

SVM Institute of Technology, Bharuch  
 Department of Civil Engineering  
 Syllabus: Mid Semester Examination (Even semester 2018-19)  
 BE – II Year (4<sup>th</sup> Semester) Civil Engineering

**Name of Faculty:** Hiral Dayma

**Subject Code:** 2140003

**Subject Name:** Engineering Economics & Management

Sr. No.	Unit	Topics
1	1	<b>Introduction to Economics;</b> Definitions, Nature, Scope, Difference between Microeconomics & Macroeconomics Theory of Demand & Supply; meaning, determinants, law of demand, law of supply, equilibrium between demand & supply Elasticity; elasticity of demand, price elasticity, income elasticity, cross elasticity
2	2	<b>Theory of production</b> Production function, meaning, factors of production (meaning & characteristics of Land, Labour, capital & entrepreneur), Law of variable proportions & law of returns to scale Cost; meaning, short run & long run cost, fixed cost, variable cost, total cost, average cost, marginal cost, opportunity cost. Break even analysis; meaning, explanation, numerical
3	3	<b>Markets</b> Market meaning, types of markets & their characteristics ( Perfect Competition, Monopoly, Monopolistic Completion, Oligopoly) National Income; meaning, stock and flow concept, NI at current price, NI at constant price, GNP, GDP, NNP, NDP, Personal income, disposal income.
4	6	<b>Introduction to Management &amp; Management Principles</b> Definitions, Nature, scope Management & administration, skill, types and roles of managers Management Principles; Scientific principles, Administrative principles, Maslow's Hierarchy of needs theory
5	9	<b>Introduction to production management</b> Definitions, objectives, functions, plant layout types & factors affecting it, plant location, factors affecting it. Introduction to Human Resource Management; definitions, objectives of manpower planning, process, sources of recruitment, process of selection

**Reference Books:**

1. Engineering Economics, R.Paneerselvam, PHI publication
2. Fundamentals of Management: Essential Concepts and Applications, Pearson Education, Robbins S.P. and Decenzo David A.
3. Economics: Principles of Economics, N Gregory Mankiw, Cengage Learning
4. Principles and Practices of Management by L.M.Prasad
5. Principles of Management by Tripathy and Reddy
6. Modern Economic Theory, By Dr. K. K. Dewett & M. H. Navalur, S. Chand Publications

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**Name of Faculty:** Prof. Chetan V. Kulkarni

**Subject Code:** 2140607

**Subject Name:** BUILDING & TOWN PLANNING

Sr. No.	Unit	Topics
		<b><u>BUILDING PLANNING</u></b>
1	1	Introduction to buildings, Type of buildings, Principles of building planning, Principles of architecture composition
2	2	Building by-laws as per National Building Code, Standards for residential buildings, Building by-laws of local authority, standards for industrial, public, commercial and institutional buildings
3	3	Planning of earthquake resistant building considering symmetry, simplicity, continuity, consideration of locating staircase and overhead water tank, most sensitive to earthquake
4	4	Preparing working drawing of residential building, software application in planning, detached, semidetached, row houses and apartments with scale proportion, open spaces standard as per F.S.I. permissible
5	5	Elements of perspective views, Types of views such as one point, two point perspective etc
6	6	Building services like water supply, drainage, electrification etc. for modern buildings
		<b><u>TOWN PLANNING</u></b>
7	7	Historical aspects and origin of Town Planning in the World and in India

**Text Book(s):**

1. **Planning, designing building** by Y. S. Sane, Allies Book Stall
2. **Town Planning** by G. K. Hiraskar
3. **National Building Code-2005**, New Delhi
4. **Building Planning, Designing and scheduling** by Gurucharan Singh, Standard Book House, New Delhi
5. **General Development Control Regulations** published by AUDA and GICEA
6. **Building Drawing** by M. G. Shah, C. M. Kale and S. Y. Patki, Tata Mc Graw Hill, New

