## TEACHING COURSES OFFERED BY CIVIL ENGG SECTION
### IN COURSES OF OTHER SECTIONS

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course No</th>
<th>Course Title</th>
<th>Class</th>
<th>Branch</th>
<th>Teaching load</th>
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<tbody>
<tr>
<td>I</td>
<td>BCE-102</td>
<td>Surveying</td>
<td>B1A / B1ID</td>
<td>Arch / * Interior</td>
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<tr>
<td></td>
<td>BCE-191</td>
<td>Survey Lab</td>
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<td>Arch / * Interior</td>
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<td>II</td>
<td>BCE-204</td>
<td>Technical Drawing #</td>
<td>B1LT</td>
<td>Leather &amp; Footwear Technology</td>
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<tr>
<td>III</td>
<td>BCE-305</td>
<td>Strength of Materials</td>
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<tr>
<td></td>
<td>BCE-306</td>
<td>Environmental Studies</td>
<td>B2 M1</td>
<td>Mechanical</td>
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<td>Prod/RAC/Plastic</td>
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<td>Construction Techniques Lab</td>
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<td>Electronics</td>
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<td>V</td>
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<td>Structure Design</td>
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<td></td>
<td>BCE-507</td>
<td>Environmental Studies &amp; Pollution Control in Power Plant</td>
<td>B3E / B3EI</td>
<td>Elect / Instrm</td>
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<td>BKE-501</td>
<td>Basic Chemical Engg. $</td>
<td>B3PT</td>
<td>Plastic Tech.</td>
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<td>Basic Chemical Engg. Lab $</td>
<td>B3PT</td>
<td>Plastic Tech.</td>
<td>3+0</td>
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<td>VI</td>
<td>BCE-605 (B)</td>
<td>Industrial Pollution &amp; Control</td>
<td>B3M / B3PE / B3RA / B3PT</td>
<td>Mech/ Prod/ RAC/Plastic</td>
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<td>BCE-606</td>
<td>Environmental Studies &amp; Pollution Control in Tanning Industry</td>
<td>B1LT</td>
<td>Leather &amp; Footwear Technology</td>
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<td>BCE-607</td>
<td>Environmental Studies &amp; Pollution Control in Power Plant</td>
<td>B2EE/CE</td>
<td>Electronics / Computer</td>
<td>4+0</td>
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</table>

* Architecture Assistantship / Interior Design.
** Architecture Assistantship

# These courses shall be subject to capacity of accommodation in the teaching load of the section otherwise it will be handled by section concerned.

$ Only one teacher will be provided by the C.E.S. not of the laboratory staff and other teachers shall be provided by M.E.S.
OTHER COURSES (SEM – I)
DIPLOMA IN ARCH. / INTERIOR
SURVEYING
(BCE-102)

Annexure: I
BOS : 12.02.2013

<table>
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<th>Pds./Week</th>
<th>Duration of Exam.</th>
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<tr>
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<td>3</td>
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</table>

CONTENTS

Unit-I
CHAIN SURVEYING:

Unit-II
COMPASS SURVEYING:

Unit-III
PLANE TABLE SURVEYING:

Unit-IV
LEVELLING:
Definition of terms related to levelling. Brief description of dumpy, tilting and IOP levels. Temporary and permanent adjustment of dumpy level. Methods of calculation of reduce levels. Profile levelling, L-section, cross-section and formation lines. Precautions and errors in levelling, balancing back sight and fore sight distances. Levelling difficulties.

