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<th>S. No.</th>
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<th>Course Code</th>
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<th>Scheme of Examination</th>
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PPA : Proficiency in Professional Activities; L : Lecture hours; T : Tutorial hours, P : Practical hours; ESE – End of Semester Exam.; CT – Class Test; TA- Teacher’s Assessment
CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

A) SEMESTER : VI
B) COURSE TITLE : QUANTITY SURVEYING & COSTING - I I
C) CODE : 220611 (20)
D) BRANCH/DISCIPLINE : CIVIL ENGINEERING
E) RATIONALE :

One of the job specifications of a diploma holder is to prepare estimate of civil engineering structures as for cost and quantity of various construction materials required. This is an essential and basic requirement for all projects.
This is the first step towards efficient management of the project including proper estimation and utilization of human resources required for the project.
This subject is in continuation of quantity surveying and costing-I.
In this chapter, the timber structure, R.C.C. structures and steel structures bridge and culverts, water supply and sanitary engineering are included. The students will be able to calculate the quantity of works of the structure of the above mentioned chapters.
A chapter on valuation and rent fixation is also included so that the students will be familiar with the method for valuation work and fixing rent

F) TEACHING AND EXMINATION SCHEME:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Periods/Week (In Hours)</th>
<th>Scheme of Examination</th>
<th>Credit</th>
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<tr>
<td>220621 (20)</td>
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</table>

L : Lecture hours : T : Tutorial hours, P : Practical hours
ESE – End of Semester Exam.; CT – Class Test; TA- Teacher’s Assessment.

Note: the above scheme includes credits and marks for practical also.
G) DISTRIBUTION OF MARKS AND HOURS:

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Chapter No.</th>
<th>Chapter Name</th>
<th>Theory</th>
<th>Marks</th>
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<tbody>
<tr>
<td>1</td>
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<td>ESTIMATE OF TIMBER STRUCTURE</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>ESTIMATE OF R.C.C. STRUCTURE</td>
<td>15</td>
<td>20</td>
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<tr>
<td>3</td>
<td>3</td>
<td>ESTIMATE OF STEEL STRUCTURE</td>
<td>10</td>
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<tr>
<td>4</td>
<td>4</td>
<td>ESTIMATE OF CULVERTS &amp; BRIDGES</td>
<td>15</td>
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<td>5</td>
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<td>ESTIMATE OF WATER SUPPLY AND SANITARY FITTINGS</td>
<td>15</td>
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<td><strong>Total</strong></td>
<td><strong>80</strong></td>
<td><strong>100</strong></td>
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</table>

H) DETAILED COURSE CONTENTS:

Chapter – 1 : ESTIMATE OF TIMBER STRUCTURE
- Estimate of doors and windows
- Estimate of king post Roof Truss
- Estimate of Roof covering material (Tiles)

Chapter – 2 : ESTIMATE OF R.C.C. STRUCTURE
- Estimate of slab
- Estimate of beam
- Estimate of T-beam
- Estimate of staircase from and with actual working drawing
- Estimate of R.C.C. column with its footing
- Preparation of abstract of above items
- Preparation of bar bending schedule, and to calculate amount of steel

Chapter – 3 : ESSTIMATE OF STEEL STRUCTURE
• Estimate of steel column (Stanchion)
• Estimate of steel Truss and Gusset Plate
• Estimate of Roof covering materials
• Estimate of GI C Roof, A.C. Roof
• Estimate of steel frames for doors and windows

Chapter – 4 : ESTIMATE OF CULVERTS & BRIDGES
  ▪ Estimate of hume pipe culvert with splayed type of wing wall, turn wall, face wall
  ▪ Estimate of R.C.C. slab bridge, straight type wing walls

Chapter – 5 : ESTIMATE OF WATER SUPPLY AND SANITARY FITTINGS
  ▪ Detailed estimate of water supply for building work
  ▪ Detailed estimate of sanitary works for building work
  ▪ Estimate of S.W. pipe line
  ▪ Estimate of septic tank
  ▪ Estimate of manhole.

Chapter – 6 : VALUATION
  ▪ Definition, purpose of valuation
  ▪ Gross income/Net income
  ▪ Cut goings
  ▪ Sinking fund
  ▪ Obsolescence and depreciation
  ▪ Capitalized value and year purchase
  ▪ Methods of depreciation, methods of valuation
  ▪ Free hold property, rent fixation of building.

