SAMRAT ASHOK TECHNOLOGICAL INSTITUTE
(Engineering College), VIDISHA M.P.
(An Autonomous Institute Affiliated to RGPV Bhopal)
Mechanical Engineering Department

Semester/Year	III/II	Program	B.Tech.
Subject Category: DC	Subject Code: ME-301	Subject Name:	Fundamentals of Thermodynamics

	Maximum Marks Allotted						Contact Hours			Total Credits
	Theory			Practical		Total Marks				
End Sem	Mid-Sem	Assignment	Quiz	End Sem	Lab-Work		L	T	P	
60	20	10	10	-	-	100	3	1	0	4

Prerequisites:(Only for open electives)

Course Objective:

. The objective of this subject is to provides understanding of basics of thermal engineering and the relationships of the properties of substances for their use in determining the changes of properties in physical processes performed by the substances.

Course Outcomes:

After completion of the course, students would be able to -

1. **Understand the basic concept and fundamental laws of thermodynamics**
2. **Apply knowledge to identify applications on Heat Engines, Refrigerator and Heat Pump based on Carnot Cycle**
3. **Analyse the behaviour of an ideal gas and real gas**
4. **Evaluate the phase transformation and properties of pure substances.**
5. **Analyse the thermodynamics relations**

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

Contents:			
UNITs	**Descriptions**	**Hrs.**	**CO's**
I	**Basic Concepts: Thermodynamic, Property, Equilibrium, State, Process, Cycle, Zeroth Law of thermodynamics, statement and significance, Heat and work transfer, First law of thermodynamics: statement of first law of thermodynamics, first law applied to closed system, first law applied to a closed system undergoing a cycle, processes analysis of closed system, flow process, flow energy, steady flow process, relations for flow processes, and limitations of first law of thermodynamics.**	**8**	**1**
II	**Second law of thermodynamics: Heat engine, heat reservoir, refrigerator, heat pump, COP, EPR, Available energy, Carnot's theorem, Carnot's cycle, efficiency of Carnot's cycle, statement of second law reversible and irreversible processes, consequence of second law, Entropy: Entropy change for ideal gas, T-S diagrams, Availability and Irreversibility.**	**8**	**2**
III	**Concept of an ideal gas: Gas laws, Avogadro's hypothesis, Real Gas, Deviation with ideal gas, Vander-wall's equation, evaluation of its constants, limitations of the equation. The law of corresponding states compressibility factor, generalized compressibility chart, P-V-T surface of a real gas, Non-reactive gas mixture, PVT relationship, mixture of ideal gases, properties of mixture of ideal gases, internal energy, enthalpy and specific heat of gas mixtures, enthalpy of gas mixtures.**	**8**	**3**
IV	**Pure substances: Phase, Phase- transformations, formation of steam, properties of steam, PVT surface, HS,TS,PV,PH,TV diagram, processes of vapor measurement of dryness fraction, use of steam table and mollier chart.**	**8**	**4**
V	**Thermodynamics Relations: Gibb's function, Helmholtz function, Maxwell relations, and their applications. TdS equations. Relationship between specific heats, Clapeyron equations, Joule-Thomson coefficient, Coefficient of volume expansion, adiabatic and isothermal compressibility.**	**8**	**5**
Guest Lectures (if any)			
Total Hours		**40**	
Suggestive list of experiments:			

Text Books-

1. **R. K. Rajput, Engineering Thermodynamics, LP**
2. **Sonntag, Fundamentals of Thermodynamics, Wiley**
3. **Moran, Shapiro, Principles of Engineering Thermodynamics, Wiley**

Reference Books-

1. **P. K. Nag; Engineering Thermodynamics, McGraw Hills**
2. **CengelY; Thermodynamics: An Engineering Approach; McGraw Hills**
3. **Arora CP Thermodynamics, McGraw Hills**

Modes of Evaluation and Rubric

There will be continuous evaluation for during the semester for 40 sessional marks and 60 semester End term Marks. Subjects where laboratory work is prescribed, the practical marks are 50, out of which 30 marks will be awarded for viva voce and 20 marks for lab work. Out of 40 sessional marks, 20 shall be awarded for Mid semester, 20 marks to be awarded for day to day performance and Quiz/Assignments. For the 60 Marks, there will be a semester – End examination as per the norms of AICTE.

