Scheme of Examination
BTech 8th Sem (Mechanical Engineering)

S.No	Subjects Name	Code	Teaching Schedule (Hrs)				Examination Schedule (Marks)			Total Marks	Duration of Exam (Hrs)
			L	T	P/D	Total	Sessional	Theory	Practical/viva-voce		
1	Entrepreneurship	ME 402 E	3	1	---	4	50	100	---	150	3
2	MIS	ME-432E	4	1		5	50	100	---	150	3
3	NCM	ME-420E	4	1		5	50	100	---	150	3
4	Power Plant Engineering	ME 404 E	4	1	---	5	50	100	---	150	3
5	Operation research	ME 406 E	3	1	-	4	50	100	-	150	3
6	Entrepreneurship (PR)	ME 408 E	-	-	2	2	50	-	25	75	3
7	Project –II	ME 410 E	---	---	9	9	100	-	100	200	3
8	Seminar	ME 411 E	2	---	---	2	25	---	-	25	-
9	Comprehensive Viva - Voce	ME 412 E	---	---	---	---	50	---	---	50	3
10	General Fitness & Professional Aptitude	ME 414 E	---	---	---	---	---	---	75	75	3
Total			**19**	**5**	**11**	**35**	**475**	**500**	**200**	**1175**	

***Refer List of Electives**
Under ME-411E some of the students may be evaluated in 7th semester and remaining in 8th Sem. Marks will be added in 8th Sem

Lesson Plan

Name of the Faculty : **Mr. Harpreetsingh**

Discipline : **Mechanical Engineering**

Semester : **8th**

Subject : **ENT (ME -402 E)**

Lesson plan : **15 Weeks(From January, 2018 to April, 2018)**

Lecture per Week (in Hours) : **Lectures-04**

Week	Theory	
	Lecture Day	Topic(including assignment/test)
1st	1.	**UNIT I** Definition and concept
	2.	Importance of economics for engineers,
	3.	present value and future value
2nd	4.	Wealth, Goods, Wants, Value and price
	5.	capital, money, utility of consumer
	6.	Introduction, Elements of cost, Prime cost,
3rd	7.	Overhead, Factory cost, Total cost, Selling price,
	8.	Nature of cost, Types of cost
	9.	Definition and concept, Causes of depreciation, Methods of calculating depreciation.
4th	10.	Introduction, Nature of selection problem
	11.	Nature of replacement problem, Replacement of items which deteriorate
	12.	Replacement of machines whose operating cost in crease with time and the value of money also changes with time
5th	13.	methods used in selection of investment and replacement alternatives.
	14.	Entrepreneurship, Role of Entrepreneur in Indian economy

	15.	Characteristics of an entrepreneur
6th	16.	Types of entrepreneurs, some myths
	17.	realities about entrepreneurship
	18.	**UNIT III** Introduction, Role and scope of small scale industries,
7th	19.	concept of small scale and ancillary
	20.	industrial undertakings, How to start a small scale industry,
8th	21.	Steps in launching own venture,
	22.	procedure for registration of small scale industries
	23.	arious developmental agencies-their functions
9th	24.	role in industrial and entrepreneurship development
	25.	Infrastructure facilities available for entrepreneurship development in India.
	26.	Infrastructure facilities available for entrepreneurship development in India.
10th	27.	Introduction, Requirement of a good product design
	28.	Product development process
	29.	Elements of concurrent engineering, quality function developmen
11th	30.	Rapid prototyping
	31.	Various controlling agencies involved -their role and formalities for getting clearance before starting individual ventur
	32.	ASSIGNMENT
12th	33.	**UNIT IV** Financial concept for small-scale industries
	34.	financial requirements Financial support programmer of banks
	35.	government financial agencies, Hire-purchase facilities alternate sources of finance
13th	36.	The modern concept of marketing,
	37.	Definitions, functions and principle of marketing

	38.	Market survey, Pre-feasibility and feasibility of project. Identification and evaluation of business opportunity
14th	39.	preparation of business plan
	40.	Tools for evaluation of techno economic feasibility project report 1
	41.	Tools for evaluation of techno economic feasibility project report 2
15th	42.	SWOT analysis
	43.	marketing research
	44.	Advertising, Market survey
	45.	**ASSIGNMENT**

