

## B.Tech. Agricultural Engineering

### DAYALBAGH EDUCATIONAL INSTITUTE FACULTY OF ENGINEERING B.TECH. (AGRICULTURAL ENGINEERING): 2021-22

#### FOURTH SEMESTER

<b>COURSE NUM.</b>	<b>COURSE TITLE</b>	<b>Credits</b>	<b>End sem. Exam.</b>	<b>Theory/ Practical</b>
AEM401	HORTICULTURE CROP MANAGEMENT	2.0	Y	T
AEM402	ENGINEERING PROPERTIES OF AGRICULTURAL PRODUCE	2.0	Y	T
AEM403	IRRIGATION ENGINEERING	3.0	Y	T
AEM404	IRRIGATION ENGINEERING LAB	1.0	Y	P
CEM404	GEOMATICS I	3.0	Y	T
CEM405	GEOMATICS LAB	1.0	Y	P
MEM404	MECHANICS OF MACHINES	3.0	Y	T
MEM405	MECHANICS OF MACHINES LAB	1.0	Y	P
MEM410	HEAT AND MASS TRANSFER	2.0	Y	T
ENH481	ENGLISH IV	3.0	Y	T
EGC481	INDUSTRIAL VISIT	1.0	N	P
GKC481	SC.METH., G.K. & CURRENT AFFAIRS IV	1.0	N	T
CAC481	CO-CURRICULAR ACTIVITIES	3.0	N	P
<b>WORK EXPERIENCE COURSE (Any one from the following)</b>				
AEW401	REPAIR OF FARM EQUIPMENT	2.0	N	P
AEW402	ENERGY AUDITING FOR POLYHOUSE & FARM STRUCTURES	2.0	N	P
DPW 401	COMMERCIAL ART	2.0	N	P
EEW402	REPAIR OF ELECTRICAL EQUIPMENT	2.0	N	P
EEW403	3D PRINTING TECHNIQUES	2.0	N	P
EEW404	MICRO CONTROLLERS & IOT	2.0	N	P
MEW402	PHOTOGRAPHY	2.0	N	P
MEW403	REFRIGERATION & AIRCONDITIONING	2.0	N	P
<b>TOTAL CREDITS</b>		<b>28.0</b>		

Course Number: **AEM401**, Course Title: **HORTICULTURE CROP MANAGEMENT**

Class: B.Tech., Status of Course: FULL COURSE, Approved since session:

Total Credits:2, Periods(55 mts. Each)/week:2(L-2+T-0+P/S-0), Min.pds./sem.:26

Unit1

Scope of horticultural. Soil and climatic requirements for fruits, vegetables and floriculture crops, improved varieties, Judging maturity time for harvesting of crop; Study of seed viability and germination test;

Unit2

Criteria for site selection, layout and planting methods, nursery raising, commercial varieties/hybrids. sowing and planting times and methods, seed rate and seed treatment for vegetable crops; Identification and description of important fruits, flowers and vegetable crops;

Unit3

Macro and micro propagation methods, plant growing structures, pruning and training, crop coefficients, water requirements and critical stages, Preparation of nursery bed; Practices of pruning and training in some important fruit crops,

Unit4

Fertilizer application, fertigation, irrigation methods, harvesting, grading and packaging, post-harvest practices, Garden tools, Study of different garden tools; cultural operations for vegetable crops (sowing, fertilizer application, mulching, irrigation and weed control);

Unit5

Management of orchard, Extraction and storage of vegetables seeds. Major pests and diseases and their management in horticulture crops. seed extraction techniques; identification of important pests and diseases and their control, visit to commercial greenhouse/ polyhouse

Suggested Readings

Bansal. P.C. 2008. Horticulture in India. CBS Publishers and Distributors, New Delhi.

Saraswathy, S., T.L.Preethi, S.Balasubramanyan, J. Suresh, N.Revathy and S.Natarajan. 2007.

Postharvest management of Horticultural Crops. Agrobios Publishers, Jodhpur.

Arjunan, G., Karthikeyan, G, Dinakaran , D. and Raguchander, T. 1999. Diseases of Horticultural Crops. AE Publications, Coimbatore.

Sharma Neeta and Mashkoo Alam. 1997. Postharvest diseases of Horticultural crops. International Book publishing Co. UP.

