

ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES, TIRUPATI

(Autonomous)

Course structure for Four Year Regular B.Tech. Degree Program

(Effective for the batches admitted from 2020-21)

MECHANICAL ENGINEERING (ME)

Semester IV (Second year)

Sl. No.	Category	Course Code	Course Title	Hours per week			Credits	Scheme of Examination (Max. Marks)		
				L	T	P		C	CIE	SEE
1	Engineering Science Courses	20AES0505	Internet of Things (IoT)	3	0	0	3	30	70	100
2	Basic Science Course /Prof core course	20AES0324	Thermal Engineering	3	0	0	3	30	70	100
3	Professional Core courses	20APC0312	Manufacturing Technology	3	0	0	3	30	70	100
4	Professional Core courses	20APC0302	Mechanics of Materials	3	0	0	3	30	70	100
5	Humanities and Social Sciences	20AHSMB01	Managerial Economics and Financial Analysis	3	0	0	3	30	70	100
6	Humanities and Social Sciences	20AHS9905	Universal Human Values	3	1	0	3	30	70	100
7	Engineering Science Courses (LAB)	20AES0506	Internet of Things (IoT) Lab	0	0	3	1.5	30	70	100
8	Professional Core courses (LAB)	20APC0326	Thermal Engineering Lab	0	0	3	1.5	30	70	100
9	Professional Core courses (LAB)	20APC0304	Mechanics of Materials Lab	0	0	3	1.5	30	70	100
10	Skill oriented course*	20ASC0302	Manufacturing Process Lab	1	0	2	2	100	-	100
Total credits							24.5	370	630	1000
Internship 2 Months (Mandatory) during summer vacation										
Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)				4		0	4	100	-	100

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Year : II

Semester : II

Branch of Study : ME

Subject Code	Subject Name	L	T	P	Credits
20AES0324	Thermal Engineering	3	0	0	3

Course Outcomes:

- 1 To student can know working of both S.I and C.I engines with the help of indicator diagrams.
- 2 Student can understand the fuel supply systems, cooling, lubrication and ignition systems
- 3 Student can understand the flame propagation inside the cylinder, stages of combustion in S.I and C.I engines
- 4 To familiar with indicated power, brake power and friction power and their methods of measurement
- 5 the working of reciprocating and rotary air compressors. Student can calculate work done by single and multistage reciprocating air compressors.

UNIT I

I.C. ENGINES: Definition of Engine And Heat Engine, I.C Engine Classification – Parts of I.C. Engines, Working of I.C. Engines, Two Stroke & Four Stroke I.C. Engines SI & CI Engines, Valve and Port Timing Diagrams.

UNIT II

Fuel System: S.I. Engine: Fuel Supply Systems, carburetor types Air Filters, Mechanical and Electrical Fuel Pump – Filters– Gasoline Injection Systems.. Cooling & Lubrication Systems: Cooling Requirements, Air Cooling, Liquid Cooling, Thermo Siphon, Water And Forced Circulation System; Lubrication Systems-Flash, Pressurized and Mist Lubrication. Ignition System: Function Of An Ignition System, Battery coil Ignition System, Magneto Coil Ignition System, Electronic Ignition System using Contact Breaker, Electronic Ignition using Contact Triggers – Spark Advance And Retard Mechanism.

UNIT III

Fuels and Combustion: S I engine: Normal Combustion and Abnormal Combustion – Importance of Flame Speed and Effect of Engine Variables – Type of Abnormal Combustion, Pre-Ignition and Knocking (Explanation) – Fuel Requirements and Fuel Rating, Anti Knock Additives, Combustion Chambers. C.I. Engines: Stages Of Combustion – Delay Period And Its Importance – Effect Of Engine Variables – Diesel Knock– Combustion Chambers (DI And IDI), Fuel Requirements And Fuel Rating.

UNIT IV

Testing and Performance : Parameters of Performance - Measurement of Cylinder Pressure, Fuel Consumption, Air Intake, Exhaust Gas Composition, Brake Power – Determination of Frictional Losses And Indicated Power – Performance Test – Heat Balance Sheet and Chart.

UNIT V

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Air Compressors: Reciprocating Compressors, Effect of Clearance volume in Compressors, Volumetric Efficiency, Single Stage and Multi Stage Compressors.

GAS TURBINES: Simple Gas Turbine Plant – Ideal Cycle, Essential Components – Parameters of Performance. jet propulsion: Principle of Operation – Classification of Jet Propulsive Engines – Working Principles with Schematic Diagrams and Representation on T-S Diagram.