Text Books: The practice of Entrepreneurship
- By G. G. Meredikh, R.E. Nelson and P.A. Neck

Lesson Plan

Name of Faculty: Mr. Vipul Wadhwa

Discipline: Mechanical Engineering

Semester: 8th

Subject Name and Code: P.P.E. (ME-404E)

Lesson Plan Duration: 15 weeks (January, 2018 to April, 2018)

Work load (Lecture) per week (in hours): Lectures -4

Week	Theory	
	Lecture Day	**Topic**
1st	1	Intro to PPE and conventional sources of energy
	2	Geothermal power plant and its types.
	3	Tidal and solar power plant
	4	Energy sources in India
2nd	5	Test on above topics
	6	Intro to hydrology, runoff, hydrograph, and flow duration curve
	7	Classification of hydro power plant.
	8	Advantage and dis advantage of hydro power plant.
3rd	9	Test
	10	Combination of hydro and steam plants.
	11	High pressure boiler and its types, la-mont and its working
	12	Benson boiler and its working
4th	13	Test
	14	Velox boiler and its working
	15	Loeffler boiler and its working
	16	Economizer and its types
5th	17	Test
	18	Air preheater and its types
	19	Feed water heater and its types.
	20	General layout of thermal power plant
6th	21	Site selection for thermal power plant

	22	Classification and types of coal.
	23	Analysis of coal
	24	Combination of coal and coal burning methods.
7th	25	Test
	26	Over feed and its types.
	27	Under feed stokers and its types
	28	Ash handling and disposal
8th	29	Test
	30	Component of diesel electric power plant
	31	Supercharging of diesel engine.
	32	Advantage of diesel power plant over thermal plant.
9th	33	Element of gasturbine power plant,
	34	Thermal refinement and comparion with other plant.
	35	Combined steam and gasturbine power plant.
	36	Advantage of gas turbine power plant over other.
10th	37	Heat balance sheet for thermal power plants.
	38	Nuclear power plant in india
	39	Layout of nuclear power plant and component of nuclear reactor
	40	Types and classification of nuclear reactor
11th	41	Liquid cooled and gas cooled reactor
	42	Breeder reactor and its types.
	43	Functioning of breeder reactor.
	44	Molten metal cooled nuclear reactor

12th	45	Disposal of nuclear waste.
	46	Cost of electrical energy and selection of types of generation
	47	Performance of power plants.
	48	Tariff method for electrical energy
13th	49	Operating characterstics of power plants
	50	Load division among generators.
	51	Operational characterstics of power plants.
	52	Assignment 1
14th	53	Revision of Nuclear power plant in india
	54	Revision of Layout of nuclear power plant and component of nuclear reactor
	55	Revision of Types and classification of nuclear reactor
	56	TEST
15th	57	Disposal of nuclear waste
	58	Assignment 2
	59	Molten metal cooled nuclear reactor.
	60	Revision of syllabus and doubt clarification

Lesson Plan

Name of the Faculty : **Mr. AJAY SHARMA**

Discipline : **Mechanical Engineering**

Semester : **8th**

Subject : **Operation Research– ME 406 E**

Lesson plan : **15 Weeks(From January, 2018 to April, 2018)**

Lecture per Week (in Hours) : **Lectures-04**

Week	Theory	
	Lecture Day	Topic(including assignment/test)
1st	1.	**Unit: 1** Development of operations Research
	2.	characteristics and scope of operations Research
	3.	Operations Research in Management, Models in operations Research
	4.	**Assignment No 1:** Model Formulation
2nd	5.	Types of mathematical models
	6.	Limitations of operations Research.
	7.	L.P. models, simplex method
	8.	**Test 1:** Different models in operation research
3rd	9.	The algebra of simplex method. (Minimization and Minimization problems)
	10.	The big M method
	11.	Post optimality analysis
	12.	Simplex method
4th	13.	Essence of duality theory
	14.	Application of sensitivity analysis
	15.	**Unit 2:** Introduction to model
	16.	Matrix terminology
5th	17.	Formulation and solution of Transportation model (least cost method, Vogel's Approximation method)
	18.	Least time transportation problems
	19.	**Assignment No 2:** Different transportation models
	20.	**Test 2:** Different transportation models problems
6th	21.	Introduction to net work logic

