SAVITRIBAI PHULE PUNE UNIVERSITY
[Formerly the University of Pune]

DETAILED SYLLABUS OF FOURTH YEAR B. ARCH.
2019 PATTERN
To be implemented from AY 2022-23

BOARD OF STUDIES IN ARCHITECTURE
FACULTY OF SCIENCE AND TECHNOLOGY

SEMESTER VII

ARCHITECTURAL DESIGN VI		
Course Code	4201953 [SV]	
Teaching Scheme	Examination Scheme	
Total Contact Hours per week: 8 (Lectures: 1, Studio: 7)	Sessional [CIA125+EA125] Viva [INT 25+ EXT 25]	250 50
	In-semester exam	NIL
	End Semester exam	NIL
	Total Marks	300
	Total Credits	11

COURSE OBJECTIVES:

To develop to Develop Architectural programming of the entire project for **housing** including the process of generating a design brief, developing design iterations based on issues involved and taking design decisions based on the following aspects

- **Precedent Studies:**
  To analyse cases, referral, live studies through the process of observation, survey and documentation and evaluate them for gaining a design approach.
- **Socio-Cultural Aspects:**
  To evaluate socio-cultural aspects like lifestyle, cultural beliefs and practices, traditions, etc. and their effect on housing design**.**
- **Economic aspects:**
  To understand the economic concerns with respect to the economic hierarchy of society and the corresponding architectural responses and solutions.
- **Site Context and Analysis:**
  To understand and apply the information of site, its location, topography, scale, context – both- immediate and wider, and land-use and understand the potentials, challenges, future requirements of the site to take decisions about design brief development in terms of numbers and types of tenements, ground coverage, building height, density as well as decisions about zoning, circulation within site, distribution of built and open spaces, activity relationships and adjacencies, and views.
- **House Typology:**
  To evaluate various housing typologies and their suitability to the project at hand. To explore various adaptations of a typology, clustering possibilities, and resultant built form so as to create a housing design using the relevant explorations.

- **Traffic and vehicular movement:**
  To understand and apply ideas about networking, hierarchy of connectivity, pedestrian and vehicular movement within the site and surrounding larger area.

- **Building Material and Construction Technology:**
  To study and analyse the relevance of various building materials and technologies to a project, various expressions of a building material and technology relevant to the building and to understand the scope and limitations of a building technique to achieve the desired form and space.
- **Building Services:**
  To understand and apply the spatial and structural implications of basic and advanced services involved in building design.
- **Aesthetics:**
  Along with the challenges of physical issues, students are also expected to create a spatial and visual language for their project.
- **Rules and Regulations:**
  To understand and apply legislative aspects with reference to the housing context and setting of the project site (Building byelaws, GDCR, CRZ, EPA, ECBC, GRIHA etc.)

COURSE OUTLINE:

1. To design complex housing spaces and buildings in terms of area, user group, typology, function etc, with emphasis on scale or complexity of the project.
2. To understand and analyse housing in urban context, preferably in a different socio-cultural-economic setting than the institute and document the study in the form of a report with emphasis on relevant aspects like density, climate, social structure, culture, architectural typology, construction technology, urban fabric, economy, services, traffic movement, etc. or any other issues which need to be considered for envisaging a design project in totality.
3. To develop a building design program from not only client's or user's requirements but also in response to context specific factors like socio-economic, socio-cultural, environmental etc.
4. To understand the development of a design philosophy/narrative as a thought process in design.
5. To evolve projects that may be based on the current needs of the city and / or context responding to aspects like heritage and conservation, landscape and ecology, image, and identity, etc.
6. To analyse activities around the buildings within the housing projects/ neighbourhoods in relation with built form and open spaces, elements of landscape, pedestrian and vehicular movement and segregation, etc.
7. To analyse and understand the relationship between various typologies of units, their combinations, clustering, and resultant buildings with respect to privacy,

socio-cultural needs, built-form configuration, structural/ service efficiency, density, topography, climate, etc.

8. To design buildings integrating functions, structural system and services and understand its resultant effect on visual form / architectural character of building.
9. To understand various issues and aspects of sustainability, earthquake resistant construction, universal accessibility, etc. and understand how these may be integrated in the architectural design process.
10. To apply relevant legislative provisions (Building byelaws, GDCR, CRZ, EPA, ECBC, GRIHA etc.) to the design project.

SESSIONAL WORK

- **Unit 1:**
  Case studies and analysis of housing design typology as identified by the institute and the presentation of its findings.
- **Unit 2:**
  A well resolved and communicated architectural design for a multi-family, multi-typology residential development of 100 to 200 tenements evolving out of aspects like mixed-use development, development of communities, addressing issues of social stratification v/s inclusiveness, identification of target group/ end-user's requirements, relation of location/ land values on defining the housing product, typological innovations, context, green initiatives, etc.

DELIVERABLES

The design must be communicated through architectural drawing and graphics, two and three-dimensional sketches, models/ visualisation, and narrative. Emphasis shall be given to the preparation of self-explanatory drawings, as in an Architectural Competition.

It is recommended that:

- 3- or 4-unit types/ sizes be explored in the project.
- The student be able to demonstrate his/her understanding about building technology and spatial provision for services
- The student should be able to demonstrate his/her design response to climate, and an understanding of suitable Landscape ideas.

