RAMAIAH
Institute of Technology

CURRICULUM

Outcome Based Education

(Effective from the Academic Year 2026- 2027)

SCHOOL OF ARCHITECTURE

IX & X SEMESTER B.ARCH

Batch- 2022

RAMAIAH INSTITUTE OF TECHNOLOGY
(Autonomous Institute, Affiliated to VTU)
Bangalore- 560054

CURRICULUM

About the Institute:

Dr. M. S. Ramaiah a philanthropist, founded ‘Gokula Education Foundation’ in 1962 with an objective of serving the society. M S Ramaiah Institute of Technology (MSRIT) was established under the aegis of this foundation in the same year, creating a landmark in technical education in India. MSRIT offers 18 UG programs and 15 PG programs. All these programs are approved by AICTE. All eligible UG and PG programs are accredited by National Board of Accreditation (NBA). The institute is accredited with ‘A + ’ grade by NAAC in March 2021 for 5 years. University Grants Commission (UGC) & Visvesvaraya Technological University (VTU) have conferred Autonomous Status to MSRIT for both UG and PG Programs since 2007. The institute has also been conferred autonomous status for Ph.D. program since 2021. The institute is a participant to the Technical Education Quality Improvement Program (TEQIP), an initiative of the Government of India. The institute has 380 competent faculty out of which 70% are doctorates. Some of the distinguished features of MSRIT are: State of the art laboratories, individual computing facility for all faculty members, all research departments active with sponsored funded projects and more than 300 scholars pursuing Ph.D. To promote research culture, the institute has established Centre of Excellence for Imaging Technologies, Centre for Advanced Materials Technology, Centre for Antennas and Radio Frequency systems (CARFS), Center for Cyber Physical Systems, Schneider Centre of Excellence & Centre for Bio and Energy Materials Innovation.

The Entrepreneurship Development Cell (EDC) and “Ramaiah Evolute” have been set up on campus to incubate startups. MSRIT has a strong Placement and Training department with a committed team, a good Mentoring/Proctorial system, a fully equipped Sports department, large air-conditioned library with good collection of book volumes and subscription to International and National Journals. The Digital Library subscribes to online e-journals from Elsevier Science Direct, IEEE, Taylor & Francis, Springer Link, etc. The Institute is a member of DELNET, CMTI and VTU E-Library Consortium. The Institute has a modern auditorium, recording studio, and several hi-tech conference halls with video conferencing facilities. The institute has excellent hostel facilities for boys and girls. MSRIT Alumni have distinguished themselves by occupying high positions in India and abroad and are in touch with the institute through an active Alumni Association.

As per the National Institutional Ranking Framework (NIRF), MoE, Government of India, M S Ramaiah Institute of Technology has achieved 75th rank among 1584 top Engineering Institutions and 31st Rank among 131 Schools of Architecture in India for the year 2025

SCHOOL OF ARCHITECTURE

Established in 1992, the School of Architecture at Ramaiah Institute of Technology (RIT), Bengaluru, is committed to excellence in architectural education, design and research. The School provides a contemporary, interdisciplinary learning environment that integrates architectural design, building technology, sustainability, digital tools and professional exposure, preparing students to respond creatively and responsibly to the evolving built environment.

The School functions under Ramaiah Institute of Technology, an autonomous institution affiliated to Visvesvaraya Technological University (VTU), Belagavi. Its programmes are approved by the Council of Architecture (CoA), New Delhi, the statutory regulator for architectural education under the Architects Act, 1972. Teaching is design-led and is supported by site studies, workshops, industry interaction, research and experiential learning that develop critical thinking in architecture and allied disciplines.

Ramaiah Institute of Technology is accredited by the National Assessment and Accreditation Council (NAAC) with an A+ grade and is ranked 31st in the NIRF 2025 Architecture and Planning category.

The School offers a five-year Bachelor of Architecture (B.Arch.) programme with a sanctioned intake of 80, and two postgraduate programmes of two years' duration, Master of Architecture (Landscape Architecture) and Master of Architecture (Advanced Architecture), each with a sanctioned intake of 20. The School also offers a Ph.D. programme to support advanced research and scholarly inquiry in architecture. Together, the programmes engage with architectural design, sustainable practice, landscape and ecological systems, advanced and digital technologies, and contemporary architectural research.

The School's faculty comprises academicians, practising architects and specialists from allied disciplines. Their combined teaching, research and professional experience links theory, design and practice. Faculty support student development through mentoring, studio-based and innovative pedagogy, research projects and professional collaborations.

Students build a foundation in design thinking, technical knowledge, digital tools, sustainability, research and professional practice through studio work, hands-on learning, site exposure and interaction with practising professionals. The curriculum develops creativity, critical thinking, problem-solving and communication skills. Graduates pursue careers in architectural practice, urban design, landscape architecture, interior design, conservation, sustainable and computational design, project management, academia, research and consultancy, as well as entrepreneurship and advanced studies in India and abroad.

