

# *Chhattisgarh Swami Vivekanand Technical University, Bhilai*

## Scheme of teaching and examination

### B.E. IV Semester Bachelor of Architecture (Five Year Degree Course)

S. No.	Board of Study	Subject Code	Subject	Periods per week			Scheme of Exam			Total Marks	Credit L+(T+P)/2
				L	T	P	Theory/ Pract.				
							ESE	CT	TA		
1	Architecture	316411 (16)	Building Construction- IV	2	-	-	80	20	75	175	2
2	Civil Engg.	316412 (20)	Structure IV	3	2	-	80	20	25	125	4
3	Architecture	316413 (16)	Energy Efficient Architecture	2	2	-	80	20	25	125	3
4	Civil Engg.	316414 (20)	Site Survey	2	1	-	80	20	25	125	3
5	Architecture	316415 (16)	History of Architecture- III	2	2	-	80	20	25	125	3
6	Architecture	316416 (16)	Design – IV	3	5	-	-	-	200	200	6
7	Architecture	316421 (16)	Design- IV (Studio)	-	-	3	50	-	-	50	2
8	Architecture	316422 (16)	Building Construction – II (Studio)	-	-	3	25	-	-	25	2
9	Civil Engg.	316423 (20)	Site Survey (Field Practical)	-	-	3	25	-	-	25	2
9	Architecture	316424 (16)	Tour / BLDG. Appraisal	-	-	1	-	-	25	25	1
<b>Total</b>				<b>14</b>	<b>12</b>	<b>10</b>	<b>500</b>	<b>100</b>	<b>400</b>	<b>1000</b>	<b>28</b>

L-Lecture, T-Tutorial,  
P-Practical, ESE- End sem. Exam, CT-Class Test ,  
TA- Teacher's Assessment,

- Note:**
1. ESE and TA (Both Theory and Practical) are required to be passed separately.
  2. For a the subjects having Practical (i.e. Studio work) will be divided in sections at the rate of maximum 15 students per teacher, though studio of all the sections will be held simultaneously in the same studio hall.

**CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY,  
BHILAI (C.G.)**

Semester: **B.E. IV**

Subject: **Building Construction- IV**

Total Theory Periods: **28**

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

Minimum number of class test to be conducted: **02**

Branch: **B. Arch**

Code: **316411 (16)**

Total Tutorial Periods: Nil

**Unit – 1**      Shoring

**Unit – 2**      Industrial Steel floor (Fire proof) jack Arch roofing, stone slab roofing, stone stairs, stone floor on girder.

**Unit – 3**      Steel roofs-types except North Light, Monitor & Tubular trusses.

**Unit – 4**      Precast components (C.B.R.I.)

**Unit – 5**      Design & construction details of domestic furniture in timber & hollow tube sections, slab flooring, stone stairs.

- Note:**
1.      There shall be regular site visits to buildings, under construction or Constructed, to explain the above topics. Use of audio-visuals should be stressed.
  2.      Submission of Sessional work shall be done as sealed 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/question will be compulsory.

**CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY,  
BHILAI (C.G.)**

Semester: **B.E. IV**  
Subject: **Structure – IV**  
Total Theory Periods: **40**  
Total Marks in End Semester Exam. : **80**  
Minimum number of class test to be conducted: **02**

Branch: **B. Arch**  
Code: **316412 (16)**  
Total Tutorial Periods: **24**

- Unit – 1**      Fixed beams.
- Unit – 2**      Continuous beams, three-moment theorem.
- Unit – 3**      Moment distribution method (Beams only)
- Unit – 4**      Approximate methods for an analysis of frames by Portal & Cantilever methods.
- Unit – 5**      Introduction to R.C.C. (working stress method) Analysis of beams: Singly, doubly & T beams (No design).

- Note:**
1.      Sessional work should include the analysis of simple elements along with the drawings.
  2.      In theory examination there will be a separate question from each unit with choice within the unit/question. All units/question will be compulsory.

**CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY,  
BHILAI (C.G.)**

Semester: **B.E. IV**  
Subject: **Energy Efficient Architecture**  
Total Theory Periods: **28**  
Total Marks in End Semester Exam. : **80**  
Minimum number of class test to be conducted: **02**

Branch: **B. Arch**  
Code: **316413 (16)**  
Total Tutorial Periods: **24**

- Unit – 1**      Types, availability and reserves of conventional and non-conventional energy sources.
- Unit – 2**      Assessment of energy consumption in a building and methods of energy conservation
- (a)      Through minimizing wastages.
  - (b)      Through appropriate use of climatology.
  - (c)      Through appropriate design and planning of buildings.
- Unit – 3**      Introduction to solar energy efficient architecture, Study of solar radiation on earth surface. Measurement, angles, estimation and analysis. Orientation of building, with reference to solar radiation. Special design and planning detailing. Active solar architecture. Passive solar architecture.
- Unit – 4**      Introduction to wind oriented architecture, study and analysis of micro level wind. Design and planning of building considering winds.
- Unit – 5**      Study of energy efficient building material and construction techniques. Case study national and international examples. Studio problem.
- Note:**
- 1      Submission of the Sessional work should include reports, drawings, and experiments etc. in assignment seminar form.
  - 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: **B.E. IV**

Subject: **Site Survey**

Total Theory Periods: **28**

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

Minimum number of class test to be conducted: **02**

Branch: **B. Arch**

Code: **316414 (16)**

Total Tutorial Periods: **12**

- Unit – 1** Aspects of surveying for the Architect. Formulae used in measurement of land with geometrical and abstract configurations to work out Areas, volumes and other quantities.
- Unit – 2** Scales – Plain scale, diagonal scale, comparative scale, shrunk scale, vernier scale.
- Unit – 3** Study, test, degree of accuracy, use and care of surveying instruments and accessories.
- Unit – 4** Site survey techniques (Chain surveying, compass surveying, Use of plain table and theodolite for surveying.)
- Unit – 5** Leveling and contouring along with calculations of volumes for alterations in land form.

