JABALPUR ENGINEERING COLLEGE, JABALPUR (MP)
(An Autonomous Institute of Govt. of M.P.)
Affiliated to Rajiv Gandhi Technological University, Bhopal (MP)
Scheme of Study and Examination (w.e.f. July 2011)

BE (PTDC) First Sem. Branch : Civil Engineering

Course Code	Subject	Periods			EVALUATION SCHEME					Credits
		L	T	P	SESSIONAL EXAM			ESE	SUB TOTAL	
					TA	CT	TOTAL			
MA-01	Engineering Mathematics - I	3	1	-	10	20	30	70	100	4
CS-03	Basic Computer Programming	3	1	-	10	20	30	70	100	4
CE-05	Engineering Geology	3	1	-	10	20	30	70	100	4
CE-07	Building Drawing & Design	3	1	-	10	20	30	70	100	4
(PRACTICAL/DRAWING/DESIGN)										
CS-04L	Computer Programming Lab	-	-	2	20	-	20	30	50	2
CE-06L	Engineering Geology Lab	-	-	2	20	-	20	30	50	2
CE-08L	Building Drawing & Design Lab	-	-	2	20	-	20	30	50	2
CE-56L	Mechanics of Materials Lab	-	-	2	50	-	50	-	50	2
	Total	**12**	**4**	**8**	**150**	**80**	**230**	**370**	**600**	**24**

T.A. Teachers Assessment, CT- Class Test, ESE - End Semester Examination, Total Marks 600 Total Periods : 24, Total Credits : 24

COURSE CONTENT & GRADE (w.e.f. July 2010)

Branch	Subject Title	Subject Code	Grade for End Sem		CGPA at the end of every even semester
			T	P	
B.E. Common	**ENGINEERING MATHEMATICS - I**	MA01	Min "D"	Min "D"	5.0

ENGINEERING MATHEMATICS-I

UNIT-I Expension of function Maclaurin's and Taylor's theorem. Partial differentiation, total differential coefficients, homogeneous function, Euler's theorem, approximation and error. Differentiation under integral sign. Maxima and Minima of two variables. Curve tracing (Cartesian and polar curve), Curvature, Radius of Curvature.

UNIT-II Definite integral as limit of a sum, Application summation of series. Double interals, Change of order of integrals. Triple integral, Length of curves, Area Voulme of surfaces using double and triple integrals Beta and Gamma functions.

UNIT-III Ordinary differential equation of first order. Linear and higher degree. Linear higher order differential equation with constant coefficients. Homogeneneous linear differential equation. Simultaneous differentia equations.

UNIT-IV Rank of Matrix Solution of simultaneous equation by elementary transformation & consistency of equation Eigen values and Eigen vactors, Cayfey Hamilton theorem and its application to find the inverse Diagnolisation of matrices.

UNIT-V Boolean algebra Algebra of logic. Principle of Duality Basic theorems, Boolean Expressions and functions. Graph theory.Graph subgraphs, degree and distance Tree,cycles and nNetwork Elementry concept of fuzzy logic.

Reference Books:-

1. Higher Engineering Mathematics by B.V. Ramana TMH.
2. Higher Engineering Mathematics- By B.S. Grewal.
3. Engineering Mathematics.By K.A.Laxminarayan. Vikas pub. House Pvt.Ltd.
4. Advance Engineering Mathematics-Erwin Kreyszig.John Willy & sons.
5. Advance Engineering Mathematics-Wylie and Barrett.TMH.
6. Differential Calculus by Gorakh Prasad pothi shala publication.
7. Integral Calculus by Chandrika Prasad pothi shala publication.

COURSE CONTENT & GRADE (w.e.f. July 2010)

Branch	Subject Title	Subject Code	Grade for End Sem		CGPA at the end of every even semester
			T	P	
B.E. Common	**BASIC COMPUTER PROGRAMMING**	CS03	Min "D"	Min "D"	5.0

BASIC COMPUTER PROGRAMMING

UNIT - I

Computer Hardware - Block diagram of computer Hardware, Software and Firmware Interaction of Hardware and Software, Understanding the Boot Process, General function of CPU, ALU, Control unit and memory. The Motherboard. BIOS, Multimedia Devices and Mass Storage

UNIT- II

History of C , Characteristics of C, C Program Structure , Constants, Data types, Variables, Keywords ,Console Input/Output Statements, Compilation and Execution Operators. Arithmetic, Unary Assignment, Relational & Logical Conditional Branching & Looping Statements - if Statement ,switch Statement ,Looping Concepts , for ,while , do-while loop Jump Statements. Arrays-Array Concepts, Rules & Restrictions, Single & Multi-Dimensional arrays

UNIT - III

Functions- Types of Functions, Functions and Arrays, Function Prototyping Scope of Variables Built-in Functions, Strings- String Functions, String Manipulation Structures-Defining New Data types, Unions ,Type Casting, Enumerated Data types ,Static Variables ,Type Definition.