Recommendation by Board of studies on	**Date:**
Approval by Academic council on	**Date:**
Compiled and designed by	**Name 1.Dr.Mangal Singh Lodhi** **Name 2:Dr G Deshmukh**
Checked and approved by	**Name 1. Dr Sanjay Katarey**

SAMRAT ASHOK TECHNOLOGICAL INSTITUTE
(Engineering College), VIDISHA M.P.
(An Autonomous Institute Affiliated to RGPV Bhopal)
Mechanical Engineering Department

Semester/Year		III / II	Program		B.Tech.
Subject Category	DC	Subject Code:	ME-302	Subject Name:	Strength & Mechanics of Material

Maximum Marks Allotted								Contact Hours			Total Credits
Theory				Practical			Total Marks				
End Sem	Mid-Sem	Assignment	Quiz	End-Sem	Lab-Work	Quiz		L	T	P	
60	20	10	10	30	10	10	150	3	0	2	4

Prerequisites:(Only for open electives)

Course Objective:

To give an ability to apply the knowledge of strength of materials on engineering applications and design problems

Course Outcomes:

After completion of the course, students would be able to -

1.Identity the theory of elasticity including strain/displacement and Hooke's law relationship

2.Compute solid mechanics problems using classical methods and energy methods.

3.Detecttheories of elastic failures &analyze the stress and strain through Mohr's circle.

4.Determinethe stresses and deflections of beams under unsymmetrical loading.

5.Analyze torsion problems in bars and thin walled members.

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO 11	PO12
CO1	3	2	1	1								
CO2	3	2	3	2								
CO3	3	2	2	2								
CO4	3	2	2	2								
CO5	3	2	2	2								

Contents:			
UNITs	**Descriptions**	**Hrs.**	**CO's**
I	**Stress and Strain: Elementary definition of stress and strain, stress-strain relationship, elastic, plastic and visco-elastic behavior of common materials in tension and compression test, stress-strain curves, Hooke's law, Poisson's ratio, elastic constants and their relations for an isotropic hookean material, anisotropic and orthotropic materials.** **Tension, compression, shearing stress and strain, thermal stresses, composite bars, equations of static equilibrium, concept of free body diagram, Strain energy due to axial loading.**	**8**	**CO1**
II	**Members Subjected to Flexural Loads: Theory of simple bending, bending moment and shear force diagrams for different types of static loading and support conditions on beams, Bending stresses, section modulus and transverse shear stress distribution in circular, hollow circular, I, Box, T, angle sections etc. Strain energy due to bending.**	**8**	**CO2**
III	**Principal Planes, Stresses and Strains: Members subjected to combined axial, bending and torsional loads, maximum normal and shear stresses, concept of equivalent bending and equivalent twisting moments, Mohr's circle of stress and strain.** **Theories of Elastic Failures: The necessity for a theory, different theories, significance and comparison, applications.**	**8**	**CO3**
IV	**Torsion: Torsional shear stress in solid, hollow and stepped circular shafts, angular deflection and power transmission capacity. Strain energy due to torsional loads,** **Stability of Equilibrium: Instability and elastic stability, long and short columns, ideal strut, Euler's formula for crippling load for columns of different ends, concept of equivalent length, eccentric loading, Rankine formulae and other empirical relations.**	**8**	**CO4**
V	**Transverse Deflection of Beams: Relation between deflection, bending moment, shear force and load, transverse deflection of beams and shaft under static loading, area moment method, direct integration method.** **Thin-walled Pressure Vessels: Stresses in cylindrical and spherical vessels**	**8**	**CO5**
Guest Lectures (if any)			
Total Hours		**40**	

Suggestive list of experiments:

1. **To find Modulus of Elasticity 'E' of Mild Steel and Wood by Deflection method.**
2. **To find Modulus of Rigidity 'N' of Mild Steel by Barton's vertical torsion apparatus.**
3. **To find Modulus of Rigidity 'N' of spring material by Spring test apparatus.**
4. **To verify Shear Force at a given section of a Simply Supported Beam.**
5. **To verify Bending Moment at a given section of a Simply Supported Beam.**
6. **To verify Maxwell's Theorem of Reciprocal Deflection.**
7. **To perform Tensile Test on M.S. and C.I. specimen and draw stress strain curve.**
8. **To perform Compression test on Teak and Jungle wood and R.C.C. C.I. cubes and compare their results.**
9. **To determine Ultimate Shear Strength of M.S., C.I. and Brass.**
10. **To determine Modulus of Rupture of Teak and Sal wood beam by FlexureTest**