RECOMMENDED READINGS:

1. The Architecture of Rasem Badran: Narratives on People and Place. James Steele. Thames and Hudson. London, 2005.
2. The Housing Design Handbook: A Guide to Good Practice. David Levitt, Jo McCafferty. Routledge. London, 2019.
3. Atkins: Architecture and Urban Design. Atkins. Images Publishing Group. 2011.

4. Designing for Modern India. Vikram Bhat. Mapin Publishing Pvt Ltd. Ahmedabad, 2016.
5. Missing Middle Housing: Thinking Big and Building Small to Respond to Today's Housing Crisis. Daniel G. Parolek. Island Press. 2020.
6. Housing and Urbanisation. Charles Correa. UDRI. Mumbai, 2000.
7. Residential Districts. Jorg C Kirschenmann, 1980.
8. Wohnungsbau The Dwelling L' habitat. Herald Deilmann D, Jorg Kirschenmann, Herbert Pfeiffer. Stuttgart, 1974.
9. In the Name of Housing: A Study of 11 Projects in Mumbai. Sameep Padora (curator). UDRI. Mumbai, 2016.

ADVANCED BUILDING CONSTRUCTION AND SERVICES I		
Course Code	4201954 [SV]	
Teaching Scheme	Examination Scheme	
Total Contact Hours per week: 3 (Lecture: 1, Studio: 2)	Sessional (internal)	50
	Sessional (external)	50
	Viva (internal)	25
	Viva (external)	25
	In-semester exam	NIL
	End Semester exam	NIL
	Total Marks	150
	Total Credits	04

COURSE OBJECTIVES:

To educate students regarding implementation of advanced structural systems, materials and services required in buildings with complex and special requirements and enable the students to integrate the same in Architectural design.

COURSE OUTLINE:

- **Unit 1: Multi-basements**
  Designing and construction of multi-basements giving constructional details required for services lighting, mechanical ventilation and surface water disposal. Study of various methods of access to parking areas other than ramps like car lift etc.
  Assignment will be to prepare drawings based on above study which include application of all required services with total coordination of entire MEP services. [Minimum four A1 drawing sheets]
- **Unit 2: Swimming pools**
  Design and construction of swimming pools – leisure / competition types with situations such as, at ground / podium/upper / roof top level with reference to all constructional and services details. Assignment will be on the same. [Minimum two A1 drawings sheets]

- **Unit 3: Long span structures**
  Study of long span steel structures [indoor stadia, railway / metro stations, shopping malls, sky walks, Multi-functional building etc] to understand structural behaviour.
  Assignment would be in report form comprising of Case study and sketches of construction details.

OR

- **Unit 3: Industrial structures**
  Design and construction of medium scale industrial structures with reference to all architectural, constructional details.
  Assignment will be on the same. [Minimum two A1 drawings sheets]

RECOMMENDED READINGS:

1. Tricomi, Ernest. ABC of Air-conditioning.1970
2. Smith, Philips & Sweeney. Environmental Science
3. Daniels, Klaus. Advanced Building Systems – A Technical Guide for Architects and Engineers. Birkhauser, Boston. 2003
4. National Building Code of India ,5. PEB manufacturer's details Advanced Building Construction by MACKEY Stadia by John Geraint

URBAN STUDIES I		
Course Code	4201955 [SS]	
Teaching Scheme	Examination Scheme	
Total Contact Hours per week: 4 (Lectures: 2, Studio :2)	Sessional (internal)	50
	Sessional (external)	50
	Viva (internal)	NIL
	Viva (external)	NIL
	In-semester exam	NIL
	End Semester exam	NIL
	Total Marks	100
	Total Credits	03

COURSE OBJECTIVES:

- To enable students to understand the urban context of an Architectural Project beyond the site and understand the implications of various factors (such as traffic-transportation, socio economics, urban landscape, spatial and visual aspects etc.) influencing the development of an urban area.
- To introduce the students to urban studies and relevance of its learning in Architecture profession; various theories and concepts, facilitating the undertaking of planning and design of large-scale land development.

COURSE OUTLINE:

- **Unit 1**

The meaning of town planning, urban planning, urban design and context of architectural project beyond site; Principles and theories of Urban Planning and Urban Design and relevance in the context of globalization.

- **Unit 2**
  Various aspects of urban land. understand the implications of various factors such as traffic-transportation, socio- economic, urban landscape etc. influencing the development, rationale of urban regulatory controls.
- **Unit 3**
  Urban residential developments such as neighbourhood planning, high-rise housing, slum rehabilitation, public housing, town planning schemes etc.
- **Unit 4**
  Affordable housing: introduction and concepts; Contemporary problems of settlements, towns, cities impact of unplanned growth.

SUBMISSION REQUIREMENT FOR SESSIONAL WORK:

Handwritten journal based upon the theory syllabus as above.

ASSIGNMENTS:

1. Subdivision of land for residential development (approx. area 4Ha) –Individual submission (40 marks).
2. Study of housing typologies as mentioned in course outline, study of the same from urban planning and design perspective. - Case study in a group of maximum 5 students (30 Marks).
3. Two Tutorials based upon course outline (15marks each total 30 marks).