UNIT – IV

Pointers-Pointer Concepts, Pointers and Functions, Pointers and Arrays, Array of Pointers Static Initialization, Pointers and Structures, Illegal indirection Dynamic Memory Allocation and Data Structures-malloc(),sizeof() and free() calloc() and realloc()

UNIT - V

C++ Characteristics Object-Oriented Terminology. Differences between Object-Oriented programming and Procedure oriented programming Object, Class, Encapsulation, Inheritance, Polymorphism, Object-Oriented Paradigm Abstract Data Types. Member Functions Class structure, Class scope, this pointer. Friend function.

Reference Books:

1. C Programming Language by Karnighan & Ritchie, TMH Pub.
2. Complete Reference in C, by Herbert Schield TMH Pub.
3. Mastering Turbo C by Kelly & Bootle – BPB Pub.
4. Practical C Programming by Steve Oualline, O'Reilly. Shroff Pub. & Distributors Pvt. Ltd.
5. Let us 'C' by Yashwant Kanetkar, BPB Publication
6. C Language Programming by Byron Gottfried – TMH Pub.
7. Programming in ANSI C by Balaguruswamy, TMH Pub.
8. Pointers in C by Yashwant Kanetkar
9. The Complete PC Upgrade &Maintenance Guide by Mark Minasi - BPB Pub

COURSE CONTENT & GRADE (w.e.f. July 2010)

Branch	Subject Title	Subject Code	Grade for End Sem		CGPA at the end of every even semester
			T	P	
	ENGINEERING GEOLOGY	CE05	Min "D"	Min "D"	5.0

ENGINEERING GEOLOGY

UNIT – I : PHYSICAL GEOLOGY :

The Earth as a Planet, important parts of the Earth, Action of Atmosphere, Weathering of Rocks, Principles and processes, Engineering significance of weathering, Geologic Action of wind erosion transportation and deposition, Action of River, Ground water and glaciers. Processes and features with all Engineering consideration.

UNIT – II : MINERALOGY & PETROLOGY :

Study of Rocks : their origin, composition, classification. Detailed study of important Igneous, Sedimentary, Metamorphic Rocks with Rock cycle. Bowens reaction series, distribution of rocks on Indian sub continent. Civil Engineering importance of Rock forming minerals , Study of Minerals with their importance, hand specimen properties. distribution of some economic minerals on Indian sub continent.

UNIT – III : STRUCTURAL GEOLOGY :

Structural features of rocks, Folds, Faults, Joints, Lineaments, Mountains, valleys. terminology, classification, their Engineering properties for Civil Engineering considerations. Earth quakes : Their causes,

UNIT – IV : REMOTE SENSING, GIS & ITS APPLICATION :

Remote Sensing technology, E.M.S., Spectral signatures , its Applications in Civil Engineering, Geographical information system, data base management, use of Remote sensing in G.I.S. for soil, rock, site selection purposes.

UNIT – V : APPLIED GEOLOGY :

Study of major and minor structures of Civil Engineering like Dam ,Tunnel, Bridges, Culvert, Roads. their terminology, classification, different causes for failure, Geological considerations different methods for sub- surface, surface, aerial, satellite investigations for site selection of such structures.

References :

1. Engineering Geology by Kranine & Jade
2. Engineering Geology by Pravin Singh
3. Physical and Engineering Geology by S.K.Garg

COURSE CONTENT & GRADE (w.e.f. July 2010)

Branch	Subject Title	Subject Code	Grade for End Sem		CGPA at the end of every even semester
			T	P	
	BUILDING DRAWING & DESIGN	CE07	Min "D"	Min "D"	5.0

BUILDING DRAWING & DESIGN

UNIT-I : Components of a building and their functions. Drawing & dimensions of various types of foundations, doors, windows, ventilators, lintels, chhajjas, stairs, trusses.

UNIT-II : Basics of building planning : Orientation, sun diagram. Principles of building planning viz aspect, prospect, roominess, Grouping, elegance etc, building lay-out. Energy Efficient buildings, principle of architectural composition (i.e. unit, scale, contest etc.)