Text Books-

1. **R. K.Bansal, "A Textbook of Strength of Materials Laxmi Publications.**
2. **Dr. Sadhu Singh,A Textbook of Strength of Materials, Khanna Publications**

Reference Books-

1. **Timoshenko, S.P., and Gere, J.M., "Mechanics of Materials", 2nd Ed., CBS Publishers**
2. **Crandall, S.H., Dahl, N.C., and Lardner, T.J., "An Introduction to the Mechanics of Solids", Tata McGraw-Hill**
3. **Pytel and Kiusalaas, "Mechanics of Materials" Cengage Learning**
4. **Punmia, Jain and Jain, "Mechanics of Materials", Laxmi Publication**
5. **Popov, E.P., Nagarajan, S., and Lu, Z. A., "Mechanics of Materials", 2ndEd., Prentice-Hall of India**

Modes of Evaluation and Rubric

There will be continuous evaluation for during the semester for 40 sessional marks and 60 semester End term Marks. The practical marks are 50, out of which 30 marks will be awarded for viva voce and 20 marks for lab work. Out of 40 sessional marks, 20 shall be awarded for Mid semester, 20 marks to be awarded for day to day performance and Quiz/Assignments. For the 60 Marks, there will be a semester – End examination as per the norms of AICTE.

Recommendation by Board of studies on	**Date:**
Approval by Academic council on	**Date:**
Compiled and designed by	**Name 1. Dr.GauravBajpai**
Checked and approved by	**Name 1.Dr Pradeep Singh**

SAMRAT ASHOK TECHNOLOGICAL INSTITUTE
(Engineering College), VIDISHA M.P.
(An Autonomous Institute Affiliated to RGPV Bhopal)
Mechanical Engineering Department

Semester/Year		IV / II	Program		B.Tech.
Subject Category	DC	Subject Code:	ME-303	Subject Name:	Theory of Machine-I

Maximum Marks Allotted								Contact Hours			Total Credits
Theory				Practical			Total Marks				
End Sem	Mid-Sem	Assignment	Quiz	End Sem	Lab-Work	Quiz		L	T	P	
60	20	10	10	30	10	10	150	3	0	2	4

Prerequisites:(Only for open electives)

Course Objective:

This course is focused on the study of different mechanisms and relative motion between numerous machine components.

Course Outcomes:

After completion of the course, students would be able to -

1. **Interpret concepts of link, mechanisms,**
2. **Compute velocity and acceleration of a point or a link in Mechanism**
3. **Analyse Gear Mechanism**
4. **Illustrate Cam & follower mechanisms**
5. **Analyses the ability of four wheelers, Two wheelers, ships and plane under the action of gyroscopic effect**

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	2								
CO2	3	3	2	3								
CO3	3	2	3	3								
CO4	2	3	3	3								
CO5	2	3	3	2								

Contents:			
UNITs	**Descriptions**	**Hrs.**	**CO's**
I	**BASICS OF MECHANISMS: Classification of mechanisms — Basic kinematic concepts and definitions - Degree of freedom, Mobility — Kutzbach criterion, Gruebler's criterion — Grashof's Law — Kinematic inversions of four-bar chain and slider crank chains — Limit positions — Mechanical advantage — Transmission Angle — Description of some common mechanisms — Quick return mechanisms, Straight line generators, Universal Joint — rocker mechanisms.**	**8**	**CO1**
II	**KINEMATICS OF LINKAGE MECHANISMS: Displacement, velocity and acceleration analysis of simple mechanisms — Graphical method— Velocity and acceleration polygons — Velocity analysis using instantaneous centers — kinematic analysis of simple mechanisms — Coincident points — Coriolis component of Acceleration.**	**8**	**CO2**
III	**GEARS: Law of toothed gearing — Involutes and cycloidal tooth profiles —Spur Gear terminology and definitions—Gear tooth action — contact ratio — Interference and undercutting. Helical, Bevel, Worm, Rack and Pinion gears**	**8**	**CO3**
IV	**GEAR TRAINS — Speed ratio, train value — Parallel axis gear trains – EpicyclicGearTrains.** **GYROSCOPE: Gyroscopic Action in Machines: angular velocity and acceleration, gyroscopic torque/ couple; gyroscopic effect on naval ships; stability of two and four wheel vehicles, rigid disc at an angle fixed to a rotating shaft.**	**8**	**CO4**
V	**KINEMATICS OF CAM JYIECHANISMS:** **Cams - Classification of followers and cams, radial cam nomenclature, analysis of follower motion (uniform, modified uniform, simple harmonic, parabolic, cycloidal), pressure angle, radius of curvature, synthesis of cam profile by graphical approach, cams with specified contours.**	**8**	**CO5**
Guest Lectures (if any)			
Total Hours		**40**	

