GATEWAY INSTITUTE OF ENGINEERING AND TECHNOLOGY, SONIPAT
LESSON PLAN

Name of Faculty: Mr Sudhir Malik
Discipline:- Civil Engineering
Semester: 8th
Subjects: DISASTER MANAGEMENT (CE-486B)
Lession Plan Duration: 10 Weeks (from January 2018 to April 2018)
Workload(Lecture/Practical) per week (in hours) : Lecture-03

Week	Theory	
	Lecture Day	**Topic (including assignment/test)**
1st	1st	Introduction to Disaster Management
	2nd	Natural Disasters
	3rd	Man made Disasters
2nd	4th	International Year of Disaster Reduction
	5th	Hydro-meteorological based disasters I
	6th	Tropical Cyclones
3rd	7th	Floods
	8th	Droughts
	9th	Revision & Test
4th	10th	Hydro-meteorological based disasters II
	11th	Desertification Zones
	12th	Forest Fires
5th	13th	Geological based disasters
	14th	Earthquake
	15th	Tsunamis
6th	16th	Landslides
	17th	Avalanches
	18th	Revision & Test
7th	19th	Manmade Disasters I
	20th	Chemical Industrial hazards
	21st	Fire hazards
8th	22nd	Major power break downs
	23rd	Traffic accidents
	24th	Use of remote sensing in disaster mitigation and management.
9th	25th	Use of GIS in disaster mitigation and management.
	26th	Risk to disaster mitigation and management options
	27th	Vulnerability to disaster mitigation and management options
10th	28th	Warning
	29th	Forecasting
	30th	Revision & Test

Name of Faculty: Mr Vijay Rohilla
Discipline:- Civil Engineering
Semester: 8th
Subjects: ELEMENTS OF EARTHQUAKE ENGINEERING (CE-402B)
Lession Plan Duration: 12 Weeks (from January 2018 to April 2018)
Workload(Lecture/Practical) per week (in hours) : Lecture-03

Week	Theory	
	Lecture Day	**Topic (including assignment/test)**
1st	1st	Introduction: Introduction to various disasters
	2nd	Disaster Management, Nature of dynamic loads
	3rd	Earthquake, wind and blast loads
2nd	4th	Characteristics of dynamic problems
	5th	Method of discretization
	6th	Theory of Vibrations: Formulation of Equation of Motions
3rd	7th	Free and forced vibrations of single degree of freedom systems
	8th	Damping and its effects, transient vibration
	9th	Response spectrum theory
4th	10th	Review of formulation of flexibility and stiffness matrices of framed structures
	11th	Application of vibration theory
	12th	Revision & Test
5th	13th	Multi-degree of freedom systems: Mode shapes and frequencies
	14th	Numerical techniques for finding modes shapes and corresponding frequencies
	15th	Orthogonality relationship of principal modes
6th	16th	Determination of fundamental frequency
	17th	Rayleigh's principle and its applications
	18th	Normal mode theory for forced vibration, analysis of multi-degree freedom system
7th	19th	Dynamic response by mode superposition method
	20th	Seismic performance, repair and strengthening: Vibration of continuum system
	21st	Free and forced vibration response
8th	22nd	Identification of Seismic damage in RC Buildings
	23rd	Effect of structural irregularities on performance, criteria for repair and strengthening
	24th	Various techniques and their applications
9th	25th	Seismic resistant building Architecture
	26th	Revision & Test
	27th	Introduction to Structural Failures due to Earthquake
10th	28th	Introduction to IS: 1893 - 2002: Seismic analysis and design of OHSR's
	29th	Framed structures by equivalent lateral load procedure
	30th	Modal analysis
11th	31st	Revision & Test
	32th	Introduction to Ductile Detailing of Structures
	33th	Concept of Soft Story Shear Walls
12th	34th	Use of Codes with reference to Masonry Buildings like IS: 4326
	35th	Use of Codes with reference to Masonry Buildings like IS: 13827, IS: 13828
	36th	Revision & Test

Name of Faculty: Mr Ravi Chopra
Discipline:- Civil Engineering
Semester: 8th
Subjects: HUMAN VALUES, ETHICS & IPR (MGT 402B)
Lession Plan Duration: 12 Weeks (from January 2018 to April 2018)
Workload(Lecture/Practical) per week (in hours) : Lecture-03

Week	Theory (MGT 402B)	
	Lecture Day	**Topic (including assignment/test)**
1st	1st	Introduction: Role of Engineer in Nation Building and in service of mankind.
	2nd	Engineering Ethics: Senses of 'Engineering Ethics'
	3rd	Variety of moral issues - types of inquiry
2nd	4th	Moral dilemmas- moral autonomy Kohlberg's theory
	5th	Gilligan's theory - consensus and controversy
	6th	Professions and professionalism professional ideals and virtues
3rd	7th	Theories about right action - self-interest-customs and religion
	8th	Uses of ethical theories
	9th	Revision & Test
4th	10th	Human Values: Morals, Values and Ethics
	11th	Work Ethic – Service Learning – Civic Virtue
	12th	Respect for Others – Living Peacefully – caring
5th	13th	Sharing – Honesty – Courage – Valuing Time – Co-operation
	14th	Commitment – Empathy – Self-Confidence
	15th	Character – Spirituality
6th	16th	Engineering as Social Experimentation: Engineering as experimentation
	17th	Engineers as responsible
	18th	Experimenters - codes of ethics-a balanced outlook on law-the challenger case study
7th	19th	Revision & Test
	20th	Engineer's Responsibility for Safety: Safety and risk
	21st	Assessment of safety and risk - risk benefit analysis
8th	22nd	Analysisreducing risk-the three mile island
	23rd	Chernobyl case studies.
	24th	Responsibilities: Collegiality and loyalty
9th	25th	Respect for authority - collective bargaining - confidentiality
	26th	Conflicts of interest, occupational crime
	27th	Revision & Test
10th	28th	Rights: professional rights - employee rights
	29th	Intellectual property rights (IPR)-discrimination,
	30th	Arbitration and litigations
11th	31st	Global Issues: Multinational corporations
	32th	Environmental ethics-computer ethics-weapons development
	33th	Developmentengineers as managers-consulting engineers
12th	34th	Engineers as expert witnesses and advisors
	35th	Moral leadershipsample code of conduct
	36th	Revision & Test