	22.	Numbering of events (Fulkersen Rule)
	23.	PERT calculations - Forward path, back-ward path
	24.	Slack
7th	25.	comparison with PERT
	26.	Critical path
	27.	Project cost
	28.	crashing the net work
8th	29.	Updating (PERT and CPM).
	30.	Floats
	31.	probability
	32.	**Unit 3:** Introduction and applications of simulation
9th	33.	advantages and limitations of simulation technique
	34.	generation of random numbers
	35.	Time-flow mechanism
	36.	**Assignment No 3:** simulation techniques
10th	37.	simulation languages
	38.	Steps in decision theory approach
	39.	Decision Machinery environment
	40.	Decision machining under certainty and uncertainty, Decision machining under condition of risk
11th	41.	Decision trees, Minimum enchained criteria
	42.	Advantages and limitations of decision tree solutions, post Optimality
	43.	**Test 3:**Simulation techniques and decision trees
	44.	Definition of assignment models
12th	45.	Comparison with transport model
	46.	Mathematical representation of assignment model
	47.	Formulation and solution of argument models
	48.	Variation of the argument model, Alternate optimal solutions
13th	49.	**Assignment 4:** Assignment model and its solution
	50.	**Unit 4:** Introduction and Applications of queuing Theory
	51.	Waiting time and idle time costs
	52.	Single channel queuing theory and multi channel queuing theory with Poisson
14th	53.	Arrivals and Exponential services
	54.	Numerical on single channel and multi channel queuing theory
	55.	**Assignment 5:**Queing theory models
	56.	Theory of games, competitive games , Rules and Terminology in game Theory
15th	57.	Rules for game theory- saddle point, dominance
	58.	Mixed strategy (2 x2 games) , mixed strategy (2 x n games or m x 2 games), mixed strategy (3 x3 games)
	59.	Two person zero sum games, n-person zero sum games
	60.	**Test 4:** Queing Theory and Game theory numerical problems

Lesson Plan

Name of the Faculty : **Mr. SiddharthArora**

Discipline : **Computer Sc. & Engineering**

Semester : **8th**

Subject : MANAGEMENT INFORMATION SYSTEM– ME 432 E

Lesson plan : **15 Weeks(From January, 2018 to April, 2018)**

Lecture per Week (in Hours) : **Lectures-04**

Week	Theory	
	Lecture Day	Topic(including assignment/test)
1st	1.	**Unit 1:**What is MIS? Decision support systems, systems approach
	2.	The systems view of business, MIS
	3.	MIS organization within the company management organizational theory
	4.	**Assignment No 1:**The systems approach
2nd	5.	Development of organizational theory
	6.	Management and organizational behavior
	7.	Management information
	8.	**Test 1:** management information
3rd	9.	The system approach
	10.	Evolution of an information systems
	11.	Basic information systems
	12.	**Assignment No 2:** Decision making
4th	13.	MIS
	14.	MIS as a technique for making programmed decision assisting information systems
	15.	Project planning for MIS : General business planning
	16.	**Test 2:** MIS
5th	17.	Appropriate MIS
	18.	Planning-general
	19.	MIS planning –details
	20.	**Assignment 3:** MIS Planning
6th	21.	**Unit 2:** Define the problems
	22.	Set system objectives