Suggestive list of experiments:

1. **Calculate degree of freedom of various mechanisms and identify types of kinematic pairs present in it.**
2. **Measure torque at different speeds and find efficiency of epicyclical gear train.**
3. **Analysegyroscopiceffectforrotatingdiscinvariousdynamicconditions**
4. **Experimentally verify the practical relation of gyroscopic couple for a rotating disc.**
5. **Measure various parameters comprising the Corioli's component of acceleration and to verify the practical expression.**
6. **Plotgraphbetweenfollowerdisplacementandcamrotationanglefordifferentcamfollowerpairs**

and calculate jump speed.

7. **Calculate module, gear ratio and speed ratio for each pair of gears in a simple gear train.**
8. **Calculate the gear ratio and speed ratio for each pair of gears in a epicyclical gear train.**
9. **Analyze slider crank mechanism and its inversions.**
10. **Analyze double slider mechanism and its inversions**

Text Books-

1. **Rattan SS; Theory of machines; TMH**
2. **Ambekar AG; Mechanism and Machine Theory; PHI.**
3. **Sharma CS; Purohit K; Theory of Mechanism and Machines; PHI.**
4. **Thomas Bevan; Theory of Machines; Pearson/ CBS PUB Delhi.**

Reference Books-

1. **Ghosh,A,.Mallik,AK; Theory of Mechanisms & Machines.**
2. **Rao JS and Dukkipati; Mechanism and Machine Theory; NewAge Delhi**

Modes of Evaluation and Rubric

There will be continuous evaluation for during the semester for 40 sessional marks and 60 semester End term Marks. The practical marks are 50, out of which 30 marks will be awarded for viva voce and 20 marks for lab work. Out of 40 sessional marks, 20 shall be awarded for Mid semester, 20 marks to be awarded for day to day performance and Quiz/Assignments. For the 60 Marks, there will be a semester – End examination as per the norms of AICTE.

Recommendation by Board of studies on	**Date:**
Approval by Academic council on	**Date:**
Compiled and designed by	**Name 1. Dr. Chandra Pal Singh**
Checked and approved by	**Name 1.Prof Sanjay Jain**

SAMRAT ASHOK TECHNOLOGICAL INSTITUTE
(Engineering College), VIDISHA M.P.
(An Autonomous Institute Affiliated to RGPV Bhopal)
Mechanical Engineering Department

Semester/Year		III / II	Program		B.Tech.
Subject Category	DC	Subject Code:	ME-304	Subject Name:	Materials Science

Maximum Marks Allotted								Contact Hours			Total Credits
Theory				Practical			Total Marks				
End Sem	Mid-Sem	Assignment	Quiz	End Sem	Lab-Work	Quiz		L	T	P	
60	20	10	10	30	10	10	150	3	0	2	4

Prerequisites:(Only for open electives)

Course Objective:

To provide an ability to apply the knowledge and distinguish between a variety of materials based on their structure and properties in engineering applications

Course Outcomes:

After completion of the course, students would be able to -

1. **Identify Micro structural arrangements, phases, properties and defects of engineering materials**
2. **Infer the Phase Diagram of Materials**
3. **Compare various heat treatment processes.**
4. **Evaluate Destructive and non-destructive testing methods**
5. **Analyze various properties of Polymers & ceramics material**