I) SUGGESTED INSTRUCTIONAL STRATEGIES:
  ▪ Lecture Method.
  ▪ Industrial visits.
  ▪ Expert Lecture.
  ▪ Demonstration.

J) SUGGESTED LEARNING RESOURCES:
Subject title: Quantity Surveying & Costing-II Lab

PRACTICAL CODE : 220621 (20)

HOURS: 32

LIST OF PRACTICALS / TUTORIALS:

I Work out the quantities of all items for Timber structure.
   A) Beam
   B) Column
   C) Roof slab

II Work out the quantities of all items for R.C.C. structure.
   A) Beam
   B) Column
   C) Roof slab

III Work out the quantities of all items for Steel structure.
   A) Steel Column (Stanchion)
   B) Steel Truss and Gusset plate.
   C) G.I.C. Roof and A.C. Roof.

IV Work out the quantities of all items for box culvert or hume pipe culvert.

V Valuation and rent fixation of any Existing building.

*****

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Title</th>
<th>Author and Publisher</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Estimating and Costing</td>
<td>B.N. Dutta, S.D. Dutta &amp; Co., Tagore Path, Motilal Bose Road, Lucknow</td>
</tr>
<tr>
<td>2</td>
<td>Estimating, Costing &amp; Valuation</td>
<td>Rangwala., Chander Publications, Station Road, Anand</td>
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<td>3</td>
<td>Estimating &amp; Costing</td>
<td>Birdle, J.C. Kapoor for Dhanpet &amp; Sons, Delhi</td>
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<td>5</td>
<td>Current Schedule of rates from PWD/PHE/Irrigation</td>
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CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

A) SEMESTER : VI
B) COURSE TITLE : STRUCTURAL DESIGN & DRAFTING - II
C) CODE : 220612 (20)
D) BRANCH/DISCIPLINE : CIVIL ENGINEERING
E) RATIONALE :

The technician must have the concept of steel structure and should be able to design simple steel structures. The course has been designated for this objective and it also includes the fabrication of steel structures.

F) TEACHING AND EXMINATION SCHEME:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Periods/Week (In Hours)</th>
<th>Scheme of Examination</th>
<th>Credit</th>
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</table>

L: Lecture hours; T: Tutorial hours, P: Practical hours
ESE – End of Semester Exam.; CT – Class Test; TA- Teacher’s Assessment
Note: the above scheme includes credits and marks for practical also.

G) DISTRIBUTION OF MARKS AND HOURS:

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<th>Chapter Name</th>
<th>Hours</th>
<th>Marks</th>
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<td>INTRODUCTION</td>
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<td>RIVETED &amp; WELDED JOINT</td>
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<td>3</td>
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<td>BEAMS</td>
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<td>TENSION MEMBER</td>
<td>7</td>
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<td>6</td>
<td>COLUMN BASES AND COLUMN FOOTING</td>
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<td>10</td>
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<tr>
<td>7</td>
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<td>ROOF TRUSS</td>
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<td>8</td>
<td>ANALYSIS OF CONTINUOUS BEAMS</td>
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<td><strong>90 + 10 for drafting</strong></td>
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H) DETAILED COURSE CONTENTS:

Chapter – 1 : INTRODUCTION
- Examples of steel structure
- I.S. code 800-1984
- Structural Steel Section
- Loads, D.L., L.L., W.L.
- Allowable stresses.

Chapter – 2 : RIVETED & WELDED JOINTS
- Definition of terms related to riveted joints
- Permissible stress in rivet
- Types of Riveting - power driven, field driven, Power driven shop riveting
- Definition of terms related to welded joints
- Types of welded joint
- Strength of welded joint
- Design of welded joint

Chapter – 3 : BEAMS
- Permissible stress in beams
- Deflection
- Buckling of compression flange
- Design of laterally restrained beams of single rounded steel section
- Built up section
- I section with plates

Chapter – 4 : TENSION MEMBER
- Use of Sections as tension member
- Net sectional area, effective sectional area of single and double angles
- Design of a tension member

Chapter – 5 : COMPRESSION MEMBER
- Criteria of failure of short column and long column
- End conditions
- Effective length of a column
- Slenderness ratio and corresponding compressive stress
- Design of column and compound column consisting of two channels
- Design of lacing s and Battening

Chapter – 6 : COLUMN BASES & COLUMN FOOTING
- Types of column base - Slab base and gusseted base
- Design of M.S. Slab and gusseted base with concrete pedestal
- Cleat angles, their use only

Chapter – 7 : ROOF TRUSS
- Types of Trusses
- Definitions of terms related to truss
- Combination of loads for design of truss
- Selection of truss
- Forces in the member
- Design of members of truss
- Design of purlin
- Detailing of different roof joints and purlin connection.