OUTCOME:

Students will develop a basic understanding of urban planning, urban design, studying urban planning principles and application of the same. Students will know about housing types, concerns & issues related to it and strategies to resolve issues.

RECOMMENDED READINGS:

1. Gallion, Arthur.The Urban Pattern. New Delhi: CBS Publishers and Disrtibuters, 2003
2. Bacon, Edmund. Design of Cities London: Thames and Hudson, 1974
3. Paddison, Ronan. Handbook of Urban Studies.London: sage Publications, 2001
4. Correa, Charles. Housing and Urbanisation. London: Thames and Hudson, 2000.
5. Mohanty , Swati. Slum in India. New Delhi:APH Publishing Corp.,2005.
6. Jagdale, Rohit. Slum Rehabilitation Schems in Mumbai. University of Texas 2014
7. Coordinates (is an exclusive monthly magazine on positioning, navigation, associated technologies, and applications.

8. Down to Earth (magazine edited by Sunita Narain)
9. My Liveable City (magazine co-founded by ShyamKhandekar& Shashikala Venkatraman)

RESEARCH IN ARCHITECTURE II		
Course Code	4201956 [SS]	
Teaching Scheme	Examination Scheme	
Total Contact Hours per week: 3 (Lecture: 1, Studio :2)	Sessional (internal)	25
	Sessional (external)	25
	Viva (internal)	NIL
	Viva (external)	NIL
	In-semester exam	NIL
	End Semester exam	NIL
	Total Marks	50
	Total Credits	02

COURSE OBJECTIVES:

- To enable students to carry out research focused on an issue related to the built environment
- To prepare students to write a technical research paper
- To train students to present their research paper in front of an audience

COURSE CONTENT:

- **Unit 1**
  Qualitative and Quantitative Data Collection and Analysis
- **Unit 2**
  Presentation of qualitative and quantitative data using various techniques (visual, graphical, numerical, etc.)
- **Unit 3**
  Technical Writing
- **Unit 4**
  Presentation of research paper in a seminar

SUBMISSION REQUIREMENT FOR SESSIONAL WORK:

- Tutorials/ Assignments based on each of the four units
- A Research Paper of minimum 3000 words (maximum 10 pages) excluding bibliography based on original research proposal prepared in Semester VI

NOTE:

- The guide must have minimum five years of teaching experience. The guide shall not guide preferably more than eight students.
- It is desirable that the research paper is presented in a seminar, in front of experts.

- It is beneficial to the students if the topic is related to their architectural design project.

RECOMMENDED READINGS:

1. Babbie, E. 1983. *The Practice of Social Research*. Third edition. Belmont: Wadsworth Publishing Co.
2. Creswell, J.W. 1994. *Research Design: Qualitative and Quantitative Approaches*. Thousand Oaks: Sage.
3. De Vaus, D.A. 2003. *Surveys in Social Research*. Jaipur: Rawat Publications.
4. Dey, I. 1993. *Qualitative Data Analysis: A User Friendly Guide for Social Scientists.* London: Routledge.
5. Groat, L. & Wang, D. 2002. *Architectural Research Methods.* New York: John Wiley and Sons Inc.
6. Kothari, C.R. 2005. *Research Methodology: Methods and Techniques.* New Delhi: Wishwa Prakashan.
7. Michelson, William. 1982. *Behavioural Methods in Environmental Design*. Stroudsburg, Pennsylvania: Dowden, Hutchinson and Ross, Inc.
8. Nachmias, C.F. & Nachmias, D. 1996. *Research Methods in Social Sciences*. Great Britain: St. Martin's Press Inc.
9. Patton, M.Q. 1980. Qualitative Evaluation Methods. Newbury Park: Sage Publications.
10. Sanoff, H. 1977. *Methods of Architectural Programming*. Vol. 29. Dowden Huthinson and Ross, Inc.
11. Sanoff, H. 1991. *Visual Research Methods in Design*. USA: Routledge Revivals.
12. *** Research papers published in journals from UGC-CARE list may be referred for understanding the overall structure and style of technical writing.*

ELECTIVE III		
Course Code	5201970 [SS]	
Teaching Scheme	Examination Scheme	
Total Contact Hours per week: 4 (Lecture: 1, Studio :3)	Sessional (internal)	50
	Sessional (external)	50
	Viva (internal)	NIL
	Viva (external)	NIL
	In-semester exam	NIL
	End Semester exam	NIL
	Total Marks	100
	Total Credits	03

COURSE OBJECTIVES

To allow the students to study a subject of their interest and develop theoretical as well as practical understanding of the same

As mentioned in the course structure of 2019 pattern syllabus [Appendix B] a student may adhere to a particular stream of elective of his/her choice and nurture his/her area of interest and develop his/her expertise.

However, colleges have to ensure that the student does not repeat a particular elective.

COURSE OUTLINE:

Colleges have to develop course outline for the elective they wish to offer such that theoretical as well as practical aspects are covered linking them to the field of architecture.

Apart from lectures delivered by the subject resource persons, self-study in form of hands-on workshop / field work/ review of literature / seminar or any suitable format of learning may be adopted.

SESSIONAL WORK:

The submission to be devised by the colleges in form suitable to the elective offered. The format could be [but not limited to] as following.

