

Chhattisgarh Swami Vivekanand Technical University, Bhilai

SCHEME OF TEACHING AND EXAMINATION

V SEMESTER B. Arch (Five Years Degree Course)

S. N.	Subject Code	Board Of Studies	Subject	Periods per Week			Scheme of Examination			Total Marks	Credit [L+(T+P)/2]
				L	T	P	ESE	CT	TA		
01.	316511 (16)	Arch.	Building Construction -V	3	-	-	80	20	75	175	3
02.	316512 (20)	Civil Engg.	Structure- V	3	2	-	80	20	20	120	4
03.	316513 (16)	Arch.	Building Services –I (Water supply and Sanitation)	3	1	-	80	20	40	140	4
04.	316514 (16)	Arch.	Acoustics	2	1	-	80	20	20	120	3
05.	316515 (16)	Arch	Modern Architecture	2	1	-	80	20	20	120	3
06.	316516 (16)	Arch.	Design -V	2	6	-	---	---	150	150	5
07.	316521 (16)	Arch.	Design –V (Studio)	-	-	2	50	---	--	50	1
08.	316522 (16)	Arch,	Building Construction –V (Studio)	-	-	6	25	---	--	25	3
09.	316523 (16)	Arch.	Working Drawing –I (Studio)	-	-	6	25	---	75	100	3
TOTAL				15	11	14	500	100	400	1000	29

L- Lecture T- Tutorial P- Practical ESE- End Semester Exam TA- Teacher's Assessment

Chhattisgarh Swami Vivekanand Technical University, Bilai (C.G.).

Semester : **V**

Subject: **BUILDING CONSTRUCTION - V**

Total Theory Periods: **40**

Total Marks in End Semester Exam: **80**

Minimum number of Class tests to be conducted: **02**

Branch: **ARCHITECTURE**

Code: **316511 (16)**

Total Tutorial Period : Nil

- Unit 1: Design and constructional details of sliding doors, sliding folding doors, revolving doors, swing doors and sliding windows in timber.
- Unit 2: Design and construction details of fixed glazing, side hung doors, fully glazed doors in aluminum, rolling shutters and collapsible gates.
- Unit 3: Study of metal and aluminum sectioned curtain wall.
- Unit 4: Study of steel railing, jali, grills, staircase, and ladders. Study of compound wall (advance type) with security arrangement, study of wicket gate and large entrance gates rolling on wheels.
- Unit 5: Study of expansion joints, waterproofing and roof light. Study of details of various methods of façade treatment and interior finishes.

- Note: 1. There shall be regular site visits to buildings, under construction or constructed, to explain the above topics. Use of audio-visuels should be stressed.
2. Submission of sessionals work shall be done as scaled drawings on drawing sheets and freehand drawings along with occasional visits to construction sites.
3. In theory examination there will be a separate question from each unit with choice within the unit/question. All units/questions will be compulsory.

Chhattisgarh Swami Vivekanand Technical University, Bhilai (C.G.).

Semester: **V**

Subject: **STRUCTURE - V**

Total Theory Periods: **40**

Total Marks in End Semester Exam: **80**

Minimum number of Class tests to be conducted: **02**

Branch: **ARCHITECTURE**

Code: **316512 (20)**

Total Tut Periods: **24**

(R.C.C.: LIMIT STATE METHOD)

Unit 1: Analysis & Design of singly and doubly reinforced beams.

Unit 2: Design of "T" and lintel beams.

Unit 3: Design of slabs: One-Way, cantilever, continuous.

Unit 4: Design of axially loaded column & column footing (isolated).

Unit 5: Design of staircases: Doglegged & open well.

- NOTE:
1. I.S. code 456 is permitted in examination.
 2. Submission of the sessionals works should include the analysis and design of simple elements along with the drawings.
 3. In theory examination there will be a separate question from each unit with choice within the unit/question. All units/questions will be compulsory.

Chhattisgarh Swami Vivekanand Technical University, Bhilai (C.G.).

Semester : V

Subject: **BUILDING SERVICES -I**
(WATER SUPPLY & SANITATION)

Branch: **ARCHITECTURE**

Code: **316513 (16)**

Total Theory Periods: **40**

Total Tut Periods: **12**

Total Marks in End Semester Exam: **80**

Minimum number of Class tests to be conducted: **02**

A) SANITATION

Unit 1: Basic principles of sanitation, introduction to modern plumbing system. Study of Indian Standards and plumbing byelaws; general introduction to various sanitary fitting & fixtures, their placement, functions and constructional details; study of internal & external drainage system including study of ducts for various buildings including small residences, apartments, block of houses, public buildings etc.