Chapter – 8 : ANALYSIS OF CONTINUOUS BEAMS
- Analysis of continuous beam by Clayperion’s theorem for three moments
- Moment distribution method limited to three spans with different end conditions

I) SUGGESTED INSTRUCTIONAL STRATEGIES:
- Lecture Method.
- Industrial visits.
- Expert Lecture.
- Demonstration.

J) SUGGESTED LEARNING RESOURCES:

(a) Reference Books:

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Title</th>
<th>Author, Publisher, Edition &amp; Year</th>
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<td>S. Ramamutham</td>
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<td>Arya Ajmani</td>
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<tr>
<td>7</td>
<td>Steel Structure</td>
<td>Negi</td>
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</table>
K. LIST OF PRACTICALS/TUTORIALS:

- Analysis of roof truss by graphical method for D.L., L.L., and W.L.
- Sketching of different types of rivets and steel section
- Sketching of different types of riveted joint
- Sketching of different types of welded joint
- Sketching of lacing and battening system used to connect compound column
- Detail drawing of column with slab base foundation
- Detail drawing of column with gusseted base foundation
- Working drawing of steel roof truss with details of joint.
CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

A) SEMESTER : VI
B) COURSE TITLE : COMPUTER AIDED DRAFTING & PROGRAMMING
C) CODE : 220613 (20)
D) BRANCH/DISCIPLINE : CIVIL ENGINEERING
E) RATIONALE:

The course will enable the students to simulate the speed of knowledge of analysis and decision of structures with computerization of the course. It is essential for the students to construct a bridge between the theoretical knowledge and its computer applications.

This course emphasizes on the computer application of drafting and develops the confidence and competencies in use of CAD software. This course will also fulfills the needs of those industries, which are using the latest technologies in the field of civil engineering.

F) TEACHING AND EXMINATION SCHEME:

<table>
<thead>
<tr>
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G) DISTRIBUTION OF MARKS AND HOURS:

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<td>INTRODUCTION</td>
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<td>05</td>
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<td>AUTOCAD FEATURES</td>
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<td>10</td>
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<tr>
<td>3</td>
<td>APPLICATION OF AUTOCAD</td>
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<td>15</td>
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<td>4</td>
<td>ADVANCE 3D DRAFTING</td>
<td>08</td>
<td>15</td>
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<td>5</td>
<td>IDEA OF WALK THROUGH</td>
<td>04</td>
<td>05</td>
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<td>6</td>
<td>INTRODUCTION TO AUTO LISP</td>
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<td>S. No.</td>
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<td>7</td>
<td>INTERACTION WITH DRAWING EDITOR AND DECISION MAKING</td>
<td>05</td>
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<td>8</td>
<td>WORKING WITH GEOMETRY AND TEXT</td>
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<td>10</td>
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<td>9</td>
<td>EDITING AND CHANGING PROPERTIES OF OBJECTS</td>
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<td>10</td>
<td>DEBUGGING PROGRAMMES</td>
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**H) DETAILED COURSE CONTENTS:**

**Chapter – 1  INTRODUCTION**

- Concept of computer aided drafting
- Preliminary of CAD
- Terminology
- Advantages and disadvantages of CAD
- Hardware and software of CAD
- Graphical input devices
- Menus
- Input techniques
- Output devices
- Software
- Shape and size description
- Drawing primitives
- Dimension
- Delete and redraw
- Window (Zoom)
- Text and editing (move, copy rotate, mirror)
- Scale, filters and round.
- Grouping of entities
- Layers