- Field study reports
- Mapping / documentation / photographic / video graphic documentation
- Measured drawings
- Computer based assignments
- Tutorials

QUANTITY SURVEYING & SPECIFICATION WRITING I		
Course Code	4201958 [THEORY]	
Teaching Scheme	Examination Scheme	
Total Contact Hours per week: 4 (Lectures: 2, Studio :2)	Sessional Viva	NIL
	In-semester exam	30
	End Semester exam	70
	Total Marks	100
	Total Credits	03

COURSE OBJECTIVES:

- To Introduce Estimation as an important Subject for Architecture.
- To Understand Different methods of Computing Quantities for items of work in a structure.
- To acquaint students with methodology of writing specifications with reference to building trades, materials, workmanship & performance of different items of work.

COURSE OUTLINE:

- To enable students in working out quantities of various items of work for simple load bearing and R.C.C. framed structure and acquaint them with various types of estimates including standard method of measurement on building works and mode of measurements as adopted by I.S 1200.
- Techniques, Importance & methods of writing different types of specifications of different items of works in construction

- **Unit 1: Introduction to Quantity Surveying**
  Introduction to Quantity Surveying and Estimating, Data for Estimate, Purpose of Estimating, Accompaniments of an Estimate, Qualities of an Estimator, Terminologies in estimation. Different types of Estimate their uses & Characteristics, Schedule of Quantities, Schedule of Rates & its uses, Stages of work, Complete Estimate of a Project, Methods of taking out Quantities, Measurement Sheet, Abstract Sheet, Bill of Quantities.
- **Unit 2: Introduction to Specification**
  Definition, need & importance of Specification writing. Relation with working drawing, bill of quantities, schedule of rates. Specification as a integral part of contract document. Types and Classification of Specifications. Use of manufacturers guide (With emphasize on Market survey)
- **Unit 3: IS Code**
  Study of mode of measurement as stipulated in IS-1200, Classification of strata as per IS-1200, Trial pit data, Lift and Leads , Unit of Measurement.
- **Unit 4: Working out quantities for Load-bearing structure**
  Working out quantities for load bearing structure (below plinth only) of approximately 15-30 Sqm by offset and centre-line method illustrating L and T junctions and preparing measurement sheet and abstract for all items of work.
- **Unit 5: Working out quantities for RCC structure**
  Working out quantities for R.C.C. G+1 structure of approximately 100-150 sqm, along with quantities for plumbing and sanitation items and preparing measurement sheet and abstract for all items of work.
- **Unit 6: Specification writing (Workmanship)**
  Item-wise detailed specifications including methods. Forms of writing descriptive notes on material and workmanship based on working drawing

RECOMMENDED READINGS:

1. B.I.S 1200- Part-I 1992. n.d.
2. Prof. B.N. Dutta, Estimating and Costing in Civil Engineering.
3. B. S. Patil. Civil Engineering Contracts and Estimates.
4. Dr. Roshan Namavati. Professional Practice.
5. Rangawala. Estimating Costing and Valuation.
6. Indian Standard specifications
7. C.P.W.D. Specifications and schedule of rates

8. Specification Writing for Architects & Engineers, By Donald A. Watson
9. Specification Writing for Architects & Surveyors, By Arthur J. Wills
10. Estimating, Costing, Specification & Valuation, By M. Chakraborty
11. Reference drawings from offices of MEP consultants

PROFESSIONAL PRACTICE		
Course Code	4201959 [THEORY]	
Teaching Scheme	Examination Scheme	
Total Contact Hours per week: 3 (Lectures: 2, Studio :1)	Sessional Viva	NIL
	In-semester exam	30
	End Semester exam	70
	Total Marks	100
	Total Credits	03

COURSE OBJECTIVE:

- To acquaint the student with the role & stature of the Architect in the society and understand duties, liabilities, responsibilities & ethics as a professional.
- To acquaint the student with the scope & avenues of Professional Architectural services and the demands & mode of Professional Practice field.
- To familiarize & prepare the student with the adequate knowledge of an Architect's office administration, documentation, banking, taxation & other procedures of office along with the Laws applicable to Architects.
- To familiarize the student with the Council of Architecture, Architect's Act, Architectural competitions & other allied professional organizations.

COURSE CONTENT:

- **Unit 1**
  Introduction to the nature, scope and avenues of service and **professional practice as an Architect**, Role of an Architect as a **technical professional**. Illustrate the changing nature of the Architects.
- **Unit 2:**
  The Architects Act 1972, The Council of Architecture, its composition, legal status, and mandate for to Registration of Architects and for monitoring the Academics and Profession of Architecture, Rules and Regulations of the Council regarding Professional Liabilities & Code of Conduct. Introduction to Architectural Competitions, its Pros and Cons, Rules and Regulations as per Council of Architecture
- **Unit 3**
  Avenues of professional service and mode & nature of professional practice - Types of Organizations, Scope of comprehensive Services, Scale of Fees, and Site supervision, Documentation, Introduction to Office Management, & International practice.
- **Unit 4**

Taxation (Income tax, Goods & Service Tax and Professional tax), Banking, Insurance, and laws applicable to architects.

Unit 5

Introduction to the Role and Legal duties of Architects in Arbitration and Valuation.