Course Number: **AEM402**, Course Title: **Engineering properties of Agricultural Produce;**

Class: B.Tech., Status of Course: FULL COURSE, Approved since session:

Total Credits:2, Periods(55 mts. each)/week:2(L-2+T-1+P/S-0), Min.pds./sem.:39

Unit1

Classification and importance of engineering properties of Agricultural Produce, shape, size, roundness, sphericity, volume, density, porosity, specific gravity, surface area of grains, fruits and vegetables, Thermal properties, Heat capacity, Specific heat, Thermal conductivity, Thermal diffusivity, Heat of respiration;

Unit2

Co-efficient of thermal expansion, Friction in agricultural materials; Static friction, Kinetic friction, rolling resistance, angle of internal friction, angle of repose, Flow of bulk granular materials, Aero dynamics of agricultural products, drag coefficients, terminal velocity.

Unit3

Rheological properties; force, deformation, stress, strain, elastic, plastic and viscous behaviour, Newtonian and Non-Newtonian liquid, Visco-elasticity, Newtonian and Non-Newtonian fluid, Pseudo-plastic,

Unit4

Dilatant, Thixotropic, Rheopectic and Bingham Plastic Foods, Flow curves. Electrical properties; dielectric loss factor, loss tangent, A.C. conductivity and dielectric constant, method of determination.

#### Unit5

Application of engineering properties in handling processing machines and storage structures

#### Suggested Readings

Mohesin, N.N. 1980. Physical Properties of Plants & Animals. Gordon & Breach Science Publishers , New York.

Mohesin, N.N. 1980. Thermal Properties of Foods and Agricultural Materials. Gordon & Breach Science Publishers , New York.

Prentice, J.H. 1984. Measurement in Rheological Properties of Food Stuffs. Elsevier Applied science Pub. Co. Inc. New York.

Rao, M.A. and Rizvi, S.H., 1995. Engineering Properties of Foods. Marcel Dekker Inc. New York.

Singhal OP & Samuel DVK. 2003. Engineering Properties of Biological Materials. Saroj Prakashan.

### Course Number: **AEM403**, Course Title: **Irrigation Engineering**

Class: B.Tech., Status of Course: FULL COURSE, Approved since session:

Total Credits:3, Periods(55 mts. each)/week:3(L-3+T-1+P/S-0), Min.pds./sem.:52

#### Unit1

Major and medium irrigation schemes of India, purpose of irrigation, environmental impact of irrigation projects, source of irrigation water, presentstatus of development and utilization of different water resources of the country

#### Unit2

Measurement of irrigation water: weir, flumes and orifices and other methods; open channel water conveyance system : design and lining of irrigation field channels, on farm structures for water conveyance, control & distribution;

#### Unit3

Underground pipe conveyance system: components and design; land grading: criteria for land levelling, land levelling design methods, estimation of earth work;

#### Unit4

Soil water plant relationship: soil properties influencing irrigation management, soil water movement, infiltration, soil water potential, soil moisture characteristics, soil moisture constants, measurement of soil moisture, moisture stress and plant response;

#### Unit5

Water requirement of crops: concept of evapotranspiration (ET), measurement and estimation of ET, water and irrigation requirement of crops, depth of irrigation, frequency of irrigation, irrigation efficiencies; surface methods of water application: border, check basin and furrow irrigation- adaptability, specification and design considerations.

#### Suggested Readings

Michael A.M. 2012. Irrigation: Theory and Practice. Vikas Publishing House New Delhi.

Majumdar D. K. 2013. Irrigation Water Management Principles. PHI learning Private Limited New Delhi 2nd Edition.

Allen R. G., L. S. Pereira, D. Raes, M. Smith. 1998. Crop Evapotranspiration – Guidelines for computing crop water requirement.Irrigation and drainage Paper 56, FAO of United Nations, Rome.

Murthy VVN. 2013. Land and Water Management Engineering. Kalyani Publishers, New Delhi.

Israelsen O W. and Hansen V. E and Stringham G. E. 1980. Irrigation Principles and Practice, John Wiley & Sons

### Course No: **AEM404**, Course Title: **Irrigation Engineering Lab**

Class: B.Tech., Status of Course: Major Course, Approved since session:

Total Credits: 1, Periods (55 mts. each)/week: 2(L:0+T:0+P:2+S:0), Min.pds./sem:26

1. Measurement of soil moisture by different soil moisture measuring instruments;
2. measurement of irrigation water;
3. measurement of infiltration characteristics;
4. determination of bulk density, field capacity and wilting point;
5. estimation of evapotranspiration;
6. land grading methods;
7. design of underground pipeline system;

8. estimation of irrigation efficiency;
9. study of advance, recession and computation of infiltration opportunity time;
10. infiltration by inflow-outflow method;
11. evaluation of border irrigation method;
12. evaluation of furrow irrigation method;
13. evaluation of check basin irrigation method.