Text Books:

1. Internal Combustion Engines / V. Ganesan- TMH, 4th Edition,2012
2. Thermal Engineering / Rajput / Lakshmi Publications, 9th Edition,2013

Reference Books:

1. I.C. Engines fundamentals, Heywood, McGrawHill, 1st Edition,2011
2. IC Engines – Mathur& Sharma – DhanpathRai& Sons, ,2010
3. Engineering fundamentals of IC Engines – Pulkrabek, Pearson, PHI, 2nd Edition,2009
4. Thermal Engineering, Rudramoorthy – TMH, 10th Edition,2010
5. Thermodynamics & Heat Engines, B. Yadav, Central publishing house., Allahabad, 2002
6. Thermal Engineering – R.S. Khurmi & J.K.Gupta – S.Chand, 15th Edition,2012

COs	PO No. and keyword	Competency Indicator	Performance Indicator
CO1	PO 5: Modern tool usage	5.2	5.2.2
CO2	PO 1: Engineering knowledge	1.2	1.2.2
CO3	PO 5: Modern tool usage	5.2	5.2.2
CO4	PO 5: Modern tool usage	5.2	5.2.2
CO5	PO 1: Engineering knowledge	1.6	1.3.1
	PO 7: Environment and sustainability	7.2	7.2.1

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Year : II

Semester : II

Branch of Study : ME

Subject Code	Subject Name	L	T	P	Credits
20APC0312	Manufacturing Technology	3	0	0	3

Course Outcomes:

- 1 Demonstrate different metal casting processes and gating systems
- 2 Classify working of various welding processes
- 3 Evaluate the forces and power requirements in rolling process
- 4 Apply the principles of various forging operations
- 5 Outline the manufacturing methods of plastics and ceramics.

UNIT I

Introduction: Importance and selection of manufacturing processes, classification and selection of manufacturing processes.

Casting Processes: Introduction to casting process, process steps; pattern: types, materials and allowance; Cores and design of gating system, Gating ratio and time of filling the cavity; Solidification of casting: Concept, solidification of pure metal and alloy; Special casting processes: Shell casting, investment casting, die casting, centrifugal casting, casting defects and remedies.

UNIT II

Metal Forming: Introduction, nature of plastic deformation, hot and cold working, mechanics of metal forming; Rolling: Principle, types of rolling mill and products, roll passes, forces in rolling and power requirements; Extrusion: Basic extrusion process and its characteristics, hot extrusion and cold extrusion, wire drawing, tube drawing.

UNIT III

Forging: Principles of forging, tools and dies. Types: Smith forging, drop forging, forging hammers, rotary forging and forging defects. Sheet metal forming: blanking, piercing, bending, stamping.

UNIT IV

Material Joining Processes: Classification of welding processes, types of welds and welded joints, arc welding, submerged arc welding, gas tungsten arc welding, gas metal arc welding. applications, advantages and disadvantages of the above processes, other fabrication processes. soldering and brazing: Types and their applications, Welding defects: causes and remedies.

UNIT V

Plastics: Types, properties and their applications, processing of plastics, extrusion of plastics, transfer molding and compression molding, injection molding, thermoforming, rotational molding and blow molding.

Text Books :

1. Rao P.N., Manufacturing Technology – Volume I, 5/e, McGraw-Hill Education, 2018.
2. Kalpakjian S and Schmid S.R., Manufacturing Engineering and Technology, 7/e, Pearson, 2018

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(Autonomous)

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Reference Books:

1. Millek P. Groover, Fundamentals of Modern Manufacturing: Materials, Processes and Systems, 4/e, John Wiley and Sons Inc, 2010.
2. Sharma P.C., A Text book of Production Technology, 8/e, S Chand Publishing, 2014.
3. Ian Gibson, David W. Rosen, Brent Stucker, Additive Manufacturing Technologies:

List of COs	PO no. and keyword	Competency	Performance Indicator
CO: 1	PO 1: Engineering knowledge	1.6	1.3.1
CO: 2	PO 5: Modern tool usage	5.2	5.2.2
CO: 3	PO 2: Problem analysis	2.5	2.1.2
CO: 4	PO 5: Modern tool usage:	5.2	5.2.2
CO: 5	PO 7: Environment and sustainability	7.4	7.4.1