Unit 6

Introduction to IIA, IIID, IUDI, ITPI, ISOLA and such professional organizations. Understanding the need for Architects to be aware, sensitive and active in Social and Civic issues in Urban context.

RECOMMENDED READINGS:

1. Latest published Handbook of Professional Document: Council of Architecture Publication
2. The Architect's Act, 1972: Govt. of India Publication
3. Professional Practice by Roshan H. Namawati
4. Professional Practice in India by Madhav G. Deobhakta
5. Architectural Practice & Procedure by Vasant S. Apte

SEMESTER VIII

ARCHITECTURAL DESIGN VII		
Course Code	4201960 [SV]	
Teaching Scheme	Examination Scheme	
Total Contact Hours per week: 8 (Lectures: 1, Studio: 7)	Sessional [CIA125+EA125] Viva [INT 25+ EXT 25]	250 50
	In-semester exam	NIL
	End Semester exam	NIL
	Total Marks	300
	Total Credits	11

COURSE OBJECTIVE

To develop architectural interventions as part of a process to understand complex issues of an urban context, generating design brief and taking design decisions based on the following aspects:

- **Precedent Studies:**
  To introduce the students to Urban spaces from cases, referral, live studies through the process of observation, survey and, documentation and evaluate them for gaining a design approach.
- **Socio-Cultural Aspects**:
  To evaluate socio-cultural aspects like lifestyle, cultural beliefs and practices, traditions, and their effect on urban spaces and architectural design etc.
- **Site Context and Analysis**:
  To understand and apply information about the site, its scale, location, topography, context- both, immediate and wider, and complexity of existing functions, and understand the potentials, challenges, and future requirements of the site to take decisions of design-brief development in terms of types of buildings in urban complexes, multiple functions, multifunctional space typologies, area requirements, as well as decisions about zoning, circulation, distribution of built and open spaces, activity relationships and adjacencies, and views.
- **Traffic and vehicular movement**:
  To understand and apply ideas about networking, hierarchy of connectivity, pedestrian and vehicular movements within the masterplan and the surrounding context of site.
- **Building Material and Construction Technology:**

To analyze and evaluate the relevance of various building materials and technologies to a project, various expressions of a building material and technology relevant to the building and to understand the scope and limitations of a building technique to achieve the desired form and space.

- **Building Services:**
  To understand and apply the spatial and structural implications of basic and advanced services involved in building design.
- **Aesthetics:**
  Along with the challenges of physical issues, students are also expected to create a spatial and visual language for their project.
- **Rules and Regulations**:
  To understand and apply relevant legislative aspects governing building design with reference to the urban context and setting of the site (Building byelaws, GDCR, CRZ, EPA, ECBC, GRIHA etc.)

COURSE OUTLINE:

1. To design complex urban spaces and buildings **(*other than housing*)** in terms of area, function, specific community, typology, context etc, with emphasis on scale and / or complexity of the project.
2. To understand and analyse a location in an urban context, preferably in a different socio-cultural-economic setting than that of the institute and document the study in the form of a report with emphasis on relevant aspects like climate, social structure, culture, architectural typology, construction technology, urban fabric, economy, services, traffic movement, etc. or any other issues which need to be considered for envisaging a design project therein in totality.
3. To evolve projects that may be based on the current needs of the city and / or context responding to aspects like heritage and conservation, landscape and ecology, image and identity, etc.
4. To develop a building design program from not only client or user's requirements but also in response to context specific factors like socio-economic, socio-cultural, environmental etc.
5. To understand the development of a design philosophy/narrative as a thought process in design.
6. To analyse activities around the buildings within a complex/ campus and understand the same in context of the built form and open spaces, elements of landscape, pedestrian and vehicular movement, their segregation, managing sloping sites, contours, etc.
7. To analyse and understand the relationship between multiple (existing and/or proposed) buildings to establish continuity of form, construction, materials, design theme, climate, etc.
8. To design buildings integrating functions, structural system, and services and their resultant effect on visual form / architectural character of building.

9. To understand various issues and aspects of sustainability, earthquake resistant construction, universal accessibility, etc. and understand how these may be integrated in the architectural design process.
10. To apply relevant legislative provisions (Building byelaws, GDCR, CRZ, EPA, ECBC, GRIHA etc.) to the design project.

SESSIONAL WORK - ONE OF THE TWO OPTIONS
PROJECT TYPE 1

- **Unit 1:**
  Identification and analysis of issues related to various aspects mentioned above including mobility, networks, inclusiveness, built-form disposition, architectural character, identity, activities, community participation, etc. at an urban neighbourhood level of area **(*other than housing*)** @ 2-3 hectares with an aim to evolve a design brief and a design solution including a neighbourhood level master- plan and/or intervention guidelines in the context for the same.
    - The Architectural project should evolve from the study of the Area and be an outcome of issues identified, Development Plan proposals for the area if any and a subset of the overall Master Plan for the Area.
- **Unit 2:**
  A well resolved and communicated architectural design of a component/s of the neighbourhood studied as mentioned in Unit 1 above, with a total carpet area of not less than 6000 sqm and not more than 20000 sqm area of Functional Space depending on context and complexity of the project.