**Course No: CEM404, Course Title: GEOMATICS I**

Class: B.Tech., Status of Course: Major Course, Approved since session: 2015-16

Total Credits: 3, Periods (55 mts. each)/week: 3(L:3+T:1+P:0+S:0), Min.pds./sem:52

**UNIT 1**

Basic concepts of surveying: Objectives; Basic measurements, control networks, locating topographic details; Units of measurement; Error in measurement and their types, indices of precision, weight, outliers; Error sources, types; accuracy and precision, propagation of variance/covariance. Linear measurements: Taping; Optical distance measurement; Electronic distance measurement, classification and calibration; Errors in distance measurement and precautions. Vertical control: Level surface; Levelling principles, determination of height, leveling instruments; Sources of error and minimization, curvature and refraction effects; closure tolerances; Types of levelling; Characteristics of contours; methods of contouring

**UNIT 2**

Concept of direction, azimuth, meridian; Theodolite, fundamental characteristic of theodolite and adjustment, measuring angles, sources of error Plane Tabling (PT): Accessories in PT, methods of PT, resection methods, preparation of map

**UNIT 3**

Principle and basic system, subtense bar, various types of tachometers, plotting with tachometers Coordinate systems and datum transformation: Important surfaces in geodesy: earth surface, geoids, MSL, reference ellipsoid; Reference systems: 2D and 3D coordinate systems and transformations; map projection, UTM projection

**UNIT 4**

Traversing: balancing of traverse, Triangulation, Trilateration, and Triangulation: Purpose, classification, strength of figure, well-conditioned triangle, triangulation figures, reconnaissance and station selection, inter-visibility of stations, signal and towers, base lining, computation and adjustment in triangulation, satellite station, Adjustments: Adjustment of errors using Least squares: observation equation and condition equation approach (preferably matrix-based solution)

**UNIT 5**

Principles, classification, salient features of total station. GPS survey: Principles, errors, DGPS, DOP, GPS survey Methods and plans Construction surveys: Principle of setting out; Special instruments for setting out: Setting out a building, Setting out a highway curve

**SUGGESTED READINGS:**

1. Arora, K. R., *Surveying*, Standard Book House, Delhi.
2. Anderson, J.M. and Mikhail, E.M., *Surveying theory and practice*, 7<sup>th</sup> ed, McGraw-Hill 1997.
3. Ghilani, C. D. and Wolf, P. R., *Elementary Surveying: An Introduction to Geomatics*, 13 ed, Prentice Hall, 2011.
4. Schofield, W., *Engineering Surveying*, 6<sup>th</sup>ed, Butterworth Heinemann, Oxford.
5. Sickle, J. V., *GPS for Land Surveyors*, 3<sup>rd</sup>ed. CRC Press, 2008.
6. Agor, R. "Surveying", Vol. I & II Khanna Publications, Delhi.
7. Arora, K.R., "Surveying" , Vol. I & II Standard Book House, Delhi,
8. Bannister, A. and Baker, R., "Solving Problems in Surveying", Longman Scientific Technical, U.K., 1994.

**Course No: CEM405, Course Title: GEOMATICS I LAB**

Class: B.Tech., Status of Course: Major Course, Approved since session: 2015-16

Total Credits: 1, Periods (55 mts. each)/week: 2(L:0+T:0+P:2+S:0), Min.pds./sem:26

1. Visit to Lab. for the study of: a. Maps from Survey of India Publication b. Conventional Symbol Charts and Different types of maps.
2. To study instruments used in chain surveying and to measure distance between two points by ranging.
3. To determine the bearing of sides of a given traverse using Prismatic Compass, and plotting of the traverse.
4. To plot details using radiation and intersection methods in plane tabling.
5. To solve two point / three point problem in plane tabling.
6. To find out the reduced levels of given points using level. (Reduction by Height of Collimation method and Rise and Fall Method).
7. To determine and draw the longitudinal and cross-section profiles along a given route.
8. Practice for temporary adjustments of a Vernier Theodolite and taking Horizontal and Vertical angular measurements, by Reiteration method.
9. Measurement of horizontal angles by Repetition method.
10. Determination of the Tacheometric constants of a given theodilite.

