VEER NARMAD SOUTH GUJARAT UNIVERSITY

SCHEME OF TEACHING EXAMINATION AT B. E. I (ALL BRANCHES)

FIRST SEMESTER

Sr. No.	Subject	Code	Teaching Scheme	
1	2	3	4	
			L P	D + TA
			Hour Per Week	
01.	Mathematics - I	ASM 101 AD	3	0+1
02.	Engineering Mechanics	AMD 102 AD	3	2+1
03.	Basic Mechanical System	MED 103 AD	3	2+0
04.	Engineering Graphics (Offered to first half Division)	CED 104 AD	1	4+0
05	Engineering Physics (Offered to first half Division)	ASP 105 AF	3	2+0
05A	Electrotechniques (Offered to first half Division)	ELE 205 AS	3	2+1
06.	Engineering Chemistry (Offered to first half Division)	ASC 106 AF	3	2+0
06A.	Computer Fundamental and Programming (Offered to first half Division)	CMP 206 AS	2	2+0
	Total for first half of Division		**16**	**14**
	Total for Second half of Division		**15**	**15**
	GRAND TOTAL		**30**	**Hours**

VEER NARMAD SOUTH GUJARAT UNIVERSITY

B. E. I (TEXTILE PROCESSING)

SEMESTER-I

ASM 101 AD MATHEMATICS -I

Teaching Scheme			Theory Exam		Practical/Quiz/Viva Exam		Grand Total
(No. Of Contact hr.)			Duration (hr.)	Marks	Sem. End Exam	Cont. Int. Evaluation	
Theory	Tut.	Pract.					
3	1	0	3	100	--	--	100

THEORY

(1) **Complex Variable:**

Reorientation of complex number, DeMower's theorem Rational index and its applications,

function : exponential, logarithmic, trigonometric and hyperbolic function.

(2) **Calculus:** Reorientation of calculus, graphs and differentiation of hyperbolic and inverse hyperbolic function, successive differentiation, standard forms, leibnitz's theorem and applications, techniques of partial differentiation.

Infinite series, convergence and divergence concepts, power series, expansion of function: Taylor's and Mac Laurin's series.

Interminate forms:, $0/0$, ∞/∞, $\infty \quad 0$, 1^{∞} , $\infty^{0}, 0^{\infty}$ application of derivations: Curvature.

Curve clasing; cartesioan, polar and parametric Co-ordinates application of intergration: Area, Length of curve, Volume of solid of revolution, C.G.,M.I., Mass.

(3) **Ordinary Differential Equations (First order)**

Reorientation exact differential equations and intergrating functions, unified approach to first order differential equations,(odes): first order and higher degree odes. Modelling of real world problems, particularly Engg. System, first order differential equations, Models in Particular, RC and RL networks, spread of technical innovations, spread of epidemic

PRACTICALS / DRAWING + TUTORIAL ASSIGNMENTS :

Based on the theory course prescribed above.

REFERENCES :

1. Thomas G. H., Calculus and Analytical Geometry, Narosa, 1986
2. Bajpal A. C., Calculas I. M. And fairley J. A. Mathematics for Engineering Vol. I, John Wiley & sons.,1986.
3. Srivastava R.S.L. Engineering Mathematics, Vol. I TMG Publication, 1980.
4. Alan Jeffrey, Essentials of Engineering Mathematics, Champan Hall .1992.
5. S.L. Ross, Introduction to ordinary Differential equation, John Wiley, 1989.
6. J. N. Kapur , Mathematical Modeling, Wiley eastern Ltd., 1989.

VEER NARMAD SOUTH GUJARAT UNIVERSITY

B. E. I (TEXTILE PROCESSING)
SEMESTER-I

AMD 102 AD ENGINEERING MECHANICS

Teaching Scheme (No. Of Contact hr.)			Theory Exam		Practical/Quiz/Viva Exam		Grand Total
			Duration (hr.)	Marks	Sem. End Exam	Cont. Int. Evaluation	
Theory	Tut.	Pract.					
3	1	2	3	100	30	20	150

THEORY

(1) Definition of Mechanics, Definition of force and it's S. I. Units, method of problem solution, concurrent coplanar forces, forces in plane and space, applications of triangle law, parallelogram law, equilibrium of forces.

(2) Rigid bodies, non- concurrent forces, moment about point and axis, equilibrium of non-concurrent forces.