Delhi

7. Town Planning by S.C. Rangwala, Charotar publishing House, Anand

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BE – II Year (4<sup>th</sup> Semester) Civil Engineering

Name of Faculty: Prof. Ruchi Gupta

Subject Code: 2140603

Subject Name: Structural Analysis - I

Sr. No.	Unit	Topics
1	1.	<b>Fundamentals of Statically determinate structures:</b> Types of statically determinate & indeterminate structures, Static and kinematic indeterminacy, Stability of structures, Principle of superposition, Maxwell's reciprocal theorems. Computation of internal forces in statically determinate structures such as plane truss, plane frame, grids.
2	2.	<b>Displacement of determinate beams and plane truss:</b> Differential equation of elastic curve, relation between moment, slope and deflection, Macaulay's Method, Moment area method, Conjugate beam method applied to beams. Joint displacement of determinate plane truss using unit load method.
3	3.	<b>Direct and bending stresses:</b> Members subjected to eccentric loads, middle third rule, kernel of section, chimney subjected to wind pressure, retaining walls, dams subjected to hydraulic pressure
4	4.	<b>Columns and Struts:</b> Buckling of columns, different end conditions, effective length, least radius of gyration, Euler's and Rankine's formulae, columns with initial curvature, eccentrically loaded columns, columns with lateral loading.
5	5.	<b>Arches, cables and Suspension Bridges:</b> Calculation internal forces in three hinge arches with circular and parabolic shapes subjected to various types of loading. Forces and end actions in cables due to various types of loading. Unstiffened three hinged parabolic and cantenary type suspension bridge.

**Text Book(s):**

1. Junarkar S.B. & Shah H.J.; Mechanics of Structures Vol I; Charotar publishing house, Anand.
2. Wang C. K.; Intermediate Structural Analysis; Tata McGraw Hill book Company, New Delhi.
3. Gere & Timoshenko; Mechanics of Materials; CBS Publishers & Distributors, Delhi.

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**Name of Faculty: Prof. Sanket Mistry & Aneri Chavan**

**Subject Code: 2140601**

**Subject Name: Advanced Surveying**

<b>Sr. No.</b>	<b>Module</b>	<b>Topics</b>
<b>1</b>	<b>Tacheometric Surveying</b>	Introduction, purpose, principle, instruments, stadia constants, methods of tacheometry, anallatic lens, subtense bar, field work in tacheometry, reduction of readings, errors and precisions.
<b>2</b>	<b>Geodetic Surveying</b>	Principle and Classification of triangulation system- Selection of base line and stations- Orders of triangulation- Triangulation figures- Station marks and signals-marking signals- Extension of base, Reduction of Centre, Selection and marking of stations
<b>3</b>	<b>Theory of Errors</b>	Introduction, types of errors, definitions, laws of accidental errors, laws of weights, theory of least squares, rules for giving weights and distribution of errors to the field observations, determination of the most probable values of quantities.
<b>4</b>	<b>Modern Surveying Instruments</b>	Introduction, Electromagnetic spectrum, Electromagnetic distance measurement, Total station, Digital self-leveling levels, and scanners for topographical survey.

**Reference Book(s):**

- 1. Surveying Vol. I, II and III by Dr. B.C. Punamia, Laxmi Publishers, New Delhi**
- 2. Surveying and Leveling by Subramanian, R., Oxford University Press, New Delhi**
- 3. Surveying and Leveling by N.N. Basak, Tata Mcgraw Hill, New Delhi**

SHRI S'AD VIDYA MANDAL INSTITUTE OF TECHNOLOGY  
COLLAGE CAMPUS, OLD N.H.-8, BHARUCH.