OR
PROJECT TYPE 2

- **Unit 1:**
  Study of an urban area **(*other than housing*)** including aspects like mobility, movement networks, built form disposition, character, identity, activities, open space networks, walkability, inclusiveness, etc. as relevant to the area selected and the design brief proposed as in Unit 2 below.
- **Unit 2:**
  Development of Master Plan area of 2- 3 Ha in a group of three students maximum.
- **Unit 3:**
  Development of Design proposals individually for the area of any and a subset of the overall Master Plan.
    - A well resolved and communicated architectural design for a multi-functional building complex or a specialty building of a total carpet area not less than 6000 sqm and not more than 20000 sqm in an urban context with substantial complexity addressing Issues of architectural character, identity, built form, contextuality, structural system, advanced

services, green initiatives, landscape integration, traffic management, etc.

- Suggested typologies may include but not limited to: Healthcare facility, Educational Institution, 5 Star Hotel, Convention Centre, Multimodal Transport Hub, shopping mall and Multiplex, Redevelopment Project etc.
- An understanding of the project's impact on the surrounding area and vice-versa is suggested.

DELIVERABLES

The design must be communicated through architectural drawings and graphics, two and three-dimensional sketches, models/ visualization, and narrative. Emphasis shall be given to the preparation of self-explanatory drawings, Master Plan for the Area, Designing of Multiple user spaces, Imageability and Identity, Structural Details and Services as in an Architectural Competition.

RECOMMENDED READINGS:

1. All available books on Architectural Design.

ADVANCED BUILDING CONSTRUCTION AND SERVICES I		
Course Code	4201961 [SV]	
Teaching Scheme	Examination Scheme	
Total Contact Hours per week: 3 (Lecture: 1, Studio: 2)	Sessional (internal)	50
	Sessional (external)	50
	Viva (internal)	25
	Viva (external)	25
	In-semester exam	NIL
	End Semester exam	NIL
	Total Marks	150
	Total Credits	04

COURSE OBJECTIVES:

To help students to understand advanced structural systems, materials and services required in buildings with complex and very specific requirements. Students should be able to comprehend the special requirements of high rise or multi storied and modern buildings and be able to integrate the same in design.

COURSE OUTLINE

- **Unit 1: Auditoriums / Multiplex**

Design and construction of Auditorium (minimum capacity 350 with provision of a balcony and projector room in case of multiplex) along with required services.

Assignment will be on preparing of drawings containing plans and sections, showing all services and constructional details [minimum four A1 drawing sheets]

- **Unit 2: Building elements & Elevation treatments**

  Construction and architectural details of Building elements of design projects (previous semester/ previous year) For example—pergola, porches, atriums, façade, curtain wall, podium (with different use such as parking / landscape) etc.

  Assignment will be based on preparing of drawings with complete details. [Minimum three A1 size drawing sheets].

- **Unit 3: High rise buildings.**

  Introduction to construction of high-rise buildings with RCC as a material. Study of Council Norms with NBC Rules & analysis of structural system behaviour in high rise / super high-rise structures under different loading conditions.

  Assignment will be in form of compiled notes and sketches.

OR

- **Unit 3: Industrial structures**

  Design and construction of medium scale industrial structures with reference to all services details. Assignment will be on the same. [Minimum two A1 drawings sheets]

RECOMMENDED READINGS:

1. Tricomi, Ernest. ABC of Air-conditioning.1970
2. Smith, Philips & Sweeney. Environmental Science
3. Daniels, Klaus. Advanced Building Systems – A Technical Guide for Architects and Engineers. Birkhauser, Boston. 2003 4. National Building Code of India
4. Advance building construction by MACKEY High Rise Buildings by Jaswant Mehta Theatres and Auditoriums by Harold Burris- Meyer & Edward Cole. Architects Working Details

URBAN STUDIES II		
Course Code	4201962 [SS]	
Teaching Scheme	Examination Scheme	
Total Contact Hours per week: 4 (Lectures: 2, Studio :2)	Sessional (internal)	50
	Sessional (external)	50
	Viva (internal)	NIL
	Viva (external)	NIL
	In-semester exam	NIL
	End Semester exam	NIL
	Total Marks	100
	Total Credits	03

COURSE OBJECTIVES:

- To introduce the students to the process of planning and urban development and associated legislation.
- To understand the fundamental concepts and theories of urban design and apply them in their design projects.
- To introduce the students to urban economics.

COURSE OUTLINE:

- **Unit 1**
  Study of planning process in detail --- (Survey, analysis, proposals and development) for various urban issues. A brief introduction to urban renewal and re-development; study and analysis of urban spaces, people centric designs etc.
- **Unit 2**
  Conservation and related Urban Design controls.
- **Unit 3**
  Planning and Urban Design legislation --- introduction and relevance.
  Unified Building bye laws and Development Control rules of local authorities.
- **Unit 4**
  Urban economics: introduction and concepts (demand and supply, housing finance, Government schemes and various bodies) etc.

SUBMISSION REQUIREMENT FOR SESSIONAL WORK:

Handwritten journal based upon the theory syllabus as above.