(3) Analysis of perfect truss, method of joints, method of sections, graphical methods.

(4) Analysis of cable subjected to point loads , UDL & self weight.

(5) Centroid, centre of gravity, area moment or inertia. Mass moment of inertia

(6) Application of friction to engineering problems, viz., wedge ladder, belt etc.,

(7) Graphical solution of rectilinear motion and it's application curvilinear motion, normal tangential and transverse components of velocity and acceleration.

(8) Kinetics of practicals, dynamic equilibrium, work, power, and energy

(9) Computer applications for few topics of engineering mechanics.

PRACTICALS / DRAWING + TUTORIAL ASSIGNMENTS :

Based on the theory course prescribed above.

REFERENCES :

1. Bear. F.P. & Johnston. E. R., 'Vector mechanics for engineers: statistics & Dynamics', Mc Graw- Hill book Company, 1988.
2. Desai J. A. & Mistry. B. B.- Engineering Mechanics - statistics & Dynamics, Popular Prakashan. 1995.
3. Hibbeler R. C. - Engineering Mechanics - statistics & Dynamics, Mac Millan Publishing Co. 1989.
4. Shames I. H. - Engineering Mechanics - statistics & Dynamics, Prentice Hall of India Pvt. Ltd., 1990.
5. Shelley Joseph F. - Vector mechanics for engineers: statistics & Dynamics ,Mc Graw- Hill Book Company, 1991.
6. Timoshenko S. & Young. D. H. Engineering Mechanics - Mc Graw-Hill Book Company, 1956.

VEER NARMAD SOUTH GUJARAT UNIVERSITY

B. E. I (TEXTILE PROCESSING) SEMESTER-I

MED 103 AD BESIC MECHANICAL SYSTEM

Teaching Scheme (No. Of Contact hr.)			Theory Exam		Practical/Quiz/Viva Exam		Grand Total
			Duration (hr.)	Marks	Sem. End Exam	Cont. Int. Evaluation	
Theory	Tut.	Pract.					
3	0	2	3	100	30	20	150

THEORY

1. Conventional and Non Conventional energy sources- types of fuels, calorific value of fuels, calculation of minimum air required for complete combustion of fuel.
2. Steam generators definition, classification, general study of Cochran, Babcock Wilcox, Lancashire and Loccomotive Boilers, boiler mounting and assessories, draught classification, calculation of chimney height.
3. Internal Combustion engines - Definition , Classification, components, working of the two strock and four strock cycle engines, S. I and C. I. Engines, Different system of I. C. Engines like fuel System, ignition system, cooling system.
4. Layout of different types of power plants - Thermal power plant, Nuclear power plant, Hydro power plant, Gas turbine power plant.
5. Refrigeration and air-conditioner: Definition of refrigeration and air-conditioning, Vapor compression system, domestic refrigerator, Ice plant, Window air-conditioner.
6. Machine Tools: Introduction to Different types of machine tools such as lathe, drilling machine, Shaper and milling machines, various operation, Introduction to various Manufacturing processes.

PRACTICALS / DRAWING + TUTORIAL ASSIGNMENTS :

Based on the theory course prescribed above.

REFERENCES :

1. R.K. Rajput: Thermal Engineering, Laxmi Publication, 1994s.
2. T. S. Ranjan: Basic Mechanical Engineering, Wiley Estern Ltd., 1994.
3. S. B. Mathur, S. Domkundwar: Elements of Mechanical Engineering, Dhanpatrai & Sons, 1984.
4. S. K. Hajra Chaudhry: Elements of Workshop Technology Vol. - I, Asia Publishing Co. Ltd., 1988.
5. P. S. Ballaney: Thermal Engineering, Khanna Publishers, 1995.
6. A. A. Menon, Sakaria: Elements of Heat Power, Popular Publication, 1986.
7. H.R. Kapoor: Thermal Engineering Vol.-I & Vol.-II., Tata McGraw Hill Co. 1988.
8. H. S. Bawa: Workshop Technology, Tata McGraw Hill Co. 1995.

CED 104 AD ENGINEERING GRAPHICS

Teaching Scheme (No. Of Contact hr.)			Theory Exam		Practical/Quiz/Viva Exam		Grand Total
			Duration (hr.)	Marks	Sem. End Exam	Cont. Int. Evaluation	
Theory	Tut.	Pract.					
1	0	4	3	100	30	20	150

THEORY

1. Engineering Graphics:
Introduction, Importance and role of Graphics in Engineering graphics. Equipments and Instruments, Standard drawing papers, Drafting Techniques, lettering dimensioning and architectural symbols as per I.S. Codes.