Unit 2: Study of various types of sanitary pipes, construction of joints and laying of pipes. Study of Traps, Inspection chambers, Manholes, Septic tanks, Soak pits, and Public sewage line; study of disposal systems for domestic effluents – from fitting to sewer line; study of SULABH COMPLEXES and other C. B. R. I. details; study of storm water disposal at site and settlement level.

Unit 3: Importance of sanitary services in the economics of buildings. Study of refuse chutes and service floors in multistoried buildings. Planning & design for disposal of city effluent. Various methods of collection, treatment, disposal, and recycle of city effluent including wastewater and city solid wastes.

B) WATER SUPPLY

Unit 4: Study of sources of water and water treatment for domestic purpose. Study of quality of potable water.

Unit 5: Study of Indian standards and water supply network. Architectural approach to plan the domestic water storage facilities and water distribution system in a building and settlement, along with study of fixtures, fittings, accessories, equipments and construction details thereof.

Note: 1. Submission of the sessionals will be prepared in the form of sanitation schemes, water supply schemes and design of toilets of the given building or buildings.

2. In theory examination there will be a separate question from each unit with choice within the unit/question. All units/questions will be compulsory.

Chhattisgarh Swami Vivekanand Technical University, Bhilai (C.G.).

Semester : **V**

Subject: **ACOUSTICS**

Total Theory Periods: **28**

Total Marks in End Semester Exam: **80**

Minimum number of Class tests to be conducted: **02**

Branch: **ARCHITECTURE**

Code: **316514 (16)**

Total Tut Periods: **12**

Unit 1: Fundamental Properties and characteristics of sound. (Frequency, wavelength, velocity, pressure, pressure level, intensity, pitch, tone, loudness, timbre etc.)

Unit 2: Behavior of sound in open and enclosed spaces with reference to the form of enclosures, and various surface finishes. (Reflection, Absorption, Diffraction, Insulation, Transmission, Echo, Resonance, Reverberation etc.)

Unit 3: Reverberation time, Sabine's formula along with the limitations and prerequisites. Acoustical design measures for live acoustical environment in enclosures used for various purposes viz. Classrooms, Lecture halls, Auditoriums, Seminar Halls, Conference rooms, Meeting rooms, Theatres, Music concert halls, Opera houses, Dance halls, Open air theatres, Movie Theatres, Meditation centers, Group prayer halls etc.

Unit 4: Acoustical materials along with their properties, behavior, selection criteria, use, and construction details.

Unit 5: Noise. Physiological and Psychological impact of noise on human beings. Noise criteria for various spaces viz: Living areas, Educational areas, Offices, Shopping etc. Measures to control noise nuisance (Air borne and Structure borne) in residential, educational, commercial, and Industrial areas along with calculations.

- Note:** 1. In theory examination there will be a separate question from each unit with choice within the unit/question. All units/questions will be compulsory.
2. Sessionals shall be in form of exemplary assignments to be submitted as design solutions along with calculations.

Chhattisgarh Swami Vivekanand Technical University, Bhilai (C.G.).

Semester : **V**

Subject: **MODERN ARCHITECTURE**

Total Theory Periods: **28**

Total Marks in End Semester Exam: **80**

Minimum number of Class tests to be conducted: **02**

Branch: **ARCHITECTURE**

Code: **316515 (16)**

Total Tut Periods: **12**

Unit 1: Review of the development of Architecture on global level related to all influencing factors regarding evolution of styles. Movement of Modernism including various Architectural and aesthetical philosophies and concepts.

Unit 2: Understanding the determinants of physical form viz.: Space, Structure, Organization, Symbolism, Order, Datum, Axis, Surface, Mass, Void, Scale, Proportion, Harmony, Contrast, Rhythm, Balance, Accentuation etc. based on the comparison between the past development and modern movement.

Unit 3: Study of Modern Architecture based on works and concepts of exemplary Indian and Non-Indian modern architects in 20th and 21st century.

Unit 4: Communication and Interpretations of Modern and Contemporary Architecture based on study of literature and existing buildings to understand design parameters principles process, methods and Programme-formulation for design.

Unit 5: Study of environmental design and technology with reference to trend setting works of contemporary architects, designers, ecologists, engineers etc.

