

**CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY,
BHILAI**

DIPLOMA PROGRAMME IN CIVIL ENGINEERING

Semester – VI

S. No	Board of Study	Course Code	Course	Periods/Week (in Hours)			Scheme of Examination					Credit L+(T+P)/2	
				L	T	P	Theory			Practical			Total Marks
							ESE	CT	TA	ESE	TA		
1.	Civil Engg.	220611 (20)	Quantity Surveying & Costing-II	4	1	-	100	20	30	-	-	150	5
2.	Civil Engg.	220612 (20)	Structural Design & Drafting-II	4	1	-	100	20	30	-	-	150	5
3.	Civil Engg.	220613 (20)	Computer Aided Drafting and Programming	2	1	-	100	20	30	-	-	150	3
4.	Civil Engg.	220614 (20)	Construction Management	4	1	-	100	20	20	-	-	140	5
5.	Mech. Engg.	200615 (37)	Entrepreneurship Development	4	1	-	100	20	10	-	-	130	5
6.	Civil Engg.	220621 (20)	Quantity Surveying & Costing-II Lab	-	-	2	-	-	-	50	20	70	1
7.	Civil Engg.	220622 (20)	Structural Design & Drafting-II Practical	-	-	2	-	-	-	50	20	70	1
8.	Civil Engg.	220623 (20)	Computer Aided Drafting and Programming Lab	-	-	4	-	-	-	50	20	70	2
9.	Civil Engg.	220624 (20)	Project	-	-	5	-	-	-	50	20	70	3
TOTAL				18	5	13	500	100	120	200	80	1000	30

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:

Course Code	Periods/Week (In Hours)			Scheme of Examination						Credit L+(T+P)/2
	L	T	P	Theory			Practical		Total Marks	
				ESE	CT	TA	ESE	TA		
220611 (20)	4	1	-	100	20	30	-	-	150	5
220621 (20)	-	-	2	-	-	-	50	20	70	1

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:

S. No.	Chapter No.	Chapter Name	Theory	Marks
1	1	ESTIMATE OF TIMBER STRUCTURE	5	10
2	2	ESTIMATE OF R.C.C. STRUCTURE	15	20
3	3	ESSTIMATE OF STEEL STRUCTURE	10	10
4	4	ESTIMATE OF CULVERTS & BRIDGES	15	20
5	5	ESTIMATE OF WATER SUPPLY AND SANITARY FITTINGS	15	20
6	6	VALUATION	20	20
Total			80	100

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 GIC 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:

Sl. No.	Title	Author and Publisher
1	Estimating and Costing	B.N. Dutta, S.D. Dutta & Co., Tagore Path, Motilal Bose Road, Lucknow
2	Estimating, Costing & Valuation	Rangwala,, Chander Publications, Station Road, Anand
3	Estimating & Costing	Birdle, J.C. Kapoor for Dhanpet & Sons, Delhi
4	Estimating & Costing Vol. I & II	J.C. Malhotra, Khanna Publishers, 28, Nath Market, Nai Sarak, New Delhi
5.	Current Schedule of rates from PWD/PHE/Irrigation	-

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.
- 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.

**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:

Course Code	Periods/Week (In Hours)			Scheme of Examination						Credit $L+(T+P)/2$
	L	T	P	Theory			Practical		Total Marks	
				ESE	CT	TA	ESE	TA		
220612 (20)	4	1	-	100	20	30	-	-	150	5
220622 (20)	-	-	2	-	-	-	50	20	70	1

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:

S. No.	Chapter No.	Chapter Name	Hours	Marks
1	1	INTRODUCTION	2	5
2	2	RIVETED & WELDED JOINT	12	10
3	3	BEAMS	10	10
4	4	TENSION MEMBER	7	10
5	5	COMPRESSION MEMBER	7	10
6	6	COLUMN BASES AND COLUMN FOOTING	8	10

S. No.	Chapter No.	Chapter Name	Hours	Marks
7	7	ROOF TRUSS	18	20
8	8	ANALYSIS OF CONTINUOUS BEAMS	16	15
TOTAL			80	90 + 10 for drafting

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 :

Sl. No.	Title	Author, Publisher, Edition & Year
1	Steel Structure	S. Ramamutham
2	Steel Structure	Ramchandra
3	Steel Structure	M.M. Malhotra
4	Steel Structure	R.K. Dhoble
5	Steel Structure	Arya Ajmani
6	I. S. code 800 – 1984	
7	Steel Structure	Negi

Subject: Structural Design & Drafting-II Lab

PRATICAL CODE: 220622 (20)

Hours: 32

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:

Course Code	Periods/Week (In Hours)			Scheme of Examination						Credit L+(T+P)/2
	L	T	P	Theory			Practical		Total Marks	
				ESE	CT	TA	ESE	TA		
220613 (20)	2	1	-	100	20	30	-	-	150	3
220623 (20)	-	-	4	-	-	-	50	20	70	2

L: Lecture hours; T: Tutorial hours, P: Practical hours

ESE – End of Semester Exam.; CT – Class Test; TA- Teacher’s Assessment ;

G) DISTRIBUTION OF MARKS AND HOURS:

S. No.	Chapter Name	Hours	Marks
1	INTRODUCTION	04	05
2	AUTOCAD FEATURES	05	10
3	APPLICATION OF AUTOCAD	04	15
4	ADVANCE 3D DRAFTING	08	15
5	IDEA OF WALK THROUGH	04	05
6	INTRODUCTION TO AUTO LISP	05	15