2. Graphics Presentations:
Developments of Graphs, Scales and nomograms for two and three variables, scales conversions and engineering illustrations.

3. Setting of Curves:
Different types of engineering curves, Characteristics. Construction and drawing of curves: Ellipse, Parabola, Hyperbola and Spirals.

4. Technical Sketching and Detailing:
Sketching and building plans, building components, electrical circuits and machine foundation.

5. Engineering Projections:
Types, uses and Principles of isometric and orthographic projections, projections of points and lines.

6. Computer Graphics:
Use of computer in graphics, and autocad applications.

PRACTICALS / DRAWING + TUTORIAL ASSIGNMENTS :

Based on the theory course prescribed above.

REFERENCES

1. K. Venugopal: Engineering Drawing and Graphics, Willey - Eastern Ltd., Delhi-1994.
2. Narayan L. L.: Engineering Drawing and Graphics, T. M. F. Publications., 1992.
3. M.V. Ranganath: Four year degree course in engineering teaching.
4. David L. Cook: N. Mc Deugal: Engineering Graphics and design with computer applications, published by: Helf Richard & Winston, Japan & New York -1985.
5. Bhatt N. D. : Elements of Engineering drawing , Charetar publishing house, Anand. 1985.

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B. E. I (TEXTILE PROCESSING) SEMESTER-I

ASP 105 AS ENGINEERING PHYSICS

Teaching Scheme (No. Of Contact hr.)			Theory Exam		Practical/Quiz/Viva Exam		Grand Total
			Duration (hr.)	Marks	Sem. End Exam	Cont. Int. Evaluation	
Theory	Tut.	Pract.					
3	0	2	3	100	30	20	150

THEORY

1. Thermodynamics:
First law of thermodynamics and its applications, reversible and irreversible processes, second law of thermodynamics, Entropy and its calculations in reversible and irreversible processes, Entropy and disorder, Enthalpy and free energy.

2. Electromagnetism:
Amperes theorem and its application to determine magnetic induction in case of
(i) A standard conductor carrying current, (ii) Solenoid & (iii) Toroid
Lorenz force, Hall effect in metals, high energy particles accelerators, cyclotron,betatron.
Gauss's law of magnetism, types of matters magnetism, diamagnetism, paramagnetism, nuclearmagnetism, three magnetic vectors.

3. Optics:
Spatial and temporal coherence, interference by division of wave front and amplitude, interference by thin films, measurement of film thickness, Michelson's interferometer and light propagation, Fresnel and Fraunhoffer, Fraunhoffer diffraction at double slits, multiple slits and circular aperture, rayleigh criterion, resolving power of grating, telescope and prism, polarization, polarizing sheets, Malus law, polarization by reflection , Brewster's law, polarization by double refraction, circular and elliptical polarization by scattering of light, Huygen's theory for uniaxial and biaxial crystals.

4. Modern Physics:
Source of light , cavity radiators, spectrum power distribution, Wien's rayleigh, Jaans and Plank's law, Dual nature of matter and radiation, photoelectric effect, Einstine's photoelectric equation, compton's scattering De Broglie waves, Wave and group velocity, uncertainty principle.
X-Ray , X-Ray diffraction and bragg's law, Quantum physics of hydrogen atom, Bohr's postulates and applications in explanation of hydrogen spectrum, Bohr's correspondence principle, Frank and hertz's experiments

5. Laser Physics:
Stimulated and Spontaneous emission, Einstein's A and B coefficients, optical pumping and population inversion, different lasers, gas, solid state lasers (He-Ne Lasers and Ruby lasers) and application in holography.

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PRACTICALS / DRAWING + TUTORIAL ASSIGNMENTS :
Based on the theory course prescribed above.