**Course Number: MEM404, Course Title: MECHANICS OF MACHINES**

Class: B.Tech., Status of Course: Major Course, Approved since session: 2000-01

Total Credits: 3, Periods (55 mts. each)/week: 3(L:3+T:1+P:0+S:0), Min.pds./sem: 39

**UNIT 1**

Links. Pairs. Chains. Mechanisms. Inversions. Graphical method of analysis for velocity and acceleration including Coriolis component of acceleration. Velocity and acceleration images. Instantaneous centre of velocity. Arnold Kennedy theorem of three centres. Special mechanisms such as straight line mechanisms, pantograph and Hooke's joint.

**UNIT 2**

Number synthesis. Dimensional synthesis. Analytical and Graphical methods of dimensional synthesis.

DYNAMIC ANALYSIS: Reciprocating engine mechanism. Dynamically equivalent link. Its approximation and correction. Crank effort diagrams. Flywheel.

**UNIT 3**

Velocity ratio and power transmitted by flat belt, V belt and rope. Slip. Creep. Centrifugal tension.

Collars and pivots. Friction circle and friction axis. Clutches of different types.

**UNIT 4**

Gravity controlled and spring controlled types. Centrifugal and inertia types. Controlling force. Sensitiveness. Stability. Isochronism. Hunting. Effort and power of a governor.

DYNAMOMETERS: Absorption and transmission types.

**UNIT 5**

Spur gears. Involute and cycloidal teeth. Path and arc of contact. Interference and undercutting in involute teech. Gear trains, compound and epicyclic. Torque in epicyclic gear trains.

**SUGGESTED READING:**

Ashok G Ambekar: MECHANISM AND MACHINE THEORY Ballaney: THEORY OF MACHINES

Erdman & Sandor: MECHANISM DESIGN: ANALYSIS AND SYNTHESIS Thomas Bevan: THEORY OF MACHINES

Shigley: THEORY OF MACHINES AND MECHANISMS Jagdish Lal: THEORY OF MECHANISMS AND MACHINES

Ghosh & Mallik: THEORY OF MECHANISMS AND MACHINES

**Course Number: MEM405, Course Title: MECHANICS OF MACHINES LAB.**

Class: B.Tech., Status of Course: Major Course, Approved since session: 2000-01

Total Credits: 1, Periods (55 mts. each)/week: 2(L:0+T:0+P:1+S:1), Min.pds./sem: 26

**List of Experiments.**

- (1) Smooth inclined plane
- (2) Wheel & Differential axle
- (3) Worm & worm wheel
- (4) Friction in bearings
- (5) Flywheel

(6) Screwjack.

Course Number: **MEM410** Course Title: **Heat and Mass Transfer**

Class: B.Tech., Status of Course: FULL COURSE, Approved since session:

Total Credits: 2, Periods (55 mts. each)/week: 2(L-2+T-1+P/S-0), Min.pds./sem.: 26

Unit1

Concept, modes of heat transfer, thermal conductivity of materials, measurement. General differential equation of conduction. One dimensional steady state conduction through plane and composite walls, tubes and spheres with and without heat generation.

Unit2

Electrical analogy. Insulation materials. Fins, Free and forced convection. Newton's law of cooling, heat transfer coefficient in convection.

Unit3

Dimensional analysis of free and forced convection. Useful non dimensional numbers. Equation of laminar boundary layer on flat plate and in a tube. Laminar forced convection on a flat plate and in a tube. Combined free and forced convection.

Unit4

Introduction. Absorptivity, reflectivity and transmissivity of radiation. Black body and monochromatic radiation, Planck's law, Stefan-Boltzman law, Kirchoff's law, grey bodies and emissive power, solid angle, intensity of radiation. Radiation exchange between black surfaces, geometric configuration factor. Heat transfer analysis involving conduction, convection and radiation by networks.

Unit5

Types of heat exchangers, fouling factor, log mean temperature difference, heat exchanger performance, transfer units. Heat exchanger analysis restricted to parallel and counter flow heat exchangers. Steady state molecular diffusion in fluids at rest and in laminar flow, Fick's law, mass transfer coefficients. Reynold's analogy.

Suggested Readings

Geankoplis C.J. 1978. Transport Processes and Unit Operations. Allyn and Bacon Inc., Newton, Massachusetts.