**Chapter – 2  AUTO CAD FEATURES**

- Drawing primitives
- Invoking and quitting AutoCAD
- Grid, Snap Ortho
- Arc, Circle, Poly line, polygon, Ellipse
- Text
- Edit (erase, copy move, rotate, arrays, mirrors, break, trims, change, fillet and chamfer)
- PEDIT
- Scale, display and zoom, pan, fill redraw, region
- Q Text
- Dimensioning
- Sectioning, hatching styles
- Layer
- Block and its creation

Chapter 3  APPLICATION OF AUTOCAD
- Introduction, objection, Drawing, aids
- Enquiry commands
- Plotting of drawing
- Uses of plotters, changing plot specification
- Application of civil engineering

Chapter 4  ADVANCE 3D DRAFTING
- Extude, Subtract and union
- 3D views
- Shading
- Rendering

Chapter 5  IDEA OF WALK THROUGH
- Introduction to walk through
- List of available software’s and their application

Chapter 6  INTRODUCTION TO AUTO LISP
- Introduction to Auto lisp
- Expressions and arguments
- Variables and data types
- Manipulating list function
- Get function
- Creating and organizing lisp programme

Chapter 7  INTERACTION WITH DRAWING EDITOR AND DECISION MAKING
- Get list, get angle, get orient, get string
- Get real
- SS Get
- Tests for condition

Chapter 8  WORKING WITH GEOMETRY AND TEXT
- Find angles and distances
- Angle, distance and polar function
- String data type
- Search for string
- Conversion

Chapter 9  EDITING AND CHANGING PROPERTIES OF OBJECTS

- Filtering
- Selecting
- Accessing
- Improving speed
- Understand the property list
- Changing property list
- Getting objects name and coordinate together

Chapter 10  DEBUGGING PROGRAMMES

- Debugging programmes

I)  SUGGESTED INSTRUCTIONAL STRATEGIES:
- Lecture Method
- Hands on practice
- Expert Lecture.
- Demonstration

J)  SUGGESTED LEARNING RESOURCES:

(a)  Reference Books :

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Title</th>
<th>Author, Publisher, Edition &amp; Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Reference manual of AutoCAD</td>
<td>Autodesk Inc.</td>
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<tr>
<td>2</td>
<td>The ABC’s Autolisp</td>
<td>George Ommura BPB</td>
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<td>3</td>
<td>Mastering In AutoCAD</td>
<td>George Ommuran BPB</td>
</tr>
<tr>
<td>4</td>
<td>Thinking in Auto CAD</td>
<td>Sachin Raje</td>
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Subject: Computer Aided Drafting and Programming Lab

PRACTICAL CODE : 220623 (20)

HOURS: 64

LIST OF PRACTICALS / TUTORIALS:

DEMONSTRATIONS

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<tbody>
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<td>1</td>
<td>Recall 2D editing</td>
</tr>
<tr>
<td></td>
<td>Prepare plan, elevation and sectional view (including hatching) of any one of the following using AutoCAD</td>
</tr>
<tr>
<td></td>
<td>- Small residential building</td>
</tr>
<tr>
<td></td>
<td>- Simple irrigation structures like canal fall</td>
</tr>
<tr>
<td></td>
<td>- Septic tank, manhole, drop manhole</td>
</tr>
<tr>
<td></td>
<td>- Section of a road pavement</td>
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<tr>
<td>2</td>
<td>3D Drafting</td>
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<td></td>
<td>- 3D View of steps</td>
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<td></td>
<td>- 3D View of small residential building</td>
</tr>
<tr>
<td></td>
<td>- Any irrigation structure</td>
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<tr>
<td>3</td>
<td>Introduction to auto lisp ( demo only)</td>
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<tr>
<td>4</td>
<td>Creating an object using Auto lisp</td>
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<tr>
<td>5</td>
<td>Changing properties of objects</td>
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<td>6</td>
<td>Condition loop and recursion</td>
</tr>
<tr>
<td>7</td>
<td>Geometry and leat in lisp</td>
</tr>
<tr>
<td>8</td>
<td>Plotting/printing of structure related to civil engineering</td>
</tr>
</tbody>
</table>
A) SEMESTER : VI
B) COURSE TITLE : CONSTRUCTION MANAGEMENT
C) CODE : 220614 (20)
D) BRANCH/DISCIPLINE : CIVIL ENGINEERING
E) RATIONALE
A civil engineering technician is required to execute civil works in various departments. The subject on Construction Management develops abilities related to solving day to day problems arising during constructions maintenance work such as handling live problems in the department, issuing of tender documents, preparing T.A. Bill, handling of cash book, muster role, settlement of imprest account, time scheduling with the help of CPM and PERT, understanding labour laws and successfully dealing with labour and subordinates staff. In brief the subject has been introduced to develop managerial skills in the students, so that he can successfully handle live situations at work.