ASSIGNMENTS

1. Reading of Urban fabric: Study of existing town and town planning proposals for municipal council level town– (group work in a group of 5 students) (40 marks).
2. Identification of urban issues related to various aspects such as environment, society, traffic and transportation, hills and hill slopes, riverfront development,

urban heritage conservation through primary surveys (group work in a group of 5 students) (30 marks) –

3. Two Tutorial based upon course outline (15marks each total 30 marks).

OUTCOME

Students will develop a basic understanding Planning and Urban Design legislation; studying planning process, survey, and application of the same to know about issues like urban economics, transportation.

RECOMMENDED READINGS:

1. Gallion, Arthur.The Urban Pattern. New Delhi: CBS Publishers and Disrtibuters, 2003
2. Bacon, Edmund. Design of Cities London: Thames and Hudson, 1974
3. Paddison, Ronan. Handbook of Urban Studies.London: sage Publications, 2001
4. Spreriegen, Paul. Urban Design: The Architecture of Town and Cities.
5. Malabar,FL-USAKrieger Publishing Co., 1967 Lynch, Kevin. The Image of The City London: The MIT Press, 1960
6. Book of Development Control Regulations by Local Municipal Corporation (latest edition available)
7. Book of AITP Exam study material: 'Planning Law and Legislation' by ITPI New Delhi Guide to Planning Surveys including Landuse Classification: TCPO, Govt of India: 2004
8. Correa, Charles. Housing and Urbanisation. London: Thames and Hudson, 2000.
9. Howard, Ebenezer. Garden Cities of Tomorrow, 1902
10. Maharashtra Regional and Town Planning Act, 1966
11. Traffic and Transportation Planning by L.R. Kadiali
12. Coordinates (is an exclusive monthly magazine on positioning, navigation, associated technologies and applications.
13. Down to Earth (magazine edited by Sunita Narain)
14. My Liveable City (magazine co-founded by Shyam Khandekar& Shashikala Venkatraman)

ELECTIVE IV		
Course Code	4201963 [SS]	
Teaching Scheme	Examination Scheme	
Total Contact Hours per week: 3 (Lecture: 1, Studio :2)	Sessional (internal)	25
	Sessional (external)	25
	Viva (internal)	NIL
	Viva (external)	NIL
	In-semester exam	NIL
	End Semester exam	NIL
	Total Marks	50
	Total Credits	02

COURSE OBJECTIVES

To allow the students to study a subject of their interest and develop theoretical as well as practical understanding of the same

As mentioned in the course structure of 2019 pattern syllabus [Appendix B] a student may adhere to a particular stream of elective of his/her choice and nurture his/her area of interest and develop his/her expertise.

However, colleges have to ensure that the student does not repeat a particular elective.

COURSE OUTLINE:

Colleges have to develop course outline for the elective they wish to offer such that theoretical as well as practical aspects are covered linking them to the field of architecture.

Apart from lectures delivered by the subject resource persons, self-study in form of hands-on workshop / field work/ review of literature / seminar or any suitable format of learning may be adopted.

SESSIONAL WORK:

The submission to be devised by the colleges in form suitable to the elective offered. The format could be [but not limited to] as following.

- Field study reports
- Mapping / documentation / photographic / video graphic documentation
- Measured drawings
- Computer based assignments
- Tutorials

ELECTIVE V		
Course Code	4201964 [SS]	
Teaching Scheme	Examination Scheme	
Total Contact Hours per week: 3 (Lecture: 1, Studio :2)	Sessional (internal)	25
	Sessional (external)	25
	Viva (internal)	NIL
	Viva (external)	NIL
	In-semester exam	NIL
	End Semester exam	NIL
	Total Marks	50
	Total Credits	02

COURSE OBJECTIVES

To allow the students to study a subject of their interest and develop theoretical as well as practical understanding of the same

As mentioned in the course structure of 2019 pattern syllabus [Appendix B] a student may adhere to a particular stream of elective of his/her choice and nurture his/her area of interest and develop his/her expertise.

However, colleges have to ensure that the student does not repeat a particular elective.

COURSE OUTLINE:

Colleges have to develop course outline for the elective they wish to offer such that theoretical as well as practical aspects are covered linking them to the field of architecture.

Apart from lectures delivered by the subject resource persons, self-study in form of hands-on workshop / field work/ review of literature / seminar or any suitable format of learning may be adopted.

SESSIONAL WORK:

The submission to be devised by the colleges in form suitable to the elective offered. The format could be [but not limited to] as following.

- Field study reports
- Mapping / documentation / photographic / video graphic documentation
- Measured drawings
- Computer based assignments
- Tutorials

QUANTITY SURVEYING & SPECIFICATION WRITING II		
Course Code	4201965 [THEORY]	
Teaching Scheme	Examination Scheme	
Total Contact Hours per week: 4 (Lectures: 2, Studio :2)	Sessional Viva	NIL
	In-semester exam	30
	End Semester exam	70
	Total Marks	100
	Total Credits	03

COURSE OBJECTIVES:

- To enable students in preparation of rate analysis & indent preparation along with the concepts.
- To enable students in working out quantities of various items of work for an Industrial structure
- To acquaint students with methodology of writing specifications with reference to service installations of different items of work in construction.
- To enable students in different building trades & content, checklist.