Holman J P. 1989. Heat Transfer. McGraw Hill Book Co., New Delhi.

Incropera F P and De Witt D P. 1980. Fundamentals of Heat and Mass Transfer. John Wiley and Sons, New York.

Gupta C P and Prakash R. 1994. Engineering Heat Transfer. Nem Chand and Bros., Roorkee.

**Course Number: ENH481, Course Title: ENGLISH IV**

Class: B.Tech., Status of Course: NF Half Course, Approved since session: 2009-10

Total Credits: 3.0, Periods (55 mts. each)/week: 3(L:3+T:0+P:0+S:0), Min.pds./sem: 39

UNIT 1: Writing of Technical Reports and Proposals.

UNIT 2: Notices, Agenda, Minutes, Manuals and Handbooks.

UNIT 3: (a) Research Papers, Articles and Abstracts (b) Review writing.

UNIT 4: Short-Speeches, Debates and Presentation Strategies.

UNIT 5: Oral Presentation- Interviews, Meetings, Seminars, Conferences and Group Discussions

*(Students must be exposed to the Practical aspect of Oral Presentation).*

**Course Number: EGC481, Course Title: INDUSTRIAL VISITS**

Class: B.Tech., Status of Course: Core Course, Approved since session: 2000-01

Total Credits: 1

The students of different classes visits various industries to get an exposure to the various operations processes etc. in different types of industries.

Course No. **GKC431/451/461/481**, Title: **SC.METH. G.K. & CURRENT AFFAIRS IV**

Class: BBM/BSSc/BA/BCom/BSc/B.Tech., Status: Core Course, Approved session: 2004-05

Total Credits: 1, Periods (55 mts. each)/week: 1(L-1+T-O+P/S-O), Min.pds./sem.: 13

## UNIT 1

Well known Books and their authors (Indian and Foreign). Foreign Words and phrases in common use. Nobel Prizes.

## UNIT 2

History and Important Personalities, Academic and other Institutions, Classical Dances of India, Who is Who?

UNIT 3: Abbreviations, Sobriquets, Superlatives

UNIT 4: Olympic Games - History, Games Played.

## UNIT 5

(a) Social Issues and the Environment - From Unsustainable to Sustainable Development, Water Conservation, Rain Water Harvesting, Environmental Ethics, Climate Change, Global Warming (b) Human Population and the Environment - Population Growth, Environment and Human Health, Human Rights, Value Education, HIV/AIDS, Women and Child Welfare, Role of Information Technology in Environment and Human Health.

### SUGGESTED READING:

NCERT: TEXT BOOKS ON HISTORY, GEOGRAPHY, CIVICS

MR Agarwal: GENERAL KNOWLEDGE DIGEST

HINDI & ENGLISH DAILY NEWS PAPERS

COMPETITION MASTER SPORTS STAR COMPETITION SUCCESS REVIEWS

MANORAMA YEAR BOOK

NEWS PAPERS AND MAGAZINES:

INDIA TODAY

YOJNA

### **Course Number: CAC481, Course Title: CO-CURRICULAR ACTIVITIES**

Class: B.Tech., Status of Course: Major Course, Approved since session: 2000-01

Total Credits: 3, Periods (55 mts. each)/week: 3 for 26 weeks, Min.pds./sem: 52

Participation by the students in sports and games, literary, social, cultural and professional activities is compulsory. The proficiency attained in them is evaluated every year and counted in the assessment of the overall performance of the student to encourage a balanced and all-round development of their personality.

### **Course Number: AEW401, Course Title: W.E.-REPAIR OF FARM EQUIPMENT**

Class: B.Tech., Status of Course: Work Exp. Course, Approved since session:

Total Credits:2, Periods(55 mts. each)/week: 4(L:0+T:0+P:4+S:0), Min.pds./sem.:52

Repair and maintenance of agricultural implements, equipment and tractor.