Through its combination of design, research and professional engagement, the School aims to develop architects and design professionals equipped to shape a responsive, resilient and future-ready built environment.

VISION OF THE INSTITUTE

To be an Institution of International Eminence, renowned for imparting quality technical education, cutting edge research and innovation to meet global socio-economic needs.

MISSION OF THE INSTITUTE

MSRIT shall meet the global socio-economic needs through -

1. Imparting quality technical education by nurturing a conducive learning environment through continuous improvement and customization.
2. Establishing research clusters in emerging areas in collaboration with globally reputed organizations.
3. Establishing innovative skills development, techno-entrepreneurial activities and consultancy for socio-economic needs.

QUALITY POLICY

We at MS Ramaiah Institute of Technology strive to deliver comprehensive, continually enhanced, global quality technical and management education through an established Quality Management System complemented by the synergistic interaction of the stakeholders concerned.

VISION OF THE DEPARTMENT

To be a leading centre of architectural education that nurtures creative and critical thinkers committed to shaping sustainable, inclusive and innovative built environments.

MISSION OF THE DEPARTMENT

MSRIT shall meet the global socio-economic needs through -

1. To impart design excellence by fostering creativity and critical thinking through studio-based learning supported by contemporary technology.
2. To inculcate sustainability, social responsibility, ethical values and a global outlook in the design and practice of architecture.
3. To develop professionally competent and entrepreneurial architects through interdisciplinary learning and real-world industry exposure.

PROGRAM EDUCATIONAL OBJECTIVES (PEOs):

PEO1 Graduates will be able to create architecture of design excellence that is critically informed, applying emerging digital and computational technologies.

PEO2 Graduates will be able to deliver sustainable, socially responsible and ethically grounded built environments, with a global outlook rooted in the climatic and cultural context.

PEO3 Graduates will practice as competent professionals and collaborate effectively with architects and allied professionals.

PEO4 Graduates will pursue lifelong learning, research or higher studies and lead innovation and entrepreneurial ventures responsive to emerging societal needs.

KNOWLEDGE AND ATTITUDE PROFILE (WK)

WK1: A systematic, theory-based understanding of the natural sciences applicable to the discipline and awareness of relevant social sciences.

WK2: Conceptually-based mathematics, numerical analysis, data analysis, statistics and formal aspects of computer and information science to support detailed analysis and modelling applicable to the discipline.

WK3: A systematic, theory-based formulation of engineering fundamentals required in the engineering discipline.

WK4: Engineering specialist knowledge that provides theoretical frameworks and bodies of knowledge for the accepted practice areas in the engineering discipline; much is at the forefront of the discipline.

WK5: Knowledge, including efficient resource use, environmental impacts, whole-life cost, reuse of resources, net zero carbon, and similar concepts, that supports engineering design and operations in a practice area.

WK6: Knowledge of engineering practice (technology) in the practice areas in the engineering discipline.

WK7: Knowledge of the role of engineering in society and identified issues in engineering practice in the discipline, such as the professional responsibility of an engineer to public safety and sustainable development.

WK8: Engagement with selected knowledge in the current research literature of the discipline, awareness of the power of critical thinking and creative approaches to evaluate emerging issues.

WK9: Ethics, inclusive behavior and conduct. Knowledge of professional ethics, responsibilities, and norms of engineering practice. Awareness of the need for diversity by reason of ethnicity, gender, age, physical ability etc. with mutual understanding and respect, and of inclusive attitudes.

PROGRAM OUTCOMES (POs):

On completion of 5 year B.Arch. Degree program, Bachelor of Architecture graduates will be able to:

PO1: Ability to create architectural designs that satisfy both aesthetic and technical requirements.

PO2: Adequate knowledge of the histories and theories of architecture and the related arts, technologies and human sciences.

PO3: Knowledge of the fine arts as an influence on the quality of architectural design.

PO4: Adequate knowledge of urban design, planning and the skills involved in the planning process.

PO5: Understanding of the relationship between people and buildings, and between buildings and their environment, and the need to relate buildings and the spaces between them to human needs and scale

PO6: Understanding of the profession of architecture and the role of the architect in society, in particular in preparing briefs that take account of social factors.

PO7: Understanding of the methods of investigation and preparation of the brief for a design project.

PO8: Understanding of the structural design, constructional and engineering problems associated with building design.

PO9: Adequate knowledge of physical problems and technologies and the function of buildings so as to provide them with internal conditions of comfort and protection against the climate

PO10: The necessary design skills to meet building users' requirements within the constraints imposed by cost factors and building regulations.