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Year : II

Semester : II

Branch of Study : ME

Subject Code	Subject Name	L	T	P	Credits
20APC0302	Mechanics of Materials	3	0	0	3

Course Outcomes:

- 1 Apply the concepts of stress and strain to machine members
- 2 Determine, shear forces, and bending moments in beams
- 3 To find slope and deflection in beams, determine shear forces and bending moments in beams
- 4 Estimate the stresses in machine members such as shafts and springs and design
- 5 Estimate the stresses in thin cylinders due to internal pressure

UNIT I

Stresses and Strains: Types of stresses and strains, stress-strain relations, stress-strain diagram for ductile and other materials, axial loaded bars of uniform and varying cross section, compound bars, relation between three elastic moduli, thermal stresses. Strain energy, resilience

Principal stresses and strains: Biaxial state of stress with and without shear - Mohr's Circle and analytical methods.

UNIT II

Analysis of Beams: Types of beams and loads, shear force and bending moment diagram for cantilever, simply supported and overhanging beams for different types of loadings, point of contra flexure, relation between shearing force and bending moment.

Bending Stresses: Flexural equation, bending stress distribution and efficiency of various cross sections of beams.

UNIT III

Deflection of Beams: Differential equations of the deflection curve, Slope and deflection: using double integration method, Macaulay's method and Moment area method for simply supported, cantilever and overhanging beams. Deflection under single and several loads.

UNIT IV

Torsional and shear stresses: Theory of pure torsion, Shear Stresses: Shear stress distribution for different cross sections of beams.

UNIT V

Buckling of Columns: Analysis of columns to evaluate buckling loads with different boundary conditions, Euler's formula and its limitations, Rankine's formula.

Thin Cylinders: hoop and stresses, longitudinal, cylindrical and spherical shells subjected to internal pressure calculation of volumetric strain.

Text Books :

1. F.P. Beer, E.R. Johnston, Jr & John. T. De Wolf, Mechanics of Materials, 7/e, Tata McGraw-Hill, 2016.
2. SS Rattan, Strength of materials, 3/e, Tata McGraw-Hill, 2016.

Reference Books:

1. Timoshenko, Strength of Materials Part-I& II, 3/e, CBS Publishers, 2004.
2. Popov, Mechanics of Solids, 2/e, New Pearson Education, 2015.

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List of COs	PO no. and keyword	Competency Indicator	Performance Indicator
CO: 1	PO 1: Engineering knowledge	1.3	1.3.1
CO: 2	PO 2: Problem analysis:	2.1	2.1.3
CO: 3	PO 4: Conduct investigations of complex problems	4.1	4.1.2
CO: 4	PO 2: Problem analysis:	2.1	2.1.2
CO: 5	PO 1: Engineering knowledge:	2.6	2.6.3

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Year : II

Semester : II

Branch of Study : ME

Subject Code	Subject Name	L	T	P	Credits
20AOEMB01	Managerial Economics and Financial Analysis	3	0	0	3

Course Outcomes:

- 1 Understand the fundamentals of Economics and Managerial economics viz., Demand, Production, cost, revenue and markets.
- 2 Apply the Concept of Production cost and revenues for effective Business decision
- 3 Analyze how to invest their capital and maximize returns.
- 4 Evaluate the capital budgeting techniques.
- 5 Define the concepts related to financial accounting and management and able to develop the accounting statements and evaluate the financial performance of business entity

UNIT - I Managerial Economics

Introduction – meaning, nature, meaning, significance, functions, and advantages, ME and its role in other fields. Demand - Concept, Function, Law of Demand - Demand Elasticity- Types – Measurement. Demand Forecasting- Factors governing forecasting, Methods.

UNIT - II Production and Cost Analysis

Introduction – Nature, meaning, significance, functions and advantages. Production Function– Least- cost combination– Short run and Long run Production Function- Isoquants and Isocosts, MRTS - Cobb-Douglas Production Function - Laws of Returns - Internal and External Economies of scale. Cost & Break-Even Analysis - Cost concepts and Cost behavior- Break-Even Analysis (BEA) - Determination of Break-Even Point (Simple Problems)-Managerial significance and limitations of Break-Even Analysis.