### **Course Number: AEW402, Course Title: W.E.-ENERGY AUDITING FOR POLYHOUSE & FARM STRUCTURES**

Class: B.Tech., Status of Course: Work Exp. Course, Approved since session:

Total Credits:2, Periods(55 mts. each)/week: 4(L:0+T:0+P:4+S:0), Min.pds./sem.:52

1. Heat Load calculation and actual heating load
2. Cooling load Calculation
3. Steam/water vapour requirement of the greenhouse
4. Calculation of thermal efficiency
5. Air requirement of the greenhouse

### **Course Number: DPW401, Course Title: W.E.-COMMERCIAL ART**

Class: B.A., Status of Course: WORK EXPERIENCE, Approved since session: 1999-2000

Total Credits: 2, Periods (55 mts. each)/week: 4(L:0+T:0+P:4+S:0), Min.pds./sem.: 52

1) Work 1 [12 pds]

2) Work 2 [12 pds]

3) Work 3 [15 pds]

4) Work 4 [5 pds]

5) Visualisation Theory [4 pds]

6) Advertising Theory (not for examination) [4 pds]

NOTE: (a) Story Board (b) Symbol for public service (c) Packaging (d) Copy Writing (e) Visualisation Theory (f) Advertising theory.

### **Course Number: EEW402, Course Title: W.E.-REPAIR OF ELECTRICAL EQUIPMENT**

Class: B.Tech., Status of Course: Work Exp. Course, Approved since session: 2000-01

Total Credits: 2, Periods (55 mts. each)/week: 4 (L:0+T:0+P:4+S:0), Min.pds./sem.: 52

1. Importance of electric energy in day to day life. Brief outline of power generation in India. Concept of voltage, current, power, energy. Home wiring-Components used. Simple test instruments. Fuse. Fault finding and repair. Do's and Don'ts with house wiring.

2. Effect of current: Heating, lighting and Electromagnetic Effects. Heating appliances. Principle. Construction of electric home appliances based upon electric heating. Fault finding and repair.

3. Electric lighting: Types of bulbs. Shades. Systems of lighting. Emergency light. Electric motors. Types of motors used in industry. Fault finding and repair. Rewinding motors and transformers.

**Course Number: EEW403, Course Title: W.E.-3D PRINTING TECHNIQUES**

Class: B.Tech., Status of Course: Work Exp. Course, Approved since session: 2000-01

Total Credits: 2, Periods (55 mts. each)/week: 4 (L:0+T:0+P:4+S:0), Min.pds./sem.: 52

1. Screen Printing: Basic Theory. Apparatus. Material. Process. Trouble Shooting.

Preparation of Printing Circuit Boards.

2. Photostat: Basic Theory. Apparatus. Materials. Process. Trouble Shooting. Blue Printing and Ammonia Printing: Theory. Materials. Process and Practice.

**Course Number: EEW404, Course Title: W.E.- MICRO CONTROLLERS & IOT**

Class: B.Tech., Status of Course: Work Exp. Course, Approved since session: 2017-18

Total Credits: 2, Periods (55 mts. each)/week: 4 (L:0+T:0+P:4+S:0), Min.pds./sem.: 52

1. Introduction to Arduino and Shields

2. Introduction to ESP8266 and allied boards

3. Discuss about battery solution, battery life estimation

4. Component selection, Board design, BOM, ordering

5. Assemble & Testing

6. Connection to IOT data logging services

**Course Number: MEW402, Course Title: W.E.-PHOTOGRAPHY**

Class: B.Tech., Status of Course: Work Exp. Course, Approved since session: 2000-01

Total Credits: 2, Periods (55 mts. each)/week: 4 (L:0+T:0+P:4+S:0), Min.pds./sem.: 26

Types of photographic cameras. Principal parts and their functions. Types of shutters and their speeds. Diaphragms. Variation of aperture Photographic film, its emulsion and speed. Exposure and its determination. Various types of developers. Techniques of developing and fixing the negatives. Preparing positives by contact printing and making enlargements of different grades of photographic papers. Various methods of retouching and finishing the negative and positive. Introduction to Colour Photography: Making colour enlargements from colour negatives. Special Processes: Micro-photography and photomicrography. Preparing slides by different methods.

**Course Number: MEW403, Course Title: W.E.-REFRIGERATION & AIRCONDITIONING**

Class: B.Tech., Status of Course: Work Exp. Course, Approved since session: 2000-01

Total Credits: 2, Periods (55 mts. each)/week: 4 (L:0+T:0+P:4+S:0), Min.pds./sem.: 26

List of Experiments

1. Study of Refrigerator and Air-Conditioners.

3. Gas Welding & Soldering.

5. Pipe Techniques

7. Leak testing

9. Study of Electrical Circuit.

2. Study of Tools.

4. Detailed study of Compressor.

6. Study of Condensers & Cooling coils.

8. Gas charging.