PO11: Adequate knowledge of the industries, organizations, regulations and procedures involved in translating design concepts into buildings and integrating plans into overall planning.

PROGRAM SPECIFIC OUTCOMES (PSOs):

PSO1: Apply interdisciplinary knowledge of art, science, materials, and environmental technologies to design and develop architectural projects that are sustainable, context-sensitive, and aligned with ecological and functional needs.

PSO2: Identify, formulate, and address complex challenges in the industrial and service sector through sustainable design strategies, while critically evaluating their societal, cultural, and global impacts.

PSO3: Demonstrate ethical and professional responsibility in leading sustainable project planning and construction management, using innovative tools and technologies to realize inclusive, resilient, and low-impact built environmen

Semester-wise Credit Breakdown for B.ARCH. Degree Curriculum Batch 2026-31
(As per Council of Architecture)

Semester / Course category	First	Second	Third	Fourth	Fifth	Sixth	Seventh	Eight	Ninth	Tenth	Total
PROFESSIONAL CORE COURSE (PC)	13	13	13	10	10	12	10	11	20	-	112
BUILDING SCIENCE & APPLIED ENGINEERING (BS & AE)	7	7	10	13	10	10	4	4	-	-	65
PROFESSIONAL ELECTIVES (PE)	2	4	1	-	4	2	6	3	3	-	25
OPEN ELECTIVES (OE)	1	-	-	1	2	-	-	2	-	-	6
PROJECT/SEMINAR/ INTERNSHIP (PAECC)	-	-	-	-	-	2	6	6	3	26	43
SKILL ENHANCEMENT COURSE (SEC)	3	2	2	2	-	-	-	-	-	-	9
TOTAL	26	26	26	26	26	26	26	26	26	26	260

Note: The Bachelor of Architecture (B.Arch) programme comprises a total of 260 credits and is structured in accordance with the curriculum framework prescribed by the Council of Architecture (CoA) under the *Minimum Standards of Architectural Education Regulations, 2020*. Each on-campus semester shall be of 15 weeks' duration, during which the prescribed course content shall be completed. The total credits shall be distributed across the prescribed course categories to ensure a balanced, comprehensive, and progressive architectural education.

The course categories prescribed by the Council of Architecture, along with their respective aims, are as follows:

1. **Professional Core Courses**: These courses establish the essential knowledge base and competencies required for architectural education and practice. They develop students' abilities in design thinking, spatial planning, architectural representation, historical and theoretical understanding, and the integration of functional, aesthetic, and contextual considerations. These include Architectural Design, Basic Design, Architectural Graphics, History of Architecture, and Theory of Architecture.
2. **Building Sciences and Applied Engineering (BS & AE)**: These courses provide the scientific, technical, and engineering knowledge that informs and supports architectural design. They develop students' understanding of building materials and construction, structural systems, building services, environmental conditions, building performance, and construction technologies, enabling the integration of technical, functional, and environmental considerations into architectural practice.
3. **Elective Courses (PE / OE):** These courses provide opportunities for students to broaden their knowledge, explore specialised areas, and pursue individual interests beyond the prescribed core curriculum.Elective courses are classified into two :

- **Professional Electives (PE):** courses which offer specialised, advanced, or supportive knowledge within the discipline of architecture.
- **Open Electives (OE):** courses that facilitate interdisciplinary learning and the development of additional knowledge, proficiencies, and skills from other disciplines or domains.

4. **Employability Enhancement Courses (EEC)**: These courses develop the professional competencies, practical skills, and additional capabilities required for career readiness and lifelong learning. They are classified into:

- **Professional Ability Enhancement Compulsory Courses (PAECC):** which develop essential competencies considered necessary for professional and career development.
- **Skill Enhancement Courses (SEC):** which focus on developing specific technical, professional, digital, communication, or other relevant skills that enhance employability and professional effectiveness

Course Evaluation and Assessment Pattern

The course categories define the intended learning focus and competencies of the B.Arch. programme. The assessment of individual courses shall be determined by the nature of the course, its prescribed Course Outcomes (COs), learning activities, and requirements specified in the curriculum.

Accordingly, courses across the prescribed categories shall be evaluated through Continuous Internal Evaluation (CIE), Semester End Examination (SEE), Term Work, or Viva Voce, as applicable to the respective course structure.

Internal assessment may comprise tests, assignments, seminar presentations, reports, discussions, sketches, models, documentation, and other assessment components, as applicable to the course and in accordance with the requirements prescribed by the Council of Architecture (CoA). Courses involving substantial practical, design, or application-oriented work may be assessed through Term Work or Viva Voce, while theory-oriented courses may be assessed through CIE and SEE. The applicable assessment components, maximum marks, and weightages shall be specified for each course.