S. No.	Chapter Name	Hours	Marks
7	INTERACTION WITH DRAWING EDITOR AND DECISION MAKING	05	10
8	WORKING WITH GEOMETRY AND TEXT	05	10
9	EDITING AND CHANGING PROPERTIES OF OBJECTS	04	10
10	DEBUGGING PROGRAMMES	04	05
	TOTAL	48	100

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 :

Sl. No.	Title	Author, Publisher, Edition & Year
1	Reference manual of AutoCAD	Autodesk Inc.
2	The ABC's Autolisp	George Ommura BPB
3	Mastering In AutoCAD	George Ommuran BPB
4	Thinking in Auto CAD	Sachin Raje

Subject: Computer Aided Drafting and Programming Lab

PRACTICAL CODE : 220623 (20)

HOURS: 64

LIST OF PRACTICALS / TUTORIALS:

DEMONSTRATIONS

Sno	Title of Programmes
1	Recall 2D editing
	Prepare plan, elevation and sectional view (including hatching) of any one of the following using AutoCAD <ul style="list-style-type: none">- Small residential building- Simple irrigation structures like canal fall- Septic tank, manhole, drop manhole- Section of a road pavement
2	3D Drafting <ul style="list-style-type: none">- 3D View of steps- 3D View of small residential building- Any irrigation structure
3	Introduction to auto lisp (demo only)
4	Creating an object using Auto lisp
5	Changing properties of objects
6	Condition loop and recursion
7	Geometry and leaf in lisp
8	Plotting/printing of structure related to civil engineering

**CHHATTISGARH SWAMI VIVEKANAND TECHNICAL
UNIVERSITY, BHILAI**

- 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 sub ordinate 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

Course Code	Periods/Week (In Hours)			Scheme of Examination						Credit L+(T+P)/2
	L	T	P	Theory			Practical		Total Marks	
				ESE	CT	TA	ESE	TA		
220614 (20)	4	1	-	100	20	20	-	-	140	5

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

G) DISTRIBUTION OF MARKS AND HOURS

S. No.	Chapter No.	Chapter Name	Hours	Marks
1	1	INTRODUCTION	4	5
2	2	WORK BY CONTRACT AGENCY	10	10
3	3	WORK BY DEPARTMENT A-GENERAL	12	20
4	4	WORK BY DEPARTMENT B - MEASUREMENT & PAYMENT	10	10
5	5	CASH BILL, AUCTION & T.A. RULE	10	20

S. No.	Chapter No.	Chapter Name	Hours	Marks
6	6	LABOUR WELFARE AND LAWS	6	5
7	7	TIME SCHEDULE FOR WORKS	13	20
8	8	CONSTRUCTION MANAGEMENT & EQUIPMENTS	15	10
TOTAL			80	100

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 vouchers
- 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 :

Sl. No.	Title	Author, Publisher, Edition & Year
1.	ABC of PWD accounts	C.M.Kaul
2.	Overseer account and duties	Kumar
3.	Construction Management and PWD account	Agarwal and Arora
4.	CPM and PERT	R.M.Kapoor
5.	Manual of labour relations	R.G.Shrivastava

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:

Course Code	Periods/Week (In Hours)			Scheme of Examination						Credit L+(T+P)/2
	L	T	P	Theory			Practical		Total Marks	
				ESE	CT	TA	ESE	TA		
200615 (37)	4	1	-	100	20	10	-	-	130	5

L: Lecture hours; T: Tutorial hours, P: Practical hours

ESE – End of Semester Exam.; CT – Class Test; TA- Teacher’s Assessment ;

G) DISTRIBUTION OF MARKS AND HOURS:

Sl. No.	Chapter No.	Chapter Name	Hours	Marks
1.	1.	ENTREPRENEURSHIP DEVELOPMENT	10	12
2.	2.	FORMS OF BUSINESS ORGANIZATION	8	10
3.	3.	INSTITUTIONAL SUPPORT FOR SSI	8	12
4.	4.	PLANNING A SMALL SCALE INDUSTRY	10	18
5.	5.	MANAGEMENT OF SMALL	8	12

		BUSINESS FIRMS		
6.	6.	PROJECT SELECTION, FORMULATION AND APPRAISAL	12	12
7.	7.	PROBLEMS OF SMALL INDUSTRIES	12	12
8.	8.	ENTREPRENEURIAL MOTIVATION TRAINING	12	12
		TOTAL	80	100

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

D) SUGGESTED INSTRUCTIONAL STRATEGIES:

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

- Games

J) SUGGESTED LEARNING RESOURCES:

(a) Reference Books :

Sl. No.	Title	Author, Publisher, Edition & Year
1.	Starting your own Business, A step-by-step Blue print for the First-time Entrepreneur	Stephen C. Harper, Mc Craw-Hill
2.	Harward Business Review on Entrepreneurship	Harvard Business School Press
3.	Entrepreneurship Development in small scale proceedings of National Seminar, DCSSI, New Delhi	Patel V.G.
4.	Entrepreneurship : Strategies & Resources	Abrams Grant Pass, Oregon: Oasis Press
5.	The Business Planning Guide	David H. Bangs Upstart Publishing Company, In Chicago
6.	Entrepreneurship development in India	Dr. C.B. Gupta Dr. N.P. Srinivasan Sultan Chand & Sons

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.

F) TEACHING AND EXMINATION SCHEME:

Course Code	Periods/Week (In Hours)			Scheme of Examination						Credit L+(T+P)/2
	L	T	P	Theory			Practical		Total Marks	
				ESE	CT	TA	ESE	TA		
220624 (20)	-	-	5	-	-	-	50	20	70	3

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.