F) TEACHING AND EXMINATION SCHEME

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L: Lecture hours; T: Tutorial hours, P: Practical hours
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G) DISTRIBUTION OF MARKS AND HOURS

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<tr>
<th>S. No.</th>
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<th>Chapter Name</th>
<th>Hours</th>
<th>Marks</th>
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<td>INTRODUCTION</td>
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<td>WORK BY CONTRACT AGENCY</td>
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<td>3</td>
<td>WORK BY DEPARTMENT A-GENERAL</td>
<td>12</td>
<td>20</td>
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<tr>
<td>4</td>
<td>4</td>
<td>WORK BY DEPARTMENT B - MEASUREMENT &amp; PAYMENT</td>
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<td>5</td>
<td>5</td>
<td>CASH BILL, AUCTION &amp; T.A. RULE</td>
<td>10</td>
<td>20</td>
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<td>S. No.</td>
<td>Chapter No.</td>
<td>Chapter Name</td>
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<tr>
<td>6</td>
<td>6</td>
<td>LABOUR WELFARE AND LAWS</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td>TIME SCHEDULE FOR WORKS</td>
<td>13</td>
<td>20</td>
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<td>8</td>
<td>8</td>
<td>CONSTRUCTION MANAGEMENT &amp; EQUIPMENTS</td>
<td>15</td>
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<td><strong>TOTAL</strong></td>
<td>80</td>
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</tr>
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</table>

H) DETAILED COURSE CONTENTS

Chapter - 1 INTRODUCTION
- Organization-Major departments executing civil works.
- Structure of departments
- Staff pattern in division and sub-division
- Accounting system
- Types of work done by department, etc.

Chapter - 2 WORK BY CONTRACT AGENCY
- Different methods for executing works in PWD
- Preparation of tender invitation of a tender
- Contract agreements and its different parts
- Conditions of contract
- Responsibilities of sub-engineer
- Site order book
- Procedure for issuing material
- Procedure for bills

Chapter - 3 WORK BY DEPARTMENT (A) GENERAL
- Land acquisition
- Procedure for material procurement
- Use of a quarry chart
- Different types of accounting papers
- Procedure for operation of labour rolls
- Stores procedure and records indent form
- Accounts of T & P
- Articles
- Survey report
- Road metal return
- Road metal rate book and its use

Chapter - 4 WORK BY DEPARTMENT (B) MEASUREMENT & PAYMENT
- Use of measurement book
 Entries in measurement books
 Standard measurement book and its use

Chapter - 5 CASH, BILL, AUCTION & T.A. RULES

 Procedure to settle account of money received
 Modes of payment
 Permanent and temporary advance
 Comparison between permanent and temporary advance,
 Checking of bills and vouchures
 Auction procedure
 T.A. rules etc.

Chapter 6: LABOUR WELFARE & LAWS

 Measures to improve the efficiency of labour
 Causes of accident
 Trade unions
 Aims of labour legislation
 Labor courts
 Attitudes of sectional officers towards labour

Chapter - 7 TIME SCHEDULE FOR WORKS

 Importance of management of works
 Gantt bar chart
 Limitations of chart
 CPM network
 Project chart

Chapter - 8 CONSTRUCTION MANAGEMENT & EQUIPMENTS

 Civil Engg construction industry
 Human resource management
 Material & equipment managements
 Classes of equipments
 Factors in the selection of equipment
 Earth moving equipment
 Concreting equipment
 Different types of minor machine
 Vibrators

I) SUGGESTED INSTRUCTIONAL STRATEGIES

 Lecture Method
- Industrial visits
- Expert Lecture
- Demonstration.