The evaluation pattern shall be as follows:

1. Continuous Internal Evaluation (CIE): CIE shall be evaluated for 50 marks, comprising internal tests (30 marks) and other assessment components (20 marks).Two internal tests shall be conducted during the semester. Each internal test shall consist of three questions, of which students shall answer any two full questions. Each question shall address the Course Outcomes (COs) prescribed for the respective test. The average of the two internal tests shall be considered for awarding 30 marks. The remaining 20 marks shall be assessed through other components as decided by the course instructor.

2. Semester End Examination (SEE): The SEE shall be conducted for 100 marks and scaled down to 50 marks. The question paper shall consist of ten questions with internal choice, comprising two questions per unit. Students shall answer any five full questions, selecting at least one question from each unit.

3. Term Work: Term Work shall be evaluated for 50 marks by a panel of one external examiner and one internal examiner in the absence of students. The assessment shall be based on the quality, completeness, technical accuracy, and overall standard of the submitted work. Depending on the course requirements, the evaluation may include assignments, drawings, reports, models and other prescribed deliverables as applicable to the course.

4. Viva Voce: Viva Voce shall be conducted for 50 marks by a panel of one external examiner and one internal examiner except for Architectural

Design Project and Practical Training for which the panel will constitute two external examiners and one internal examiners. Students shall individually present and explain their work, demonstrate their understanding of the concepts and techniques applied, and respond to questions related to their submissions and course content. The assessment shall consider conceptual understanding, practical application, achievement of the prescribed Course Outcomes (COs), and the ability to communicate and justify design decisions and technical solutions.

SCHEME OF TEACHING & EXAMINATION
IX SEMESTER B. ARCH
Batch 2022

Sl. No	Course Code	Course Title	Category	Credits				Total Contact hours per week			
				L	T	P	Total	L	T	P	S
1	AR901	Architectural Design Project	PC	0	0	20	20	0	0	20	23
2	AR902	Dissertation	PAECC	0	0	3	3	0	0	3	3
3	AR903	Real Estate Management	PE	0	0	3	3	0	0	3	3
TOTAL				**0**	**0**	**26**	**26**	**0**	**0**	**26**	**30**

Nomenclature: PC:Professionals core, PE: Professional elective, PAECC: Professional ability enhancement compulsory courses

Credit Definition:

- **1 credit = 1 hour/week of lecture (L)**
- **1 credit = 1 hour/week of tutorial (T)**
- **1 credit = 1 hours/week of practical(P)**
- **Self Learning Hours (S)**

SCHEME OF TEACHING & EXAMINATION
X SEMESTER B. ARCH
Batch 2022

	Course Code	Course Title	Category	Credits				Total Contact hours per week			
				L	T	P	Total	L	T	P	S
1	AR1001	Practical Training	PAECC	0	0	26	26	0	0	0	0
TOTAL				0	0	26	26	0	0	0	0

Nomenclature: PAECC: Professional ability enhancement compulsory courses

Credit Definition:

- **1 credit = 1 hour/week of lecture (L)**
- **1 credit = 1 hour/week of tutorial (T)**
- **1 credit = 1 hours/week of practical(P)**
- **Self Learning Hours (S)**

NOTE:

- For all viva voce examinations one internal faculty and one external faculty will conduct the exam.
- Portfolios have to be submitted on a prescribed date announced by the department for all the viva voce subjects.
- All students have to register on the first day at the beginning of the Viva voce exam.
- All students have to register on the first day of Term work exams

- For Practical training viva-voce exam, one internal faculty and two external faculties will conduct the exam.
- Portfolios and certificates have to be submitted which will be retained in the department.
- All students have to register and submit the portfolios and certificate from architect's office on the first day, at the beginning of the viva voce exam
- Students are required to complete the internship within the prescribed duration specified in the academic calendar. Failure to do so may result in non-compliance with the academic requirements for the award of the degree.

AR1001 - PRACTICAL TRAINING

Requirements of Practical Training in an office:

- Exposure to office work and practical experience
- Understanding of working drawings
- Understanding of construction details and innovative details
- Preparation of tender documents
- Regular visit to site to understand the practical problems
- Stacking methods of various building materials
- Understanding and taking measurements to prepare bill of quantities
- Understanding of local byelaws, rules and regulations
- Preparation of drawings for sanction purpose
- Maintaining day to day diary with dates with signature of the Architect
- At the end of the training period collect a certificate of experience and satisfactory performance from the Architect. (The dates are required to match with the semester beginning and closing dates)
- All the drawings are signed by the architect and your name shall be mentioned in the title block (This is mandatory in computer drawings)
- Photographs of various stages of the work and details.
- (The students are expected to familiarize themselves on the above topics even if works in some of the above listed areas are not part of the office works)
- Present the case study of one well known work of the architect.
- Undertake a study of any building material, and make a presentation.