Unit-V
THEODOLITE:
CONTENTS

CHAIN SURVEY:

- Folding & unfolding of chains, Ranging Of Lines, Offsetting, Offsetting with 90 turn, Offsetting with tie line turn, Traversing with Chain

PLAIN TABLE SURVEY:

- Radiation Method
- Intersection Method
- Traversing
- Two - Point problems
- Three – Point problem

LEVELING:

- Rise & Fall method
- Height of Instrument method
- Profile Leveling
- Cross Sectioning

THEODOLITE SURVEY:

- Measurements of horizontal angles
- Measurements of vertical angles
OTHER COURSES (SEM – II)
DIPLOMA IN LEATHER & FOOTWEAR TECHNOLOGY
TECHNICAL DRAWING
(BCE- 204)

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**CONTENTS**

Unit-I  
**PRINTING:**

Introduction: Need and importance of Drawing as the language of Engineers, Selection and handling of the Drawing Instruments and Equipments. Single stroke printing - capital’s Sub-Capitals, small, vertical and italics, with and without serif. Block printing (5:7 type)

Unit-II  
**SCALES:**

Need of a scale, Representative fraction (R.F.) and types of Scales according to the R.F. construction of plain and Diagonal.

Unit-III  
**ORTHOGRAPHIC PROJECTIONS:**


Unit-IV  
Isometric Projection: Simple right Solids,

**RECOMMENDED BOOKS:**

1. VENUGOPAL, K; New Age International (P) Limited, Publishers.
3. Engineering Drawing; Dhawan R.K; S. Chand & Company Ltd.
4. Engineering Drawing; Gupta R.B.; Satya Prakashan

**Note:** Number of sheets in each unit will depend upon the availabilities of time.
CONTENTS

Unit-I  SIMPLE STRESSES AND STRAIN:

Unit-II  SHEAR FORCE AND BENDING MOMENT:
Type of Support, Type of beams, Type of Load. Shear Force and Bending Moment. SFD and BMD for Cantilevers, Simply Supported and Overhanging beam for Concentrated and Uniformly distributed load. Relationship between S.F and B.M

Unit-III GEOMETRICAL PROPERTIES OF AREA:
Centre of area or Centroids. Moment of Inertia and second moment of area. Theorem of Parallel and Perpendicular axes. Second moment of area of rectangular, Circular, T, I, L and Built up Section.

Unit-IV  STRUCTURAL STEEL CONNECTION:
Description of riveted and welded joints. Design of riveted and welded joints

FRAMES:

Reference Books:-
1. Strength of Material  S. Ramamuthan
4. Strength of Material  Rajput
OTHER COURSES (SEM – III)
DIPLOMA IN MECH / PROD / RAC / PLASTIC
ENVIRONMENTAL STUDIES
(BCE- 306)

Annexure: I
BOS : 12.02.2013

<table>
<thead>
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<th>Pds./Week</th>
<th>Duration of Exam.</th>
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## CONTENTS

<table>
<thead>
<tr>
<th>Unit-I</th>
<th>Definitions of Environmental Science, Environmental Engineering and Environmental Management, Concepts of Ecology, Food chain, Food Web.</th>
<th>20%</th>
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<tbody>
<tr>
<td>Unit-II</td>
<td>Types of Pollutants, Air Pollution, Water Pollution, Land Pollution: Classification, sources, effects and control measures, Noise Pollution, Odour Pollution. Water conservation and reuse.</td>
<td>20%</td>
</tr>
<tr>
<td>Unit-III</td>
<td>Composition of atmosphere, Hydrological cycle, Green House Effect, Global Warming, Acid Rain, Ozone depletion, deforestation and desertification.</td>
<td>20%</td>
</tr>
<tr>
<td>Unit-IV</td>
<td>Role of Non-Conventional sources of energy for environmental pollution control. Concept of waste reduction, recycling and reuse.</td>
<td>20%</td>
</tr>
<tr>
<td>Unit-V</td>
<td>Basic concepts of Environmental Impact Assessment (EIA), EIA Objectives. Environmental awareness, public participation, Environmental case studies. Environmental Audit, Concept of sustainable development.</td>
<td>20%</td>
</tr>
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</table>

Reference Books:-

### CONTENTS

<table>
<thead>
<tr>
<th>Unit</th>
<th>Topics</th>
<th>Marks</th>
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</table>

**Reference Books:-**

CONTENTS

1. Identification & Demonstration of building materials and tools used in the construction work.

2. Construction of L-Junction with stretcher and header bonds.

3. Construction of L-Junction with one brick thick wall in English and Flemish bonds.

4. Construction of L-Junction with ½ brick thick wall in English and Flemish bonds.

5. Construction of L-Junction with 2 bricks thick wall in English and Flemish bonds.


7. Demonstration of various mortars and cement concrete mixes, mixing, transportation, placement, compaction and curing and their methods.