J) SUGGESTED LEARNING RESOURCES:

a) Reference Books:

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Title</th>
<th>Author, Publisher, Edition &amp; Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>ABC of PWD accounts</td>
<td>C.M. Kaul</td>
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<tr>
<td>2.</td>
<td>Overseer account and duties</td>
<td>Kumar</td>
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<tr>
<td>3.</td>
<td>Construction Management and PWD account</td>
<td>Agarwal and Arora</td>
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<td>4.</td>
<td>CPM and PERT</td>
<td>R.M. Kapoor</td>
</tr>
<tr>
<td>5.</td>
<td>Manual of labour relations</td>
<td>R.G.Shrivastava</td>
</tr>
</tbody>
</table>

LIST OF EXERCISES & VISITS

A EXERCISES

1. Drafting notice inviting tender for various works.
2. Writing measurement books for different works.
3. Preparing muster rolls.
4. Preparing imprest account and temporary advance forms and developing skill for filling in forms.
5. Solving CPM and Net work problems.

B VISITS

1. Visit to public sector/Govt, Industry/organization.
2. Visit to private sector Industry.
CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

A) SEMESTER : VI
B) COURSE TITLE : ENTREPRENEURSHIP DEVELOPMENT
C) CODE : 200615 (37)
D) BRANCH/DISCIPLINE : CIVIL ENGINEERING
E) RATIONALE:

It has been experienced in most parts of the world that entrepreneurship development is a means of rapid economic development vis-à-vis creation of gainful employment of masses. The myth that entrepreneurs are born and not made no longer holds good. Experiences of last few decades in India show that it is possible to develop entrepreneurs through planned efforts. These designed efforts are more essentially required in polytechnics where increasing unemployment has necessitated promoting self-employment/entrepreneurship as career option thereby creating more job providers than job seekers. This course focuses on inputs required for students to undertake entrepreneurial activities as career option.

F) TEACHING AND EXMINATION SCHEME:

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<tbody>
<tr>
<td>1.</td>
<td>1.</td>
<td>ENTREPRENEURSHIP DEVELOPMENT</td>
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<td>12</td>
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<tr>
<td>2.</td>
<td>2.</td>
<td>FORMS OF BUSINESS ORGANIZATION</td>
<td>8</td>
<td>10</td>
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<td>3.</td>
<td>3.</td>
<td>INSTITUTIONAL SUPPORT FOR SSI</td>
<td>8</td>
<td>12</td>
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<tr>
<td>4.</td>
<td>4.</td>
<td>PLANNING A SMALL SCALE INDUSTRY</td>
<td>10</td>
<td>18</td>
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<td>5.</td>
<td>5.</td>
<td>MANAGEMENT OF SMALL</td>
<td>8</td>
<td>12</td>
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<tr>
<td></td>
<td>BUSINESS FIRMS</td>
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<tr>
<td>6.</td>
<td>PROJECT SELECTION, FORMULATION AND APPRAISAL</td>
<td>12</td>
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<tr>
<td>7.</td>
<td>PROBLEMS OF SMALL INDUSTRIES</td>
<td>12</td>
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<tr>
<td>8.</td>
<td>ENTREPRENEURIAL MOTIVATION TRAINING</td>
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<td></td>
<td>TOTAL</td>
<td>80</td>
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</tbody>
</table>

H) DETAILED COURSE CONTENTS:

CHAPTER-1 Entrepreneurship Development

➢ Definition of entrepreneurship,
➢ Characteristics of entrepreneurs,
➢ Factors influencing entrepreneurship,
➢ Need for promotion of entrepreneurship and small business
➢ Entrepreneurial Environment
➢ Environmental analysis.
➢ Government policies for setting up new small enterprises
➢ Opportunities in service industries.

CHAPTER – 2 Forms of Business Organization

➢ Forms of ownership
➢ Sole Proprietorship
➢ Partnership
➢ Cooperative society
➢ Joint – stock company
➢ Private Limited Companies
➢ Public Limited Companies

CHAPTER – 3 Institutional support to SSI

➢ Institutional set up
➢ Industries centers,
➢ Industrial estates
➢ Institutional support at National level
➢ Institutional support at State level
➢ Commercial banks and financial institutions

CHAPTER – 4 Planning a SSI

➢ What is planning?
➢ Types of planning
➢ Importance of planning
➢ Steps in planning
➢ Steps in planning a SSI
➢ Technical dimensions for setting up an enterprise
CHAPTER-5 Management of Small Business Firm