SEMESTER – IX

ARCHITECTURAL DESIGN PROJECT	
Course Code: AR901	**Course Credits: 0 : 0 : 20**
Prerequisite: Nil	**Contact Hours:20x15P**
Course Coordinator: Assoc. Prof. Meghana K Raj	

Course Contents:

The Architectural Design Project shall be conducted as a comprehensive design studio with individual guidance from project coordinators and faculty guides. The project shall ideally evolve from the Project Proposal developed in Elective II (AR 805) during the Eighth Semester and further develop the architectural requirements and parameters that sets the premise for design detailing.

This being the culminating academic work of the B. Arch programme, the Architectural Design Project is expected to reflect a professional level of competence in architectural design, technical integration, and project documentation. The student, in consultation with the faculty, is expected to demonstrate an innovative yet practical solution for the built environment. It provides an opportunity for students to demonstrate their ability to synthesize knowledge acquired throughout the programme and apply it to a complex architectural problem through an innovative, contextually responsive, and technically feasible design solution.

This also includes the self-learning component, which is carried out through case studies, data collection, discussion with experts, site data collection etc.
The scope of the project should firmly be in the purview of architecture. All typology of projects should end with an Architectural design solution. A minimum of 3 interim reviews through the design process, typically at the conceptual ideas iteration stage, detailing stage, and the end review, shall be conducted to determine the progress of work completed.

The following units highlight the stages of work to be completed during the semester

UNIT - I

Project finalization, Synopsis with aims, objectives, limitation, and scope
Project title, Type of project, site, site location, surroundings, proximity, accessibility to be discussed.
Site Details and analysis, Zoning, Site Plan, Entry/exit, parking, pickup, drop off, Service entry/exit, service parking, loading/unloading.
Building byelaws, norms, fire and safety regulations, Design standards.

Students may utilize AI-assisted digital tools for site analysis, climatic analysis, environmental assessment, and precedent studies to support evidence-based design decisions.

- Pedagogy / Course delivery tools-: Chalk and talk, Power Point Presentation, Discussion.

UNIT - II

Concept and preliminary architectural scheme of the overall, drawings and working models shall be the end products of this stage.

- Pedagogy / Course delivery tools-: Chalk and talk, Power Point Presentation, Discussion.

UNIT - III

The conceptual drawings to be taken up for design and detailing either as individual blocks or as a whole, supported with working models.
Drawings to be detailed as plans, sections and elevations along with 3D representations to demonstrate the total project.
AI-enabled visualization, rendering, and iterative design exploration tools may be employed for communicating design intent while ensuring technical accuracy and originality.

- Pedagogy / Course delivery tools-: Chalk and talk, Power Point Presentation, Discussion.

UNIT - IV

Interior design detailing, coordination of all services, landscape details and integration with structures.

- Pedagogy / Course delivery tools-: Chalk and talk, Power Point Presentation, Discussion.

UNIT - V

Presentation drawings, project report, presentation models, Preparation of portfolio. The final output should include a report; detailed and completed inclusive of digital drawings.

- The requirements pertaining to the differently abled, elderly and children are to be addressed in design and detailing.
- At the time of the Viva examination, the student shall show the jurors the portfolio containing the evolution of his/her design from the beginning to the final output.
- The Viva will be conducted by 1 Internal and 2 External jurors.
- Students shall include an AI Usage Statement documenting the AI tools utilized, purpose of use, prompts where relevant, and critical evaluation of outputs, maintaining academic integrity and originality.
- Pedagogy / Course delivery tools-: Chalk and talk, Power Point Presentation, Discussion.

Reference Books:

1. Time Saver Standards for building Types- Joseph De Chiara & John Callender
2. Time Saver Standards for Architectural Design Data-- Joseph De Chiara &John Hancock Callender
3. National Building Code of India 2016-Bureau of Indian Standards
4. The Story of the Bauhaus- Frances Ambler
5. Ecovillages around the World: 20 Regenerative Designs for Sustainable Communities- Frederica Miller
6. Martin Luther's Ninety-Five Theses- Martin Luther
7. Assignment and Thesis Writing- Jonathan Anderson
8. Writing your Thesis- Paul Oliver
9. 11 Steps to Architectural Thesis- Architect Professor Indranil Sen
10. Hotel and Resort Design-Anne M Schmid and Mar Scoviak-Lerner

Course outcomes (COs):