Name of Faculty: Mr Vishal Rohilla
Discipline:- Civil Engineering
Semester: 8th
Subjects: IRRIGATION ENGINEERING II (CE – 404B)
Lession Plan Duration: 15 Weeks (from January 2018 to April 2018)
Workload(Lecture/Practical) per week (in hours) : Lecture-03 , Practicals -02 hours

Week	Theory (CE – 404B)	
	Lecture Day	**Topic (including assignment/test)**
1st	1st	Canal falls-necessity and location
	2nd	development of falls
	3rd	design of cistern element
2nd	4th	roughening devices
	5th	Design of Sarda type fall
	6th	Design of straight Glacis fall
3rd	7th	Off-take alignment
	8th	Cross-Regulator and Distributory Head Regulators
	9th	devices to control silt entry into the off taking channel
4th	10th	Silt Ejector, Canal Escapes
	11th	Cross Drainage Works: Classification and their selection
	12th	Hydraulic Design Aspects of Aqueducts,Syphon Aqueducts
5th	13th	Super Passage, Canal Syphon and Level Crossing, Design of Canal Transitions.
	14th	revision & Test
	15th	Diversion Canal Headworks: Various components and their functions
6th	16th	Causes of failure of weir/barrages on permeable foundation
	17th	Bligh's creep theory
	18th	Khosla's method of independent variables
7th	19th	use of Khosla's curves, various corrections.
	20th	revision & Test
	21st	Storage Headworks: Types of dams
8th	22nd	selection of a site, gravity dam-two dimensional analysis
	23rd	forces acting, stability criterion
	24th	elementary profile of a dam
9th	25th	Grout Curtain and drainage galleries, Arch dams
	26th	constant angle and constant radius arch dam
	27th	simple design and sketchs, most economical angle.
10th	28th	Earth dam, design principles
	29th	seepage through earth dams
	30th	seepage line, control of seepage
11th	31st	design of filters
	32nd	Spillways and Energy Dissipators: Requirements of spillway and spillway capacity
	33rd	types of spillways and their suitability
12th	34th	Design aspects of Ogee spillways
	35th	chute, side channel
	36th	revision & Test
13th	37th	shaft and syphon spillways
	38th	Energy dissipation below spillways
	39th	stage discharge and jump height curves
14th	40th	stilling basins
	41st	USBR
	42th	I.S. Stilling Basins for different Froude no. ranges
15th	43th	Design of stilling basins
	44th	Revision
	45th	Test

Name of Faculty: Mr Sumit Kumar
Discipline:- Civil Engineering
Semester: 8th
Subjects: WATER POWER ENGINEERING (CE-464B)
Lession Plan Duration: 11 Weeks (from January 2018 to April 2018
Workload(Lecture/Practical) per week (in hours) : Lecture-03

Week	Theory	
	Lecture Day	**Topic (including assignment/test)**
1st	1st	Introduction: Sources of power , estimation of water power
	2nd	Necessity and importance of harnessing small hydro power
	3rd	Flow duration and power duration curves
2nd	4th	Load curve, load factors
	5th	Capacity factors, utilisation factors, firm and secondary power
	6th	Types of Hydro Power Plants
3rd	7th	Elements of Hydro power, classification of hydro-power plants
	8th	Run-of- river plants, storage plants diversion canal development
	9th	Pumped storage plants, tidal power plants
4th	10th	Base load and peak load plants in a power grid
	11th	Revision & Test
	12th	Intakes: Intake structures
5th	13th	Functions and their types
	14th	Components of intakes-forebay
	15th	Trash racks, gates and valves
6th	16th	Force required to operate gates
	17th	Revision & Test
	18th	Conveyance System: Penstocks
7th	19th	Design criterion, economical diameter anchor blocks
	20th	Cradles and footings, water hammer
	21st	Instantaneous closure of power canal
8th	22nd	Surge tank, surges in canals
	23rd	Revision & Test
	24th	Turbines: Types of turbines
9th	25th	Specific speed and classification of turbines
	26th	Synchronous speed, scroll casing
	27th	Flumes and draft tubes, dimensions of scroll casing and draft tubes
10th	28th	Setting of turbines
	29th	Power House: General layout and arrangements of hydro-power units
	30th	Number and size of units
11th	31st	Sub-structure, spacing of units
	32th	Super-structure, underground power stations, tidal power
	33th	Revision & Test