UNIT - III Business Organizations and Markets

Introduction – Nature, meaning, significance, functions and advantages. Forms of Business Organizations- Sole Proprietary - Partnership - Joint Stock Companies - Public Sector Enterprises. Types of Markets - Perfect and Imperfect Competition - Features of Perfect Competition Monopoly- Monopolistic Competition– Oligopoly-Price-Output Determination - Pricing Methods and Strategies

UNIT - IV Capital Budgeting

Introduction to Capital, Sources of Capital. Short-term and Long-term Capital : Working capital, types, Estimating Working capital requirements. Capital Budgeting – Features, Proposals, Time value of money. Methods and Evaluation of Projects – Pay Back Method, Accounting Rate of Return (ARR), Net Present Value (NPV), and Internal Rate Return (IRR) Method (simple problems).

UNIT - V Financial Accounting and Analysis

Introduction – Nature, meaning, significance, functions and advantages. Concepts and Conventions- Double-Entry Book Keeping, Journal, Ledger, Trial Balance- Final Accounts (Trading Account, Profit and Loss Account and Balance Sheet with simple adjustments). Financial Analysis - Analysis and Interpretation of Liquidity Ratios, Activity Ratios, and Capital structure Ratios and Profitability.

Textbooks:

1. Varshney&Maheswari: Managerial Economics, Sultan Chand, 2013.
2. Aryasri: Business Economics and Financial Analysis, 4/e, MGH, 2019

Reference Books:

1. Ahuja HI Managerial economics Schand,3/e,2013
2. S.A. Siddiqui and A.S. Siddiqui: Managerial Economics and Financial Analysis, New Age International, 2013.
3. Joseph G. Nellis and David Parker: Principles of Business Economics, Pearson, 2/e, New Delhi.
4. Domnick Salvatore: Managerial Economics in a Global Economy, Cengage, 2013.

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Online Learning Resources:

<https://www.slideshare.net/123ps/managerial-economics-ppt>

<https://www.slideshare.net/rossanz/production-and-cost-45827016>

<https://www.slideshare.net/darkyla/business-organizations-19917607>

<https://www.slideshare.net/balarajbl/market-and-classification-of-market>

<https://www.slideshare.net/ruchi101/capital-budgeting-ppt-59565396>

<https://www.slideshare.net/ashu1983/financial-accounting>.

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Semester : II

Branch of Study : ME

Subject Code	Subject Name	L	T	P	Credits
20APC0326	Thermal Engineering Lab	0	0	3	1.5

Course Outcomes:

- 1 To student can know working of both S.I and C.I engines with the help of indicator diagrams.
- 2 Student can understand the fuel supply systems, cooling, lubrication and ignition systems
- 3 Student can understand the flame propagation inside the cylinder, stages of combustion in S.I and C.I engines
- 4 To familiar with indicated power, brake power and friction power and their methods of measurement
- 5 the working of reciprocating and rotary air compressors. Student can calculate work done by single and multistage reciprocating air compressors.

List of Experiments:

1. Valve / Port Timing Diagrams of an I.C. Engines
2. Performance Test on a 4 -Stroke Diesel Engines
3. Performance Test on 2-Stroke Petrol engine
4. Evaluation of Engine friction by conducting Morse test on 4-Stroke Multi cylinder Engine
5. Retardation and motoring test on 4- stroke engine
6. Heat Balance of an I.C. Engine.
7. Air/Fuel Ratio and Volumetric Efficiency of an I.C. Engines.
8. Performance Test on Variable Compression Ratio Engines for CI Engines
9. Performance Test on Reciprocating Air – Compressor Unit
10. Study of Boilers
11. Dismantling / Assembly of Engines to identify the parts and their position in an engine.
12. Engine Emission Measurement for SI & CI Engines.

COs	PO No. and keyword	Competency Indicator	Performance Indicator
CO1	PO 5: Modern tool usage	5.2	5.2.2
CO2	PO 1: Engineering knowledge	1.2	1.2.2
CO3	PO 5: Modern tool usage	5.2	5.2.2
CO4	PO 5: Modern tool usage	5.2	5.2.2
CO5	PO 1: Engineering knowledge	1.6	1.3.1
	PO 7: Environment and sustainability	7.2	7.2.1

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(Autonomous)

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Semester : II

Branch of Study : ME

Subject Code	Subject Name	L	T	P	Credits
20APC0304	Mechanics of Materials Lab	0	0	3	1.5

Course Outcomes:

- 1 Analyze the strength of the beam, SSB
- 2 Design the various types of springs and their loads
- 3 Test the load and strength of bricks, cubes.
- 4 Define and analyze shear test, stress
- 5 Design the strain, stress and compression

List of Experiments:

1. Direct tension test beam
2. Bending test on
 - a) Simply supported beam
 - b) Cantilever beam
3. Torsion test
4. Hardness test
5. Brinells hardness test
6. Rockwell hardness test
7. Test on springs
8. Compression test on cube
9. Impact test
10. Punch shear test

List of COs	PO no. and keyword	Competency Indicator	Performance Indicator
CO: 1	PO 1: Engineering knowledge	1.3	1.3.1
CO: 2	PO 2: Problem analysis:	2.1	2.1.3
CO: 3	PO 4: Conduct investigations of complex problems	4.1	4.1.2
CO: 4	PO 2: Problem analysis:	2.1	2.1.2
CO: 5	PO 1: Engineering knowledge:	2.6	2.6.3

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Semester : II

Branch of Study : ME

Subject Code	Subject Name	L	T	P	Credits
20ASC0302	Manufacturing Process Lab	0	0	3	1.5

Course Outcomes:

- 1 Fabricate different types of components using various manufacturing techniques.
- 2 Carry out Pattern preparation and Estimate the Sand properties
- 3 Carry out the Welding process to join the components
- 4 Carry out Blanking & Piercing operation
- 5 Adapt material forming methods.

1. METAL CASTING

- a) Gating Design and pouring time and solidification time calculations.
- b) Sand Properties Testing – Exercise for Strength and Permeability.
- c) Molding, Melting and Casting for ferrous/ non ferrous materials.

2. WELDING

- a) Arc Welding: Lap & Butt Joint - 2 Exercises
- b) Spot Welding - 1 Exercise
- c) TIG Welding - 1 Exercise
- d) Plasma welding and Brazing - 2 Exercises (Water Plasma Device).

3. MECHANICAL PRESS WORKING

- a) Blanking & Piercing operation and study of simple, compound and progressive press tool.
- b) Hydraulic Press: Deep drawing and extrusion operation.
- c) Bending and other operations.

COs	PO No. and keyword	Competency Indicator	Performance Indicator
CO1	PO 5: Modern tool usage	5.2	5.2.2
CO2	PO 1: Engineering knowledge	1.2	1.2.2
CO3	PO 5: Modern tool usage	5.2	5.2.2
CO4	PO 5: Modern tool usage	5.2	5.2.2
CO5	PO 1: Engineering knowledge	1.6	1.3.1
	PO 7: Environment and sustainability	7.2	7.2.1

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Year : II

Semester : II

Branch of Study : Common to all

Subject Code	Subject Name	L	T	P	Credits
20AHS9905	Universal Human Values	3	1	0	3

Course Outcomes:

- 1 Development of a holistic perspective based on self-exploration about themselves (human being), family, society and nature/existence.
- 2 Understanding (or developing clarity) of the harmony in the human being, family, society and nature/existence
- 3 Strengthening of self-reflection.
- 4 Development of commitment and courage to act
- 5

UNIT – 1: Course Introduction - Need, Basic Guidelines, Content and Process for Value Education

- Purpose and motivation for the course, recapitulation from Universal Human Values-I
- Self-Exploration–what is it? - Its content and process; ‘Natural Acceptance’ and Experiential Validation- as the process for self-exploration
- Continuous Happiness and Prosperity- A look at basic Human Aspirations
- Right understanding, Relationship and Physical Facility- the basic requirements for fulfillment of aspirations of every human being with their correct priority
- Understanding Happiness and Prosperity correctly- A critical appraisal of the current. scenario
- Method to fulfill the above human aspirations: understanding and living in harmony at various levels.

Include practice sessions to discuss natural acceptance in human being as the innate acceptance for living with responsibility (living in relationship, harmony and co-existence) rather than as arbitrariness in choice based on liking-disliking.

UNIT II: Understanding Harmony in the Human Being - Harmony in Myself!

- Understanding human being as a co-existence of the sentient ‘I’ and the material ‘Body’
- Understanding the needs of Self (‘I’) and ‘Body’ - happiness and physical facility
- Understanding the Body as an instrument of ‘I’ (I being the doer, seer and enjoyer)
- Understanding the characteristics and activities of ‘I’ and harmony in ‘I’
- Understanding the harmony of I with the Body: Sanyam and Health; correct appraisal of Physical needs, meaning of Prosperity in detail
- Programs to ensure Sanyam and Health.

Include practice sessions to discuss the role others have played in making material goods available to me. Identifying from one’s own life. Differentiate between prosperity and accumulation. Discuss program for ensuring health vs dealing with disease.