The students will be able to -

1. Execute professional practice as per the demand of industry. (PO5, PO6, PO7, PO8, PO11, PSO1, PSO2, PSO3)
2. Evaluate architectural drawings and detailing against environmental, structural, and regulatory standards.(PO1, PO7, PO8, PO10, PO11, PSO1)
3. Interpret statutory regulations, licensing requirements, and procedures for establishing an independent practice. (PO1, PO6, PO7, PO10, PO11, PSO1, PSO2, PSO3)
4. Formulate comprehensive project cost estimates, bills of quantities (BOQ), and tender documents. (PO5, PO8, PO10, PO11, PSO1, PSO3)
5. Analyze project schedules, resource constraints, and critical path networks using project management techniques..(PO5, PO7, PO8, PO10, PO11, PSO1, PSO2, PSO3)

Course Assessment and Evaluation:

<table>
<tr><th colspan="4">Continuous Internal Evaluation (CIE): 50 Marks</th></tr>
<tr><th colspan="2">Assessment Tool</th><th>Marks</th><th>Course outcomes addressed</th></tr>
<tr><td colspan="2">Review-I</td><td>30</td><td>CO1, CO2, CO3</td></tr>
<tr><td colspan="2">Review-II</td><td>20</td><td>CO3, CO4, CO5</td></tr>
<tr><td colspan="4"></td></tr>
<tr><td colspan="2">Semester End Examination (SEE): VIVA-VOCE</td><td rowspan="3">50</td><td rowspan="3">CO1, CO2, CO3, CO4, CO5</td></tr>
<tr><td>Portfolio</td><td>Viva-voce</td></tr>
<tr><td>40</td><td>10</td></tr>
</table>

NOTE:

- Literature survey will be a requirement for Architectural Design study. Periodic review by external juror for subjects going for viva voce.
- For all viva voce examinations one internal faculty and one external faculty will conduct the exam.
- Portfolios must be submitted on a prescribed date announced by the department for all the subjects.
- All students must register on the first day at the beginning of the Viva voce exam.

SEMESTER – IX

DISSERTATION	
Course Code: AR902	**Course Credits: 0 : 0 : 3**
Prerequisite: Nil	**Contact hours: 3x15P**
Course Coordinators: Assoc. Prof. Meghana K Raj	

UNIT I

Introduction to Dissertation; Guideline to be followed for report writing of Architectural Design project.

- Pedagogy / Course delivery tools-: Chalk and talk, Power Point Presentation, Discussion.

UNIT II

Selection of topic, reason for selection, justification, synopsis.
Division of topics and presentation of data collected from case studies, Site visits, and literature survey

- Pedagogy / Course delivery tools-: Chalk and talk, Power Point Presentation, Discussion.

UNIT III

Literature Case study and documentation, review of case studies; Comparative analysis of Literature studies

- Pedagogy / Course delivery tools-: Chalk and talk, Power Point Presentation, Discussion.

UNIT IV

Case study and documentation, review of case study, comparative analysis of case study; conclusion from case study. Concept generation, structure, services, and materials study required for Architectural Design project.

- Pedagogy / Course delivery tools-: Chalk and talk, Power Point Presentation, Discussion.

UNIT V

Presentation on the actual topic based on conclusions from case studies and research; preparation of report based on research conducted under various heads; Selection of site, justification of site selected.
Students may utilize AI-assisted tools for report writing, language refinement, formatting, and presentation, while ensuring originality, proper attribution, and academic integrity.

- Pedagogy / Course delivery tools-: Chalk and talk, Power Point Presentation, Discussion.

- AI-assisted tools, if used, shall be appropriately acknowledged, while maintaining academic integrity and originality.

Reference Books:

1. Andrea Palladio's Architecture, in Four Books Containing a Dissertation-Andrea Palladio
2. The Dissertation: A Guide for Architecture Students -Iain Borden
3. A Manual for Writers of Research Papers, Theses-Kate L. Turabian
4. Abstraction and Transcendence: Nature, Shintai, and Geometry in the Architecture of the Tadao Ando- Pham Thanh Hien
5. The Journey to Dissertation Success: For Construction, Property, and Architecture Students- Elizabeth Laycock
6. Dissertation Research and Writing for Built Environment Students- Shamil G. Naoum
7. Linda Groat and David Wang, Architectural Research Methods, John Wiley Sons, 2002
8. Iain Borden and Katerina Rüedi, The Dissertation, Architectural Press, 2000

Course outcomes:

The students will be able to -

1. Understand the principles and processes involved in undertaking and documenting an architectural dissertation. (PO2, PO3, PO5, PO8, PO9, PSO1)
2. Formulate a research topic and develop a framework for investigation using literature, case studies, site visits, and relevant data. (PO2, PO3, PO5, PO8, PO9, PSO1)
3. Examine and compare relevant literature and case studies to identify key findings related to the selected topic. (PO2, PO3, PO5, PO8, PO9, PSO1)
4. Synthesize research findings and case study observations to inform architectural design considerations, including site, structure, services, and materials. (PO2, PO3, PO5, PO8, PO9, PSO1)
5. Present and document the research findings systematically, with appropriate justification for the selected topic and site. (PO1, PSO1)