8. Form work, centering & shuttering and their removal.

9. Demonstration of water supply fixtures and sanitary fittings.

10. Site Visits.
OTHER COURSES (SEM – IV)
DIPLOMA IN ELECTRONICS ENGG
ENGINEERING DRAWING
(BCE- 407)

Annexure: I
BOS : 12.02.2013

<table>
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<tr>
<th>Pds./Week</th>
<th>Duration of Exam.</th>
<th>Max. Marks</th>
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<td>P</td>
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Unit-III  ORTHOGRAPHIC PROJECTIONS:

Unit-IV  Isometric Projection: Simple right Solids,

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3. Engineering Drawing; Dhawan R.K; S. Chand & Company Ltd.
4. Engineering Drawing; Gupta R.B.; Satya Prakashan

Note: Number of sheets in each unit will depend upon the availabilities of time.
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Unit-I
DESIGN OF BEAMS FOR FLEXURE:
- Limit State Analysis and Design of beams (Rectangular and T-beams).

Unit-II
DESIGN OF BEAMS FOR SHEAR AND BOND:
- Behavior of Reinforced Concrete beam under Shear. Critical sections for shear design. Types of shear reinforcement. Design of shear reinforcement with vertical stirrups and bent-up bars with vertical stirrups.
- Introduction to Bond stress, flexural bond, anchorage (or development) bond, development length in compression and tension, bends and hooks, splicing reinforcement. Design examples..

Unit-III
SLABS:
One-way and two way slab. Design of rectangular, square and circular slabs with corners free and held down. Provision of reinforcement in slabs.

Unit-IV
COLUMNS:
Column and its types. Design of axially loaded column with lateral ties and helical reinforcements.
FOOTINGS:
- Footing and its types. Footings used for residential buildings. Design of isolated column footings for square, rectangular and circular column footings

Unit-V
STAIRCASE:
Types of staircase. Design of stairs spanning horizontally and doglegged stairs. Reinforcement sketches.

Reference Books:-
1. Reinforced Concrete - Limit State Design by A. K. Jain
2. Reinforced Concrete Design by S. U. Pillai and D. Menon
3. Reinforced Concrete Design by S. N. Sinha
4. IS: 456-2000, Plain and Reinforced Concrete - Code of Practice
5. Civil Engineering Material and Their Testing by S. D. Hasan
6. Concrete Technology by M. L. Gambhir
7. Concrete Technology by A. M. Neville
OTHER COURSES (SEM – V)
DIPLOMA IN ELECTRICAL / INSTM ENGG.
ENVIRONMENTAL STUDIES AND POLLUTION
CONTROL IN POWER PLANT
(BCE- 507)

Pds./Week  | Duration of Exam. | Max. Marks
---|---|---
L | P Hours | Course Work | Mid-Sem. Exam | End-Sem. Exam | Total
4 | - | 3 | 10 | 15 | 75 | 100

CONTENTS

Unit-I
Types of Pollutants, Air Pollution, Water Pollution, Land Pollution: Classification, sources, effects and control measures, Noise Pollution, Odour Pollution. Water conservation and reuse.

Unit-II
Composition of atmosphere, Hydrological cycle, Green House Effect, Global Warming, Acid Rain, Ozone depletion, deforestation and desertification.

Unit-III
Role of Non-Conventional sources of energy for environmental pollution control. Concept of waste reduction, recycling and reuse.

Unit-IV
Basic concepts of Environmental Impact Assessment (EIA), EIA Objectives.
Environmental awareness, public participation, Environmental case studies. Environmental Audit, Concept of sustainable development.

Unit-V
Environmental Control in Thermal power plants.
Environmental Control in Nuclear power plants.

