---|---|---|---|
| Code | Title | | L | T | P | | | |
| CM-3406 | Internship | -- | 0 | 0 | 4 | 0 + 2 | -- | -- |

**Course Objectives :** Individual studies in chemical engineering through an industrial work experience.

**Other Course Description :** Work experience in an industrial environment in order to gain knowledge and skills to apply to remaining engineering courses for undergraduate programs in chemical engineering.

Your internship must be with a company whose focus is engineering (preferably chemical). Otherwise, you will not be eligible to receive credit towards your CHE degree. To enroll, you must provide a job description (with job title) clearly outlining your role and the nature of the company.

Prerequisites & Required Training: If the work is laboratory based/hands-on field work, students must complete the mandatory Environmental Health and Safety training for working in laboratories:

(i) Laboratory Safety and
(ii) Safety Awareness.

**Please Attach the Certificates of Completion to Your Report**.

**Course Goals :** This course is designed to enhance the undergraduate experience by providing the opportunity to engage in an industrial setting, learn new practical skills and/or research and design methodology.

- Design/develop programs with GUI interfaces.
- Code programs and develop interface using Visual Basic .Net.
- Perform tests, resolve defects and revise existing code.

**Reference Books:**


(i) Visual $C^{++}$ : John Paul Mueller 1997, Tata McGraw Hill Edition.
(ii) Visual Basic : Night School - Greg Perry, QUE Pub.
(iii) Visual Basic 5 : The Comprehensive Guide - Mansfield, Galgotia Pub.


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# MECHANICAL ENGINEERING, UEC, UJJAIN.

Syllabus for Four Years Bachelor of Technology Degree Course as per NEP-2020

**July-2024**

| SUBJECT | | Exam Duration | Contact Hours per Week | | | Credits | Max. Marks | Min Pass Marks |
|---|---|---|---|---|---|---|---|---|
| Code | Title | | L | T | P | | | |
| MA-3401 | Mathematics – III | 3 Hours | 3 | 1 | 0 | 4 + 0 | 70 | 22 |

**Prerequisite : Mathematics–I, Mathematics–II**

**Course Objective :** The goals for the course are to gain a facility with using the transform, both specific techniques and general principles, and learning to recognize when, why, and how it is used. Together with a great variety, the subject also has a great coherence, and the hope is students come to appreciate both. This course also aims to provide an understanding of the basic concepts in probability, conditional probability and independent events. It will also focus on the random variable, mathematical expectation, and different types of distributions, sampling theory and estimation theory. Another objective of the course is to design a statistical hypothesis about the real world problem and to conduct appropriate test for drawing valid inference about the population characteristics. It is inevitable to have the knowledge of hypothesis testing for any research work. The course will provide an opportunity to learn R programming to substantial extent.

## Detailed Course Contents

**[Total contact hours required: 60 hours]**

**UNIT - I :** ***Laplace Transform (9 lectures, 3 tutorials)*** **[Weightage 14 marks]**

Laplace Transform, Properties of Laplace Transform, Laplace transform of periodic functions. Finding inverse Laplace transform by different methods, convolution theorem. Evaluation of integrals by Laplace transform, Solving ODEs and PDEs by Laplace Transform method.

**UNIT - II :** ***Partial Differential Equations (9 lectures, 3 tutorials)*** **[Weightage 14 marks]**

First order partial differential equations, Solutions of first order linear and non-linear PDEs. Solution to homogenous and non-homogenous linear partial differential equations second and higher order by complimentary function and particular integral method. Second-order linear PDE equations and their classification, Initial and boundary conditions (with an informal description of well-posed problems), Separation of variable method, Wave and Heat conduction equations.

**UNIT - III :** ***Basic probability and distributions(9 lectures, 3 tutorials)*** **[Weightage 14 marks]**

Probability spaces, Conditional probability, independence; Total probability, Baye's theorem, Discrete random variables, Binomial distribution, Poisson distribution, Continuous random variables and their properties, Normal distribution, Evaluation of statistical parameters for these three distributions.

**UNIT - IV :** ***Basic Statistics (9 lectures, 3 tutorials)*****[Weightage 14 marks]**

Measures of Central tendency: Moments, Skewness and Kurtosis, Curve fitting by the method of least squares- fitting of straight lines, Second degree parabolas and more general curves. Correlation and Regression, Rank correlation.