Course Assessment and Evaluation:

Continuous Internal Evaluation (CIE): 50 Marks		
Assessment Tool	**Marks**	**Course outcomes addressed**
Review-I	30	CO1, CO2, CO3
Review-II	20	CO3, CO4, CO5
Semester End Examination (SEE):TERM WORK **Report** **50**	50	CO1, CO2, CO3, CO4, CO5

Note:

- Portfolios must be submitted on a prescribed date announced by the department for all the subjects.
- All students must register on the first day at the beginning of the Viva voce exam.
- All students must register on the first day of Term work exams**.**

SEMESTER – IX

REAL ESTATE MANAGEMENT	
Course Code: AR903	**Course Credits: 0 : 0 : 3**
Prerequisite: Nil	**Contact Hours: 3X15 P**
Course coordinator: Asst. Prof. Joyce Lobo	

Course Content

Unit I

Land economics: definition, objectives and scope; Economic rent, land use and land values; Impact of economic forces on urban structure and land use pattern; Bid rent theory; Cities without land markets – use of land in socialist contexts; Regulatory frameworks determining land values and land uses.

- Pedagogy / Course delivery tools-: Chalk and talk, PowerPoint presentation, Discussion.

Unit II

Basis of real estate planning; Overview of real estate sectors- residential, commercial, retail, hospitality etc.; Real estate market analysis; Demand assessment and supply mapping; Competitive bench marking.

Introduction to digital and AI-assisted tools for market analysis, demand forecasting, and spatial data interpretation.

- Pedagogy / Course delivery tools-: Chalk and talk, Power Point Presentation, Discussion.

Unit III

Real estate consultants and their activities; Types of agreements between the consultants and principal; Knowledge base for assessment and forecasting the Real Estate market; Role and responsibilities of property managers; Real Estate investment, sources and related issues; Code of ethics for Real Estate participants;

- Pedagogy / Course delivery tools: Chalk and talk, PowerPoint Presentation, Discussion.

Unit IV

Functions of Real Estate development like project formulation, feasibility studies, developing, costing and financing, managing including planning, scheduling and monitoring of real estate projects, risk management, facilities management, marketing/advertising, post-construction management, etc.; Interests in real estate; Documentation in real estate processes; Transfer of titles and title records; Real Estate appraisal and valuation; Role, scope, working characteristics and principal functions of real estate participants and stakeholders.

Use of digital and AI-assisted tools in feasibility studies and project management.

- Pedagogy / Course delivery tools-: Chalk and talk, Power Point Presentation, Discussion.

Unit V

Real estate development: regulatory provisions, Government policies and programmes; Land development charges and betterment levy; Land use restrictions and compensations; Urban land management and marketing techniques: bidding, reserve price, land reservation, land price subsidies.

Case studies of good practices in development of Real estate.

- Pedagogy / Course delivery tools-: Chalk and talk, Power Point Presentation, Discussion.

References Books:

1.Mike E Miles & Gayle S Berens, 2015.
2.Real Estate Development-Principles and Process.
3. Total Facility Management by Adrain Brooks
4. David G Cotts, 2009. The Facility Management Handbook, Chapter 15: The Construction Phase.
5. Michael Ball, Colin Lizieri, Bryan D. Macgregor-The Economics of Commercial Property Markets.
6. Adrienne Schmitz- Real Estate Market Analysis: A Case Study Approach.

Course Outcome:

The students will be able to -

1. Understand the concepts of Land Economics and Regulatory Frameworks based on the same. (PO4, PO7 , PSO3)
2. Apply the various tools involved in Real Estate management using AI (PO4, PO7, PSO1)
3. Examine the role of Real Estate Stakeholders. (PO6., PO11, PSO3)
4. Analyse and evaluate the process of Real Estate Development. (PO1, PO10, PSO2)
5. Evaluate the different policies and Legal proceedings that are related to Real Estate Development. (PO4, PO11, PSO2)

<table>
<tr><td colspan="4">Continuous Internal Evaluation (CIE): 50 Marks</td></tr>
<tr><td colspan="2">Assessment tool</td><td>Marks</td><td>Course outcomes attained</td></tr>
<tr><td colspan="2">Internal Test-I</td><td>30</td><td>CO1, CO2, CO3</td></tr>
<tr><td colspan="2">Internal Test-II</td><td>30</td><td>CO3, CO4, CO5</td></tr>
<tr><td colspan="4">Average of the two internal tests shall be taken for 30 marks.</td></tr>
<tr><td colspan="2">Other Components</td><td></td><td></td></tr>
<tr><td colspan="2">Assignment-1</td><td>10</td><td>CO1, CO2, CO3</td></tr>
<tr><td colspan="2">Assignment-2</td><td>10</td><td>CO3, CO4, CO5</td></tr>
<tr><td colspan="4"></td></tr>
<tr><td colspan="2">Semester-End Examination (SEE): TERM WORK</td><td rowspan="3">50</td><td rowspan="3">CO1, CO2, CO3, CO4, CO5</td></tr>
<tr><td>Assignment</td><td>Report</td></tr>
<tr><td>30</td><td>20</td></tr>
</table>