Note: 1. Submission of the sessionals should be in the form of written and graphic presentation and presented in the seminar along with the audio visuals which will be based on buildings identified during regular site visits.

2. In theory examination there will be a separate question from each unit with choice within the unit/question. All units/questions will be compulsory.

Chhattisgarh Swami Vivekanand Technical University, Bhilai (C.G.).

Semester : **V**

Subject: **DESIGN -V**

Total Theory Periods: **28**

Total Marks in End Semester Exam: --

Minimum number of Class tests to be conducted: --

Branch: **ARCHITECTURE**

Code: **316516 (16)**

Total Tut Periods: **72**

The subject aims at developing creativity for designing imaginative built forms with application of principles and theory of architectural design and philosophies of contemporary architects. The attempt is towards developing ones own language and philosophy of architecture to guide towards exploring alternative building forms for different activities which help in understanding the relationship of structure and possibilities in building forms. Design problems shall include problems of simple and complex nature i.e. Temples, Gathering places, Exhibition pavilions, Clubs, Cafés, Community halls, Museums, Art galleries, Pavilions, Sport complexes, Nursing homes.

Emphasis shall be given more on three-dimensional studies to develop an understanding for man and space relationship and also relevant building byelaws.

There should be variety of problems in the studio work with changing focus for each problem from theory to construction techniques (local) and site layouts, including organization and detailing of open spaces with an aim to learn working with practical limitations.

One group exercise of measure drawings of a building for documentation shall be assigned. Minimum one time problem is to be attempted in class.

Note: Submission of the sessionals will be in the form of drawings and models along with Technical report for the design dealt. The evaluation shall be done in intermediate reviews consisting of internal and external experts. There should be regular site visits to buildings, dealt in studio problems, so as to document them with the help of photographs, slides, videocassettes etc.

**Chhattisgarh Swami Vivekanand Technical University, Bilai
(C.G.).**

Semester : **V**

Subject: **DESIGN - V (STUDIO)**

Total Theory Periods: **28**

Total Marks in End Semester Exam: **50**

Minimum number of Class tests to be conducted: --

Branch: **ARCHITECTURE**

Code: **316521 (16)**

The subject is a lab (studio) oriented subject and hence, the syllabus as specified in Design - V [316516-(16)] will be the same. The works done as sessionals will be evaluated by internal and external examiners at the end semester examination. For conduction of the Practical (viva-voce) examination one external and one internal examiner may be appointed for a group of 15-20 students.

**Chhattisgarh Swami Vivekanand Technical University, Bilai
(C.G.).**

Semester : **V**

Subject: **BUILDING CONSTRUCTION-V (STUDIO)**

Total Practical Period : **72**

Total Marks in End Semester Exam: **25**

Minimum number of Class tests to be conducted: --

Branch: **ARCHITECTURE**

Code: **316522 (16)**

The subject is a lab (studio) oriented subject and hence, the syllabus as specified in Building Construction - V [316511-(16)] will be the same. The works done as sessionals will be evaluated by internal and external examiners at the end semester examination. For conduction of the Practical (viva-voce) examination one external and one internal examiner may be appointed for a group of 15-20 students.

Chhattisgarh Swami Vivekanand Technical University, Bhilai (C.G.).

Semester : **V**

Subject: **WORKING DRAWING -I (STUDIO)**

Total Practical Period : **72**

Total Marks in End Semester Exam: **25**

Minimum number of Class tests to be conducted: --

Branch: **ARCHITECTURE**

Code: **316523 (16)**

Total Tut Periods: **Nil**

The aim of this subject is to train the students to enable them to make the detailed and accurate drawings so as to be executed in construction on site.

1. Introduction to various building components and precise purpose of set of working drawings. Study of each drawing with reference to specification & schedules of structure, services i.e. electrical, water supply, sanitation, air conditioning and communication.
2. Preparations of check list as guide for list of working drawings. Study of building byelaws for various construction details. Method of representing various contents & specific information in working drawings.
3. Preparation of municipal drawings and importance of working drawing as a legal document and tender document.
4. One set of working drawing of students own previous/current design of load bearing structure along with large-scale Details of some specifically designed situations.

Note: Submission of the sessionals shall be in the form of full set of working drawing and design details of given building. The sessionals marks will be based upon the portfolio submitted and internal viva. The works done as sessionals will be valued by internal and external examiners at the end semester examination. For conduction of the Practical (viva-voce) examination one external and one internal examiner may be appointed for a group of 15-20 students.