Class work and fieldwork of the above subject should be oriented towards the layout of buildings and preparation of measured drawings. Students should also be taken to site visits for explaining the practical aspects of surveying.

- Note : 1** submission of the Sessional work should include reports, drawings, and experiments etc. in assignment seminar form.
- 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: **B.E. IV**  
Subject: **History of Architecture – III**  
Total Theory Periods: **28**  
Total Marks in End Semester Exam. : **80**  
Minimum number of class test to be conducted: **02**

Branch: **B. Arch**  
Code: **316415 (16)**  
Total Tutorial Periods: 24

- Unit – 1**      Byzantine and Islamic Architecture on global level.
- Unit – 2**      Islamic Architecture in India and inter-influence of indigenous architecture.
- Unit – 3**      Romanesque & Gothic Architecture
- Unit – 4**      Renaissance in Architecture on global level with study of colonial architecture in India.
- Unit – 5**      Industrial revaluation and its influence on architecture leading to Movement of Modernism in Architecture.
- Notes: 1.**      Sessional assignments will be inform of sketches and notes to be submitted in sketch book/files and presented through seminars and class test.
- 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: **B.E. IV**

Subject: **Tour / BLDG. Appraisal**

Total Theory Periods: **50**

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

Minimum number of class test to be conducted: **02**

Branch: **B. Arch**

Code: **316423 (16)**

Total Tutorial Periods: Nil

An educational tour to the place or places to which the students need visual and participatory exposure to understand contemporary development of Architecture, design trends, technology, building materials, landscapes, and other aspects of Natural and Man-made environment And/Or assignment of a project for building a praisal shall be organized as per the programme approved by the dept./ Institution.

The documentation of which shall be done in the from of photographs/ slides & sketches, presented in the form of a seminar and a written report immediately after the tour/ building appraisal.

**Notes: 1**      Sessional assignments will be inform of sketches and notes to be submitted in sketch book/files and presented through seminars and class test.

**CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY,  
BHILAI (C.G.)**

Semester: **B.E. IV**

Subject: **Design IV**

Total Theory Periods: **28**

Minimum number of class test to be conducted: **02**

Branch: **B. Arch**

Code: **316416 (16)**

Total Tutorial Periods: 72

This subject aims at developing in students the skill to design building and small settlements with consideration to natural and man made parameters. The assignments shall be Design of independent bungalows, farmhouses, combined units, duplex type their cluster or grouping etc. along with relevant Building codes.

The design shall be handled with study of natural environmental factors, their impact and consideration by human settlements of a town or a part of a city, especially housing along with the study of open spaces, activities in them. Emphasis on the following attitudes is important Detailed study of one or more of the following aspects-climatic considerations and relationship with life style. Emphasis on Consideration of constructional details, basic details of services like kitchen, toilets etc and site planning of the scheme.

There shall be minimum one time problem apart from regular design problems in the studio.

**Note:** Submission of the Sessional will be in the form of drawings and models along with technical report for the design dealt with. The evaluation should be done in intermediate review consisting of internal and external experts. There should be regular site visits to the building type dealt in the studio problems of which audio-visual should be prepared.



**CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY,  
BHILAI (C.G.)**

Semester: **B.E. IV**  
Subject: **Design IV (Studio)**  
Total Lab Periods: **28**  
Total Marks in End Semester Exam: **50**

Branch: **B. Arch**  
Code: **316421 (16)**

This subject aims at developing in students the skill to design building and small settlements with consideration to natural and man made parameters. The assignments shall be Design of independent bungalows, farmhouses, combined units, duplex type their cluster or grouping etc. along with relevant Building codes.

The design shall be handled with study of natural environmental factors, their impact and consideration by human settlements of a town or a part of a city, especially housing along with the study of open spaces, activities in them. Emphasis on the following attitudes is important Detailed study of one or more of the following aspects-climatic considerations and relationship with life style. Emphasis on Consideration of constructional details, basic details of services like kitchen, toilets etc and site planning of the scheme.

There shall be minimum one time problem apart from regular design problems in the studio.

**Note:** Submission of the Sessional will be in the form of drawings and models along with technical report for the design dealt with. The evaluation should be done in intermediate review consisting of internal and external experts. There should be regular site visits to the building type dealt in the studio problems of which audio-visual should be prepared.

**CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY,  
BHILAI (C.G.)**

Semester: **B.E. IV**  
Subject: **Building Construction- IV (Studio)**  
Total Lab Periods: **40**  
Total Marks in End Semester Exam. : **25**

Branch: **B. Arch**  
Code: **316422(16)**

**Unit – 1**      Shoring

**Unit – 2**      Industrial Steel floor (Fire proof) jack Arch roofing, stone slab roofing, stone stairs, stone floor on girder.

**Unit – 3**      Steel roofs-types except North Light, Monitor & Tubular trusses.

**Unit – 4**      Precast components (C.B.R.I.)

**Unit – 5**      Design & construction details of domestic furniture in timber & hollow tube sections, slab flooring, stone stairs.

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