Note:

- Portfolios must be submitted on a prescribed date announced by the department for all the subjects.
- All students must register on the first day at the beginning of the **Viva voce exam.**
- All students must register on the first day of **Term work exams.**

SEMESTER – X

PRACTICAL TRAINING	
Course Code: AR1001	**Course Credits: 0 : 0 : 26**
Prerequisite: Nil	**Contact Hours: Internship**
Course Coordinator: Prof. Dr. Rajshekhar Rao	

During the course of the practical training matching the commencement and closing dates of the semester, the students should intern in architectural firms as a full-time trainee. The trainee must ensure the supervising architect under whom he/she is interning should be a registered architect from the Council of Architecture, New Delhi, having minimum 5 years experience after COA registration (for international firms prior permission and due process has to be followed). The registered architect should sign the certificate along with his/her COA registration number. The student should submit a letter of appointment as a trainee from the architectural office at the beginning of the internship.

During the internship the students is required to be involved in the process of development of conceptual ideas, presentation skills, involvement in office discussions, client meetings, development of the concepts into working drawings, preparation of bill of quantities (BOQs) tendering procedure, preparation of Good for Construction drawings (GFCs) site supervision during execution and coordination with the agencies involved in the construction process and to facilitate the understanding of the evolution of an architectural project from design to execution.

The student should carry out a critical appraisal of an existing project designed by the architect, to study its worthiness, value and relevance. Observations to be supported by illustrations, relevant data and pictures: conceptual development of the project, building bye-laws, effectiveness of site layout, climatic considerations, type of structure and materials, critical analysis of floor plans, circulation, services, accessibility, aesthetics.

The student should carry out a detailed study of an innovative building material, or a product currently adopted in professional practice. The study shall examine its properties, applications, advantages, limitations, sustainability aspects, and suitability for different architectural contexts.

Guidelines

- Students are required to complete the internship **within the prescribed duration specified in the academic calendar.** Failure to do so may result in non-compliance with the academic requirements for the award of the degree.
- Students shall submit their **internship joining letters** to their respective proctors at the **commencement of the internship.**
- **Students are required to send a report of their progress and a log of work done every month to their respective proctors promptly.**
- In the event of **discontinuation** of the internship, students shall submit an **official**

undertaking to the Department for record and further academic processing.

- The department will constitute a committee for the evaluation of Internship of the student. Students will be evaluated based on the rubrics.
- For final SEE (viva voce) examinations one internal faculty and two external faculty will conduct the exam.

After the completion of the training, every student should submit the following documents:

1. Internship Completion and Satisfactory Performance Certificate from the architectural office. (Term of internship to match the semester beginning and end dates)
2. Log sheets recording day-to-day works carried out by the trainee and duly signed by the architect.
3. Copies of the drawings and documents prepared by the trainee and duly signed by the architect (Name of the trainee to be mentioned in the title block).
4. Photographs of various stages of the work and details.
5. Report on the critical appraisal of the existing project
6. Report on detailed study of an innovative building material.

NOTE: All students must register on the first day at the beginning of the **Viva voce exam.**

Course Outcomes: The students must be able to:

1. Understand the design philosophy and vision of an architectural office and its application in projects.
2. Examine the integration of materials, structural and service requirements in the architectural design process.
3. Develop an understanding of the professional processes involved in architectural documentation, tendering and site execution.
4. Relate architectural drawings to their use at site and the coordination between the office and site.
5. Demonstrate effective office management and teamwork skills within a professional and ethical architectural practice.

Course Assessment and Evaluation:

<table>
<tr><td colspan="5">Continuous Internal Evaluation (CIE): 50 Marks</td></tr>
<tr><td colspan="3">Assessment Tool</td><td>Marks</td><td>Course outcomes addressed</td></tr>
<tr><td colspan="3">Internal Review</td><td>50</td><td>CO1, CO2, CO3, CO4, CO5</td></tr>
<tr><td colspan="5"></td></tr>
<tr><td colspan="3">Semester End Examination (SEE): VIVA-VOCE</td><td rowspan="3">50</td><td rowspan="3">CO1, CO2, CO3, CO4, CO5</td></tr>
<tr><td>Portfolio</td><td>Critical Appraisal and Material portfolio</td><td>Viva voce</td></tr>
<tr><td>25</td><td>15</td><td>10</td></tr>
</table>