UNIT III: Understanding Harmony in the Family and Society- Harmony in Human- Human Relationship.

- Understanding values in human-human relationship; meaning of Justice (nine universal values in relationships) and program for its fulfillment to ensure mutual happiness; Trust and Respect as the foundational values of relationship
- Understanding the meaning of Trust; Difference between intention and competence
- Understanding the meaning of Respect, Difference between respect and differentiation; the other salient values in relationship

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- Understanding the harmony in the society (society being an extension of family): Resolution, Prosperity, fearlessness (trust) and co-existence as comprehensive Human Goals
- Visualizing a universal harmonious order in society- Undivided Society, Universal Order- from family to world family

Include practice sessions to reflect on relationships in family, hostel and institute as extended family, real life examples, teacher-student relationship, goal of education etc. Gratitude as a universal value in relationships. Discuss with scenarios. Elicit examples from students' lives

UNIT IV: Understanding Harmony in the Nature and Existence - Whole existence as Coexistence

- Understanding the harmony in the Nature
- Interconnectedness and mutual fulfillment among the four orders of nature recyclability and self-regulation in nature
- Understanding Existence as Co-existence of mutually interacting units in all- pervasive space
- Holistic perception of harmony at all levels of existence. Include practice sessions to discuss human being as cause of imbalance in nature (film “Home” can be used), pollution, depletion of resources and role of technology etc.

Include practice sessions to discuss human being as cause of imbalance in nature (film “Home” can be used), pollution, depletion of resources and role of technology etc.

UNIT- V: Implications of the above Holistic Understanding of Harmony on Professional Ethics.

- Natural acceptance of human values
- Definitiveness of Ethical Human Conduct
- Basis for Humanistic Education, Humanistic Constitution and Humanistic Universal Order
- Competence in professional ethics: a. Ability to utilize the professional competence for augmenting universal human order b. Ability to identify the scope and characteristics of people friendly and eco-friendly production systems, c. Ability to identify and develop appropriate technologies and management patterns for above production systems.
- Case studies of typical holistic technologies, management models and production systems
- Strategy for transition from the present state to Universal Human Order: a. At the level of individual: as socially and ecologically responsible engineers, technologists and managers b. At the level of society: as mutually enriching institutions and organizations
- Sum up.

Include practice Exercises and Case Studies will be taken up in Practice (tutorial) Sessions eg. To discuss the conduct as an engineer or scientist etc.

Course Outcomes:

On completion of this course, the students will be able to

1. Students are expected to become more aware of themselves, and their surroundings (family, society, nature)
2. They would become more responsible in life, and in handling problems with sustainable solutions, while keeping human relationships and human nature in mind.
3. They would have better critical ability.
4. They would also become sensitive to their commitment towards what they have understood (human values, human relationship and human society).
5. It is hoped that they would be able to apply what they have learnt to their own self in different day-to-day settings in real life, at least a beginning would be made in this direction.

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MECHANICAL ENGINEERING (ME)

TEXT BOOKS

1. R R Gaur, R Asthana, G P Bagaria, "A Foundation Course in Human Values and Professional Ethics", 2nd Revised Edition, Excel Books, New Delhi, 2019. ISBN 978-93- 87034-47-1
2. R R Gaur, R Asthana, G P Bagaria, "Teachers' Manual for A Foundation Course in Human Values and Professional Ethics", 2nd Revised Edition, Excel Books, New Delhi, 2019. ISBN 978-93-87034-53-2

REFERENCE BOOKS

1. Jeevan Vidya: Ek Parichaya, A Nagaraj, Jeevan Vidya Prakashan, Amar kantik, 1999.
2. A. N. Tripathi, "Human Values", New Age Intl. Publishers, New Delhi, 2004.
3. The Story of Stuff (Book).
4. Mohandas Karamchand Gandhi "The Story of My Experiments with Truth"
5. E. F.Schumacher. "Small is Beautiful"
6. Slow is Beautiful –Cecile Andrews
7. J C Kumarappa "Economy of Permanence"
8. Pandit Sunderlal "Bharat Mein Angreji Raj"
9. Dharampal, "Rediscovering India"
10. Mohandas K. Gandhi, "Hind Swaraj or Indian Home Rule"
11. India Wins Freedom - Maulana Abdul Kalam Azad
12. Vivekananda - Romain Rolland(English)
13. Gandhi - Romain Rolland (English)