- Functional areas of small business firm
- Fundamentals of Management
- Managerial effectiveness
- Essential data for effective control of small business
- Resource management
- Office management
- Employees Welfare & safety
- Factory rules and Labour Laws related to SSIs
- Sales Tax and Income Tax laws related to SSIs

CHAPTER-6 Project selection, Formulation & Appraisal

- Project selection & formulation
- Scope of project report
- Content & Format of Project report
- Need of Project Appraisal
- Steps of Project Appraisal

CHAPTER-7 Problems of Small industries

- Power shortages
- Project planning
- Finance
- Raw material
- Production constraints
- Marketing
- Personal constraints
- Regulations

CHAPTER-8 Entrepreneurial Motivation Training

- Achievement Motivation
- Creative thinking
- Risk taking abilities

I) SUGGESTED INSTRUCTIONAL STRATEGIES:

- Lecture Method.
- Industrial visits.
- Simulation
- Role play
- Interaction with successful entrepreneurs
- Demonstration.
Games

J) SUGGESTED LEARNING RESOURCES:

(a) Reference Books:

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</thead>
<tbody>
<tr>
<td>3.</td>
<td>Entrepreneurship Development in small scale proceedings of National Seminar, DCSSI, New Delhi</td>
<td>Patel V.G.</td>
</tr>
<tr>
<td>6.</td>
<td>Entrepreneurship development in India</td>
<td>Dr. C.B. Gupta Dr. N.P. Srinivasan Sultan Chand &amp; Sons</td>
</tr>
</tbody>
</table>

LIST OF TEAM WORK

Team Work will consist of collecting following information by the students:
1. Collect State industrial policy
2. Report of interaction with successful entrepreneurs/industrial visits
3. Prepare list of opportunities for business, service and industrial ventures
4. Whom to approach for What?
5. Facilities and incentives available from various support agencies.
CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY,
BHILAI

A) SEMESTER : VI
B) COURSE TITLE : PROJECT
C) CODE : 220624 (20)
D) BRANCH/DISCIPLINE : CIVIL ENGINEERING
E) RATIONALE :

The basic purpose of “Project” is to develop the ability of learning to learn on its own. This would go a long way in helping the students in keeping pace with future changes in technology and in the acquisition of knowledge and skills as and when needed.

The project work, which aims at closer coordination and integration between theory and practice. It gives access to the wider range of field techniques; help to develop planning and decision-making skills. It develops confidence in the students to work independently, participating group work, helps in comprehensive knowledge of various subjects in practical aspect apart from what is taught in class room and also helps in tackling live problems.

Major project is prescribed so that a student gets complete ideas of planning and estimating a project and writing a project report. The project will help the student to be acquainted with modern materials, equipments and the market cost analysis.

The overall project work will help the student to become an entrepreneur than depending on government job and services.

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List of major/minor projects

- Major Project

Student will have to choose any one of the following:

- Public Health Engineering Project

Study of existing water supply scheme, sewage disposal system with respect to its detail drawing design and other structural aspects, market survey, rate analysis and review of the work.
- **Irrigation work**
  Student will have to study of existing irrigation system (canal and lift irrigation), they will have to study topo sheet, contour map, and conduct various survey (if required) to prepare contour maps, to mark command area. They have to calculate storage capacity of reservoir and fix height of dam and levels such as FRL and LWL etc. Calculation of water losses, evaporation losses and seepage losses.

- **Building construction**
  Study of existing building or building under construction, single or multistoried building with respect to its layout, drawing, design, estimating /costing and other structural aspects. They will have to emphasize the problems involved in his learning task and suggest remedies. In addition they have to prepare detailed project report focusing on different activities such as preparation of index plan layout plan, working drawing structured drawing and preparation of detailed estimate with abstract.

- **Minor Project**
  - **Highway Engineering (road work)**
    Student will have to do field work for at least 3 km of existing road length, and prepare L- section, various cross sections at regular intervals, prepare alignment and plan, road geometry, prepare stage I estimate and other relevant features, with their conclusion for repair and renovation of road.

- **Maintenance of any small building**
  The student will have to visit an old building and prepare an inspection report for the various defects and find their causes and suggest suitable remedies. The students will have to carry the market survey and collect the latest rates of various building materials and after making analysis of rates for different items of work they will have to prepare own C.S.R and compare it with the C.S.R of PWD and R.E.S etc.