UNIT-III : Percentage built up area concept, FAR, open area, set backs, height of buildings, municipal bye laws National building code and its important provisions. Preparation of submission drawing. Basics of colony planning. Fire safety measures.

UNIT-IV : Planning of residential buildings on different sizes of plots including plan, elevation sectional elevation. drawing to show all dimensions of various components of buildings. health buildings.

UNIT-V : Planning of school & Hostel buildings including drawings selection of site and salient features related to dimensions of each components of these buildings.

References :

1. Building planning, Designing & scheduling by Gurcharan Singh & Jagdish Singh
2. Building Design & Drawing by Shah, Kale & Patki
3. Building Design & Drawing by Malik & Meo
4. Building Construction by B.C. Punamia
5. Estimating & Costing by B.N. Datta

COURSE CONTENT & GRADE (w.e.f. July 2010)

Branch	Subject Title	Subject Code	Grade for End Sem		CGPA at the end of every even semester
			T	P	
B.E.	**COMPUTER PROGRAMMING LAB**	CS04L			

COMPUTER PROGRAMMING LAB
(Suggested Exercise)

1. Write a program in C to CALCULATE Cos(X)=1-X^2/2!+X^4/4!-……..
2. Write a program in C to convert sentence lower case to upper case
3. Write a program in C for COUNTING THE NUMBER OF OCCURRENCE OF CHARACTER IN A STRING.
4. Write a program in C to SUM OF POSITIVE AND NEGATIVE ELEMENTS IN AN ARRAY
5. Write a program in C to reverse a string.
6. Write a program in C to calculate the string length
7. Write a program in C to count vowels
8. Write a program in C to calculate x power n
9. Write a program in C fir swapping 2 numbers (using2 variables)
10. Write a program in C to SWAP FIRST AND SECOND WORDS in a sentence.
11. Write a program in C to CHANGE THE CASE OF FIRST LETTER
12. Write a program in C for GENERATION OF ARMSTRONG NUMBERS.
13. Write a program in C for GENERATION OF FIBONACCI SERIES
14. Write a program in C to SUM OF DIGITS OF NUMBER
15. Write a program in C to FIND THE OF NCR A NUMBER.

COURSE CONTENT & GRADE (w.e.f. July 2010)

Branch	Subject Title	Subject Code	Grade for End Sem		CGPA at the end of every even semester
			T	P	
	ENGINEERING GEOLOGY LAB	CE06L	Min "D"	Min "D"	5.0

ENGINEERING GEOLOGY LAB
(Suggested Exercise)

1. Identify the given minerals sample for the following :
"HAND SPECIMEN" Mega-scopic Identification on the basis of physical properties .
i. Rock forming minerals
ii. Ore forming minerals
iii. Gangue minerals

2. Identify the given rock sample for the following :
"HAND SPECIMEN" Mega-scopic Identification on the basis of physical properties
i. Igneous rocks
ii. Sedimentary rocks
iii. Metamorphic rocks

3. Study the given geological maps for the following :

i. Topography - Configuration of the ground surface with the help of (dotted lines) contours drawn at a regular interval.
ii. Geologic rock boundaries (dark continuous lines.) superimposed on geographic map.
iii. Inter relationship of different rock types with each other i.e. unconfornities, sequence etc.
iv. Structural feature of the rock formations in the form of folds, faults igneous intrusions etc.

4. Use the given geological map for the site selection of a Dam, Bridge, Canal & Tunnel.

COURSE CONTENT & GRADE (w.e.f. July 2010)

Branch	Subject Title	Subject Code	Grade for End Sem		CGPA at the end of every even semester
			T	P	
	BUILDING DRAWING & DESIGN LAB	CE08L	Min "D"	Min "D"	5.0

BUILDING DRAWING & DESIGN LAB
(Suggested Exercise)

1. Drawing of various types of foundations.
2. Drawing of various types of foundations door, window, ventilators, stair case
3. Drawing of plan section & elevation of simple four Roomed building
4. Planning & Drawing of residential building
5. Planning & Drawing of simple health building
6. Planning & Drawing of school
7. Planning & Drawing of Hostel
8. Planning & Drawing of Shopping complex.

COURSE CONTENT & GRADE (w.e.f. July 2010)

Branch	Subject Title	Subject Code	Grade for End Sem		CGPA at the end of every even semester
			T	P	
	MECHANICS OF MATERIALS LAB	CE56L	Min "D"	Min "D"	5.0

The experimental work to cover tension, compression, bending & impact test etc. on steel, cast iron, RCC & timber. Fire resistant test of structures & combustibility of building materials tests as per ISI & other experiments based on the syllabus.