**REGULAR (MID) EXAMINATION - MARCH- 2019**

B.E. SECOND YEAR (FOURTH SEMESTER)

**BRANCH: CIVIL(06)**

**FACULTY NAME:DR.RAJESH JADAV SUBJECT NAME: NUMERICAL AND  
STATISTICAL METHODS**

**SUBJECT CODE:2140606**

**SYLLABUS FOR REGULAR(MID) EXAMINATION**

<b>Numerical Methods</b>		
1	CHAPTER	<b>Finite Difference and Interpolation:</b> Forward, Backward and central operators, Interpolation by polynomials: Newton's Forward, Backward Interpolation formulae ,Gauss & Stirling's central difference formulae, Newton's divided and Lagrange's formulae for unequal Intervals
2	CHAPTER	<b>Numerical Integration:</b> Newton-cotes formula, Trapezoidal and Simpson's formulae, error formulae, Gaussian quadrature formulae
3	CHAPTER	<b>Solutions of system of Linear Equations:</b> Gauss elimination, partial pivoting , Gauss-Jacobi and Gauss-Seidel methods
4	CHAPTER	<b>Roots of Algebraic and Transcendental Equations:</b> Bisection, false position, Secant and Newton-Raphson methods, Rate of convergences
5	CHAPTER	<b>Numerical solution of Ordinary Differential Equations:</b> Taylor series method, Euler method, Runge-Kutta method of order four, Milne's predictor-Corrector method

**Reference Books:**

1. E. Kreyszig, Advanced Engineering Mathematics(8thEdition), John Wiley (1999)
2. S. D. Conte and Carl de Boor, Elementary Numerical Analysis-An AlgorithmicApproach (3rdEdition), McGraw-Hill, 1980
3. C.E. Froberg, Introduction to Numerical Analysis (2ndEdition), Addison-Wesley,1981
4. Gerald C. F. and Wheatley P.O. , Applied Numerical Analysis (5thEdition),Addison-Wesley, Singapore, 1998
5. Johnson Richard A., Miller and Freund's - Probability and Statistics (8thEdition), PHI.

Dr. Rajesh A. Jadav  
HOD,  
Engineering Mathematics Department

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**Name of Faculty: Prof. Shonak G. Purohit**

**Subject Code: 2140608**

**Subject Name: Concrete Technology**

Sr. No.	Module	Topics
1	2	<b>Concrete Making Materials:</b> 2.1 Cement: Chemical composition, Hydration of cement, structure of hydrated cement, Tests on cement ( special Cements, water chemical admixtures. 2.2 Aggregates: Properties, Grading, Methods of combining aggregates, Specified grading, Testing of aggregates. 2.3 Water – General requirements & limiting values of impurities
2	3	<b>Fresh Concrete:</b> Properties of fresh concrete, Definition and Measurement methods of workability as per IS and ASTM standards, factors affecting workability, Segregation & Bleeding, Slump loss, Re-tempering, Site preparations for concreting, Mixing, Conveying, Placing, Compaction, Finishing of concrete. Curing & various Methods of curing.
3	4	<b>Hardened Concrete:</b> Strengths of hardened concrete (Tensile & Compressive strength, Flexural & Bond strength), standard test methods as per IS and ASTM, Failure mechanism under compression & tension, Stress-strain behaviour of concrete, Overview of Modulus of elasticity, Dimensional stability – Creep & Shrinkage
4	5	<b>Mix design of Concrete:</b> Principles of concrete mix design, Parameters and factors influencing mix design, Indian Standard methods of mix design, Acceptability criteria, variability of results, Various provisions of IS code for sound concrete..
5	7	<b>Special concrete and Concreting methods:</b> advanced cement based composites, Fiber reinforced concrete, Polymer modified concrete, Self-compacting concrete, Light weight concrete, High strength concrete, Light- weight & heavy weight concrete, High volume fly ash concrete. Special concreting methods: Pumped concrete, Ready mix concrete, Under-water concreting, Hot & cold weather concreting, Precast concrete.

**Reference Book(s):**

1. Properties of Concrete - Neville A. M.
2. Concrete Technology- Shetty M. S
3. Concrete Technology- Gambhir M. L