**UNIT - V :** ***Applied Statistics (9 lectures, 3 tutorials)*** **[Weightage 14 marks]**

**Tests of significance :** Introduction, Sampling and standard error. **Test of significance for large samples :** Null and alternate hypothesis, critical region, critical value, and level of significance, confidence interval, Errors in testing of hypothesis. **Tests of significance for small samples :** Student's *t*-distribution, Snedecor's *F*-distribution. **Chi-Square distribution :** Properties, applications, test for goodness of fit, independence of attributes, test for population variance.

| 1 Hour Lecture (L) = 1 Credit | 1 Hour Tutorial (T) = 1 Credit | 2 Hours Practical (P) = 1 Credit |
|---|---|---|

*Contd. … 2*

**Suggested Test / Reference Books :-**


1. Erwin Kreyszig, Advanced Engineering Mathematics, 9th Edition, John Wiley & Sons, 2006.
2. R.K. Jain, S.R.K. Iyenger, Advanced Engineering Mathematics, Narosa Publications.
3. W.E. Boyce and R.C. DiPrima, Elementary Differential Equations and Boundary Value Problems, 9th Edn., Wiley India, 2009.
4. S.L. Ross, Differential Equations, 3rd Ed., Wiley India, 1984.
5. E.A. Coddington, An Introduction to Ordinary Differential Equations, Prentice Hall India, 1995.
6. E.L. Ince, Ordinary Differential Equations, Dover Publications, 1958.
7. J.W. Brown and R.V. Churchill, Complex Variables and Applications, 7th Ed., Mc-Graw Hill, 2004.
8. B.S. Grewal, Higher Engineering Mathematics, Khanna Publishers, 36th Edition, 2010.


## Table-01 : Course Outcomes (COs)

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

| Course Outcome # | Course Outcome |
|---|---|
| **CO1** | Find Laplace transform and Inverse Laplace transforms of functions using different methods/ properties and able to apply them to solve initial and boundary value problems. |
| **CO2** | Find Integral representation, Fourier transforms and Inverse Fourier transforms of functions using different methods/properties and able to apply them to solve ODEs and PDEs. |
| **CO3** | Understand the concepts of probability, random variables and be familiar with some common probability distribution like Binomial, Poisson and Normal distributions and their properties. |
| **CO4** | Understand and apply the concepts of Moments, Skewness and Kurtosis, fit different curves by least square method, understand and apply the concepts of correlation and regressions. |
| **CO5** | Perform Test of Hypothesis as well as calculate confidence interval for a population parameter for single sample and two sample cases. Learn non-parametric test such as the Chi-Square test for Independence as well as Goodness of Fit. |

## Table-02 : Maping of Course Outcomes with Program Outcomes

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 3 | 3 | 1 | 2 | 1 | - | - | - | - | - | - | - |
| **CO2** | 3 | 3 | 1 | 2 | 1 | - | - | - | - | - | - | - |
| **CO3** | 3 | 3 | 1 | 2 | 1 | - | - | - | - | - | - | - |
| **CO4** | 3 | 3 | 1 | 2 | 1 | - | - | - | - | - | - | - |
| **CO5** | 3 | 3 | 1 | 2 | 1 | - | - | - | - | - | - | - |
| **MA** ..... | 3 | 3 | 1 | 2 | 1 | - | - | - | - | - | - | - |

## Table-03 : Assessment Poliy

| Sr. No. | Particulars | Marks | Policy |
|---|---|---|---|
| 1 | Mid Semester Exam (MST) | **20** | At least two mid semester tests will be conducted of 20 marks each. The final mid semester marks shall be the average of the two higher mid semester marks. |
| 2 | ***Quizzes, Assignments, Tutorials and Regularity :*** | | |
| | • Quizzes | **04** | Two quizzes will be conducted of 2 (two) marks each |
| | • Assignments | **04** | Two assignments will be conducted of 2 (two) marks each |
| | • Tutorials and Regularity | **02** | Every Thursday/Friday a tutorial sheet will be given to the students. Students have to submit, solution of these tutorial sheets on the next Monday. Marks for regularity will be awarded only if the student attend more than or equal to 75%. |
| 3 | ***End Semester Examinations*** | **70** | Question paper for end semester examination will have 05 (five) questions, one from each module (unit). Internal choices will be given. |

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