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

Contents:			
UNITs	**Descriptions**	**Hrs.**	**CO's**
I	**Introduction of materials, Classification of materials, Engineering requirements of material, Solidification of metals, Crystallization, Crystal and amorphous, different types of bonds in different metals, Crystallography, Different mechanical properties of metals and other engineering materials like strength, hardness, elasticity, plasticity, Malleability, Ductility, Creep, Fatigue etc. Point and line defects in crystal, their relation to mechanical properties, Crystallographic directions and planes, deformation of metal by slip and twinning, Strengthening mechanism in metals, Hall-Petch effect.**	**8**	**CO1**
II	**Stability and metastability of metals, Cooling curves, Isomorphous, Utectic, Eutectoid , Eutectoid solid solution, Peritectic and other phase diagrams, Alloying , Characteristics of alloying elements, Iron-Carbon phase diagram, T-T-T diagrams, Types of Cast Iron. Types of Stainless Steels, Elastic, inelastic and Viscoelastic behaviour**	**8**	**CO2**
III	**Heat treatment of metals, Based on phase diagram and T-T-T-Diagram the heat treatment of various metals, Bulk heat treatments, surface heat treatments, Case carburizing, Types of Annealing, normalizing, Spherodising, Phase Transformations like Pearlite, Cementite, Austenite, Troostite, Bainite,Hard and soft Martensite etc. Laser hardening, Cyaniding, Boriding, Nitriding, Flame hardening, Ion implantation, etc. Heat treatment cycles**	**8**	**CO3**
IV	**Destructive and non-destructive testing methods, Tensile test, Compression test, shear test, bend test, Different types of Hardness tests, Impact tests, Fatigue tests, Harden ability test, Fracture analysis, NDT Methods. Different properties of Steels, Aluminum and it's alloys, Copper and it's alloys, Manganese and it's alloys, Chromium and it's alloys, Nickel and it's alloys.**	**8**	**CO4**
V	**Non-Metallic Materials- Polymers – types of polymer, commodity and engineering polymers -Properties and applications, Composites Materials, Solid solutions - Substitutional and interstitial. Ferrous and Non Ferrous Metals- Effect of alloying additions on steel (Mn, Si, Cr, Mo, V, Ti& W) - stainless and tool steels – HSLA steel.**	**8**	**CO5**
Guest Lectures (if any)			
Total Hours		**40**	
Suggestive list of experiments:			

Text Books-

1. **Material Science and Engineering An Introduction, William D.Callister, John Wiley and Sons, 2003**
2. **Material Science, Raghvan V., Prentice Hall India, 2012**

Reference Books-

1. **Principles of Material Science and Engineering, William F.Smith, Tata McGraw-Hill Publications.**
2. **Engineering Physical Metallurgy, Lakhtin Y., Mir Publisher.**
3. **Introduction to Engineering materials Tata McGraw-Hill Publications.**
4. **Engineering materials properties and selection Budinski and Budinski, PHI**

Modes of Evaluation and Rubric

There will be continuous evaluation for during the semester for 40 sessional marks and 60 semester End term Marks. The practical marks are 50, out of which 30 marks will be awarded for viva voce and 20 marks for lab work. Out of 40 sessional marks, 20 shall be awarded for Mid semester, 20 marks to be awarded for day to day performance and Quiz/Assignments. For the 60 Marks, there will be a semester – End examination as per the norms of AICTE.

Recommendation by Board of studies on	**Date:**
Approval by Academic council on	**Date:**
Compiled and designed by	**Name 1. Dr.GauravBajpai**
Checked and approved by	**Name 1.Dr PankajAgrawal**

SAMRAT ASHOK TECHNOLOGICAL INSTITUTE
(Engineering College), VIDISHA M.P.
(An Autonomous Institute Affiliated to RGPV Bhopal)
Mechanical Engineering Department

Semester/Year	IV / II		Program		B.Tech.
Subject Category	DC	Subject Code:	ME 305	Subject Name:	Introduction to Quality Management

Maximum Marks Allotted							Contact Hours			Total Credits
Theory				Practical		Total Marks				
End Sem	Mid-Sem	Quiz	Assignment	End Sem	Lab-Work		L	T	P	3
60	20	10	10	-	-	100	3	0	0	

Prerequisites:(Only for open electives)

Basics of Engineering operations.

Presentation facility must be there in the class room for this subject.