	23.	Establish system constraints
	24.	**Test 3:**establish system constraints
7th	25.	Determine information needs
	26.	Determine information sources
	27.	Develop alternative conceptual
	28.	**Assignment 4:**Designs
8th	29.	Select one document the system concept
	30.	Prepare the conceptual
	31.	Design report
	32.	**Test 4:** design report
9th	33.	**Unit 3:** Inform and involve the organization
	34.	Aim of detailed design
	35.	Project management of MIS detailed design
	36.	**Assignment 5:**identify dominant and trade off criteria
10th	37.	Define the subsystems
	38.	Sketch the detailed operating subsystems and information flow
	39.	Determine the degree of automation of each operation
	40.	**Test 5:** Sketch the detailed operating subsystems and information flow
11th	41.	Inform and involve the organization again
	42.	Inputs, and processing, early system testing
	43.	Software, hardware and tools
	44.	**Assignment 6:**propose an organization to operate the system, document the detailed design
12th	45.	Revisit the manager –user
	46.	**UNIT IV** Plan the Implementation , acquire floor space and plan space layouts
	47.	Organize for implementation, develop,
	48.	**Test 6:**organize for implementation
13th	49.	Procedures for implementation
	50.	How to train operating personnel,computer related acquisitions
	51.	Develop forms for data collection and information dissemination
	52.	**Assignment 7:**develop the files, test the system
14th	53.	Cutover, document the system
	54.	Evaluate the MIS control and maintain the system
	55.	Pitfalls in MIS development : Fundamental Weakness
	56.	**Test 7:** MIS control and maintain the system
15th	57.	Soft spots in planning
	58.	Design problems
	59.	Implementation: The TARPIT
	60.	**Assignment 8:** TARPIT

Text Books:

1.. Management Information system by W.S. JawadeKar - Tata McGraw Hill.

LESSON PLAN

Name : Mr. ANIL KUMAR(Theory)

Discipline: MECHANICAL ENGG.PEPARTMENT

Semester: 7TH

Subject: N.C.M. (ME-420 E)

Lesson Plan Duration: 15 weeks (from January, 2018 to April, 2018)

Work Load: Lectures-04

Week	Theory	
	Lecture Day	**Topic**
1st	1st	**Unit – I:** Introduction to Non conventional machining process Unconventional machining processes.
	2nd	Rapid prototyping processes, their classification
	3rd	Ultrasonic Machining
	4th	Elements of process, design of cutting tool. metal removal mechanism, effect of parameters
2nd	5th	limitations and applications, surface finish
	6th	Mild Steel, Medium Carbon Steel.
	7th	economic considerations.
	8th	Applications.
3rd	9th	**Unit – II: Electrochemical Machining**
	10th	Elements of process, process chemistry,
	11th	metal removal mechanism, tool design, accuracy, surface finish.
	12th	work material characteristics, economics advantages, limitations and applications.
4th	13th	Electrochemical grinding, debarring and honing, Chemical machining.
	14th	**Electric Discharge Machining**
	15th	Principle and mechanism of metal removal, generators,
	16th	Electrode feed control, electrode material.
5th	17th	tool electrode design, EDM wire cutting,
	18th	surface finish
	19th	accuracy and applications.
	20th	Revision
6th	21st	**Unit – III :Jet Machining**
	22nd	Principal and metal removal mechanism of abrasive and water jet machining,
	23rd	process variables, design of nozzle,
	24th	advantages, limitations and applications.
7th	25th	Plasma arc machining, Electron beam machining, laser beam machining
	26th	principles and metal removal mechanism, process parameters
	27th	advantages and limitations, applications. U
	28th	Problems

8th	29th	**Unit –IV: Rapid Prototyping**
	30th	Fundamentals, process chain, physics of processes, principles
	31st	process mechanism of SLA, SGC, LOM, FDM and SLS processes
	32nd	advantages and limitations, a
9th	33rd	applications of RP processes, RP data formats,
	34th	STL file format, STL file problems, STL file repair,
	35th	translators and formats.
	36th	problems
10th	37th	**Rapid Tooling Process**
	38th	Introduction
	39th	fundamentals, classification, indirect RT processes
	40th	Assignment.
11th	41st	Principles of Silicone
	42nd	Rubber Molding, Epoxy Tooling,
	43rd	Spray Metal Tooling,
	44th	Test.
12th	45th	Revision
	46th	Pattern for Investment Casting
	47th	Vacuum Casting
	48th	Vacuum forming processes,
13th	49th	Assignment.
	50th	Problems
	51st	direct RT processes,
	52nd	Shape Deposition manufacturing
14th	53rd	limitations and applications.
	54th	advantages
	55th	test
	56th	assignment
15th	57th	problems
	58th	Non conventional machining process
	59th	revision
	60th	test