REFERENCES :

1. Resnick and Haliday: Physics Part I & II, Willey - Eastern Ltd., Delhi-1995.
2. Chapter of Part -I: 22-7, 8, 25-2,4,7,8,9,10
   Chapter of Part -II: 34-1,2,5,33-5-7,35-6,37-2 to 7,43-2,5,6,7,8,44-5,6,45-1 to 6,4 - 1,2,3,4,5,7,47-1 to 9,48-1,5.
3. A. Beiser, concept of the modern physics, Willey - Eastern Ltd., Delhi-1993
4. A. Ghtak: Introduction of the modern optics, T.M.G. Pub., 1993.
5. J. B. Rajan :Heat and Thermodynamics, S. Chand .1994.
6. D. N. Vasudeva: Electricity and Magnetism. S. Chand and co.., 1990.
7. S. Tolansky: Atomic Physics, Orient pub., 1990.

VEER NARMAD SOUTH GUJARAT UNIVERSITY

B. E. I (TEXTILE PROCESSING) SEMESTER-I, II

ASC 106 AF, ASC 106 AS ENGINEERING CHEMISTRY

Teaching Scheme (No. Of Contact hr.)			Theory Exam		Practical/Quiz/Viva Exam		Grand Total
			Duration (hr.)	Marks	Sem. End Exam	Cont. Int. Evaluation	
Theory	Tut.	Pract.					
3	0	2	3	100	30	20	150

THEORY

1. Water:
   Sources, impurities, hardness, estimation and units, treatment for (I) boiler feed water and(ii)potable water, desalination of brackish water.
2. Cement:
   Manufacture, main constituents, setting and hardening of Portland cement, heat of hydration, RCC decay and protection.
3. Pollution:
   Types, sources, effect and control of air water pollutants, sewage, BOD, COD, Waste water treatments
4. Polymers:
   Chain and step polymerization, mechanisms of chain polymerization, resins & plastics, thermoplasts and thermosets, moulding methods, structures and uses of PE, PP, PVC, VC, - VA copolymer, PMMA, PTFE, Phenoplast, amino resins, polyester, nylon, epoxy, silicon resin and polyurathene.,No. of average molecular masses.
5. Corrosion:
   Dry & wet their mechanisms, causes and remedial measures of galvanic crevice, pitting and stress corrosion, corrosion control-surface preparation, Zn & Sn coatings, cathodic & anodic protection, inhibitors and paints.
6. Only types and use of:
   Insulators, semiconductors, lubricants, abrasives, adhesives, composite materials, glasses, refractories and non-ferrous alloys.
7. Outline of instrumental methods of chemical analysis:
   pH-metry, potentiometry, conductometry, polarography, visible spectrophotometry and flame photometry.

PRACTICALS / DRAWING + TUTORIAL ASSIGNMENTS :

Based on the theory course prescribed above.

REFERENCES :

1. M. Jain & Jain :- Engineering Chemistry, Dhanpat Rai & Sons publications, 1995
2. C. V. Agraval, Chemistry of Engineering materials, Tara Book Agency, 1990
3. Chatwal & Anand, Instrumental Methods Of Chemical Analysis, 199

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B. E. I (TEXTILE PROCESSING) SEMESTER-I, II

CPM 206 AF/ CPM 206 AS

COMPUTER FUNDAMENTALS & PROGRAMMING

Teaching Scheme			Theory Exam		Practical/Quiz/Viva Exam		Grand Total
(No. Of Contact hr.)			Duration (hr.)	Marks	Sem. End Exam	Cont. Int. Evaluation	
Theory	Tut.	Pract.					
2	0	2	2	50	30	20	100

THEORY

1. Fundamentals of Computers:
Basic elements of computer systems input devices, out put devices, processors and memory concept of hardware and software, programming languages, high level and low level programming languages, need of an operating system, internal and external commands, overview of typical operating system.

2. C- Programming languages:
Introduction to C- Programming language, identifiers and keywords, data types, constants and variables, Declarations and statements, representation of expressions, operations and library functions, data input and output statements, functions, arrays and pointers arithmetic, one & two dimensional arrays, pointer representations of arrays, introduction of structures, random & sequential files, File handling in -C.

PRACTICALS / DRAWING + TUTORIAL ASSIGNMENTS :
Based on the theory course prescribed above.

REFERENCES :

1. Gottfried B. S.: Programming with C, Schaum's outline series, TMG publication 1994.
2. Rajaram V.: Fundamentals of Computers, prentice Hall publication, 1994.
2. Kernigham & Ritchie: The C programme language, prentice Hall publication, 1934.
4. Garry bronson 7 stephen menconi: A first book of ANSI - C: fundamentals of C Programming, Jaico publication. 1993.
5. Mullish & Kapoor: The spirit of C, Jaico publication.1994.