COURSE OUTLINE:

- **Unit 1: Rate Analysis**
  Introduction to Analysis of Rate, Factors affecting Rate of any Item of work, Importance of Rate Analysis, Essentials of Rate Analysis. Studying and Working out rate Analysis of standard items of work based on prevailing market rates. (Minimum 20 numbers)
- **Unit 2: Building trades & checklist**
  Different Building trades scope & contents. Checklist preparations for different works in constructions.
- **Unit 3: Indent of materials:**
  Unit Rate, Direct Cost, Indirect Cost, Overhead Charges, Day Work, Task Work, Piece work, Indent of Material, preparation of Indent of Material of standard items of work based on prevailing market rates. (Minimum 20 numbers)
- **Unit 4: Working out quantities for Steel Structures**
  Working out quantities for Industrial structure of approximately 200-300 sqm with steel Truss and sheet roofing and preparing measurement sheet and abstract for all items of work. (Including footing)
- **Unit 5: Specification for Building Services:**
  - Water Supply & Drainage,
  - Acoustics,
  - Electrification,
  - HVAC installation
- **Unit 6: Broad outline specification for miscellaneous service installations**
  - Communication systems- elevators, escalators

- Fire fighting
- Accessibility- arrangements for disabled persons

RECOMMENDED READINGS:

1. B.I.S 1200- Part-I 1992. n.d.
2. Prof. B.N. Dutta, Estimating and Costing in Civil Engineering.
3. B.S.Patil. Civil Engineering Contracts and Estimates.
4. Dr. Roshan Namavati. Professional Practice.
5. Rangawala. Estimating Costing and Valuation.
6. Indian Standard specifications
7. C.P.W.D. Specifications and schedule of rates
8. Specification Writing for Architects & Engineers, By Donald A. Watson
9. Specification Writing for Architects & Surveyors, By Arthur J. Wills
10. Estimating, Costing, Specification & Valuation, By M. Chakraborty
11. Reference drawings from offices of MEP consultants

PROJECT MANAGEMENT		
Course Code	4201966 [THEORY]	
Teaching Scheme	Examination Scheme	
Total Contact Hours per week: 3 (Lectures: 2, Studio :1)	Sessional Viva	NIL
	In-semester exam	30
	End Semester exam	70
	Total Marks	100
	Total Credits	03

COURSE OBJECTIVE

- Students need to understand reality of modern-day Project environment which is getting more complex and more collaborative due to ever demanding requirements of creative and unique design concepts and importance of Project Management to manage this dynamic environment
- Introducing to the students “Management Concepts “and the Role of an Architect as Project Manager in executing a project from conceptualization, design stage through the documentation and construction stage.
- This course will be an introduction to basics of Project Management framework and Knowledge areas giving glimpses on best practices to manage collaborative project environment and roles and responsibilities of various stakeholders of Project and how Project manager leads to successful project completion within cost and time and meets or exceeds project quality standards.

COURSE OUTLINE

- **Unit 1: Introduction Project and Project environment**

Project and Project Environment. Traditional organization structure vs modern project management structure, Importance of Project Manager & role of an Architect as a Project Manager who integrates everyone. Collaborative project environment with multiple stakeholders and need to manage. PMBOK Environment, Concept of Project- Program- Portfolio and Processes / Policies / Procedures to manage these project environments.

- **Unit 2: Project Phases and Stages**
  Importance of Project Phase: Concept and Feasibility, Planning and Design, Construction and Close-out and within each phase of project role of key processes – Initiating, Planning, Execution, Control & Monitoring and Close-out. Difference between Project Management and Construction Management.
- **Unit 3: Tenders and Contracts**
  Definition and Types of tenders, Systems of Tendering - Open and Invited, Process of tendering. Tenders - Pre-Qualification and Empanelment procedures - Selection of Contractors. Tender documents, Terms of Reference - Specifications - Bill of Quantities - Billing, Introduction to Contracts - Articles of Agreement and Conditions of Contract (IIA document)
- **Unit 4: Project Management Knowledge Areas Part 1**
  Key concept introduction to various knowledge areas as defined in PMBOK to understand how various knowledge areas work in relationship with each other. Knowledge areas Integration management, Scope management, Schedule management, Cost management, Quality management
- **Unit 5: Project Management Knowledge Areas**
  Resource management, Communication management, Risk management, Procurement management and Stakeholder management. Awareness and Introduction to Computer applications for effective Project Management.
- **Unit VI : Specialized Project Management Themes**
  Importance of specialized themes in additional to knowledge areas: Project Finance management, Construction Safety management, Facilities management, Design management. Awareness and Introduction to Computer applications for effective Project Management. (not to be included for SPPU examinations)

COURSE SPECIFIC OUTCOMES

After completing this course student will be exposed to basic key concepts of Project Management and its importance in managing Project. The student should be competent enough to handle and manage a small-scale project from conceptualization to completion (hand over).

Subject knowledge gain may help few of the students to pursue master's education in the field of Project Management.

RECOMMENDED READINGS:

1. PMBOK by PMI

2. Design management for Architects - by Stephen Emmitt
3. Project Management Concepts, Methods, and Techniques - by Claude H. Maley · 2012
4. Construction Project Management Planning, Scheduling and Controlling – by Chitakara.
5. Reference drawings and reports from offices of projects to understand the concepts.