Course Objective:

To apprise learners with the basic Quality Management decisions with respect to Industrial Production and Operations Management.

Course Outcomes:

After completion of the course, students would be able to -

1. **Describe the Quality**
2. **Explain Statistical Process Control**
3. **Examine Acceptance Sampling**
4. **Classify Total Quality Management**
5. **Analyze Quality Management Tools**

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	2		3	3							
CO 2	3			3								
CO 3	3		3									
CO 4	3				3							
CO 5	3		3	2	3							
	3	2	3	2	3							

Contents:			
UNITs	**Descriptions**	**Hrs.**	**CO's**
I	**Quality Control Definitions, dimensions, and aspects of quality, Traditional and modern Views of Quality Control and Quality Assurance , Different Philosophies byQuality Gurus. Modern Quality Control Technologies, – Cost of Quality – Quality Certification**	**10**	**1**
II	**Statistical Process Control, Statistical Process Control (SPC):, manufacturing process capability, and tolerances, Tools/methods used in SPC, Control Charts, Pareto charts, Fishbone diagrams, etc. Implementation of SPC. Control Charts: Theory and applications of control charts; Controls charts for variables: charts averages, ranges, and standard deviation; Control charts for attributes: p and c charts**	**8**	**2**
III	**Acceptance Sampling: Concept of acceptance sampling; Sampling by attributes: Single and double sampling plans,, Construction and use of operating characteristic (OC) curves; Sampling by variables**	**4**	**3**
IV	**Total Quality Management: Basic concepts of TQM - Definition of TQM – TQM Framework - Contributions of Deming, Juran and Crosby – Barriers to TQM Concept and philosophy, Scope, Applications, Implementation, Quality circles: objectives, structures, and techniques. Strategic quality planning, Quality statements – Customer focus – Customer orientation, Customer satisfaction, Customer complaints, Customer retention – Employee involvement – Motivation, Empowerment, Team and Teamwork, Recognition and Reward, Performance appraisal - Continuous process improvement – PDSA cycle, 5s, Kaizen – Supplier selection, Supplier Rating**	**10**	**4**
V	**TQM TOOLS & TECHNIQUES: The seven traditional tools of quality – New management tools – Six-sigma: Concepts, methodology, applications to manufacturing, service sector including IT – Benchmarking Reason to benchmark, Benchmarking process – FMEA – Stages, Types. Quality circles – Quality Function Deployment (QFD) – Taguchi Quality Loss Function**	**8**	**5**
Guest Lectures (if any)			
Total Hours		**40**	
Suggestive list of experiments:			

Text Books-

1. **A. Mitra, Fundamentals of Quality Control and Improvement (2nd edition), Prentice Hall of India, New Delhi, 2005.**

Reference Books-

1. Dale H. Besterfiled, "Total Quality Management", Pearson Education Asia, (Indian reprint 2011)

2. John Bank, The essence of total quality management PHI 2000

3. Greg Bounds, Lyle Yorks et al, Beyond Total Quality Management, McGraw Hill, 1994

4. Takashi Osada, The 5S's The Asian Productivity Organization, 1991

5. Masaki Imami, KAIZEN, McGraw Hill, 1986

6. D.C. Montgomery, Introduction to Statistical Quality Control (3rd edition), John-Wiley & Sons Inc. New York, 1996.

7. E. Grant, and R. Leavenworth, Statistical Quality Control, McGraw-Hill Inc. New York, 1996.

8. G. Taguchi, Introduction to Quality Engineering, Kraus Int. Publications, 1986.

9. D.H. Besterfield, M.C. Besterfield, G. Besterfield, and S.M. Besterfield, Total Quality Management, Prentice Hall International Inc. 1996

Modes of Evaluation and Rubric

There will be continuous evaluation for during the semester for 40 sessional marks and 60 semester End term Marks. Out of 40 sessional marks, 20 shall be awarded for Mid semester, 20 marks to be awarded for day to day performance and Quiz/Assignments. For the 60 Marks, there will be a semester – End examination as per the norms of AICTE.

Recommendation by Board of studies on	**Date: 07-06-2024**
Approval by Academic council on	**Date:**
Compiled and designed by	**Name 1.Dr Ravi Mohan**
Checked and approved by	**Name 1.**