Reference Books:-
CONTENTS

<table>
<thead>
<tr>
<th>Unit</th>
<th>Description</th>
<th>Max. Marks</th>
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<tbody>
<tr>
<td>Unit-I</td>
<td>Introduction – Classification of Unit Operations, Examples and applications of key unit operations in the plastic industry.</td>
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<tr>
<td>Unit-II</td>
<td>Mechanical size reduction - Description of equipments for size reduction such as Jaw crusher, gyratory crusher, roller crusher and hammer mill.</td>
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<tr>
<td>Unit-III</td>
<td>Law of Conservation of Mass - fundamentals of material balance, material balance in batch and continuous process without chemical reactions.</td>
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<tr>
<td>Unit-IV</td>
<td>Heat Exchangers - Concept of heat exchanger, types of heat exchanger by flow design: counter flow and parallel flow and their graphical representations.</td>
<td>20%</td>
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<tr>
<td>Unit-V</td>
<td>Screening and standard screen series. Drying - Description of natural draft tray dryer, forced draft tray dryer, fluidized bed and rotary dryer.</td>
<td>20%</td>
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REFERENCE BOOK

DIPLOMA IN PLASTIC TECHNOLOGY
BASIC CHEMICAL ENGINEERING LAB
(BKE-591)

<table>
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<th>Pds./Week</th>
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<tbody>
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<td>Hours</td>
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CONTENTS

LIST OF EXPERIMENTS

1. Analysis of various sizes of given material by sieve analysis
2. Drying of solids in a tray dryer under natural draft conditions
3. Drying of solids in a tray dryer under forced draft conditions
4. Study of fluidized bed dryer
5. Study of continuous flow rotary dryer
6. Determination of overall heat transfer co-efficient in double pipe heat exchanger-parallel flow
7. Determination of overall heat transfer co-efficient in double pipe heat exchanger-counter flow

*Note: No of experiments depend upon availability of equipment in the Lab.*
OTHER COURSES (SEM – VI)
DIPLOMA IN MECH / PROD / RAC / PLACTIC
INDUSTRIAL POLLUTION & CONTROL
BCE-605 (B)

<table>
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<table>
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<tr>
<td><strong>Unit-1</strong></td>
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<td><strong>Unit-2</strong></td>
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<td><strong>Unit-4</strong></td>
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<td><strong>Unit-5</strong></td>
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Reference Books:-

OTHER COURSES (SEM – VI)
DIPLOMA IN ENGG. LEATHER & FOOTWEAR TECH.
ENVIRONMENTAL STUDIES AND POLLUTION CONTROL IN TANNING INDUSTRY
(BCE-606)

<table>
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Types of Pollutants, Air Pollution, Water Pollution, Land Pollution: Classification, sources, effects and control measures, Noise Pollution, Odor Pollution.

Unit-II
Role of Non-Conventional sources of energy for environmental pollution control.
Composition of atmosphere, Hydrological cycle, Global Warming, Acid Rain, Ozone depletion, deforestation and desertification.
Basic concepts of Environmental Impact Assessment (EIA), EIA Objectives.
Environmental awareness, public participation, Environmental case studies.

Unit-III
Sources of generation of waste streams in tanneries. Characterization of liquid waste, sampling and material balance, segregation and equalization; Disposal of waste in environment, effects on land and receiving waters, disposal standards.
Wastewater treatment, physical, chemical, and biological processes, reclamation, and reuse in processes.

Unit-IV
In-plant management for reduction of pollution: House-keeping, segregation of waste streams, Recovery and reuse of valuable waste materials found in liquid effluents including chromium, sulphides etc.

Unit-V
Solid waste: Sources, Classification and Characteristics, and Disposal in Tanneries and Footwear Industry.

Reference Books:-
4. Thomas, C.Thortensen, “Fundamentals of Pollution Control for the leather Industry”. 
OTHER COURSES (SEM – VI)
DIPLOMA IN ELECTRONICS / COMPUTER ENGG.
ENVIRONMENTAL STUDIES AND POLLUTION CONTROL IN POWER PLANT
(BCE- 607)

<table>
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BOS : 12.02.2013