



RAMAIAH
Institute of Technology

CURRICULUM

for the Academic year 2020 – 2021

SCHOOL OF ARCHITECTURE

I & II Semester B. ARCH

RAMAIAH INSTITUTE OF TECHNOLOGY

(Autonomous Institute, Affiliated to VTU)

Bangalore – 560054.

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 13 UG programs and 15 PG programs. All these programs are approved by AICTE. All the UG programs & 09 PG programs are accredited by National Board of Accreditation (NBA). The institute is accredited with ‘A’ grade by NAAC in 2014. University Grants Commission (UGC) & Visvesvaraya Technological University (VTU) have conferred Autonomous Status to MSRIT for both UG and PG Programs till the year 2029. 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 60% are doctorates. Some of the distinguished features of MSRIT are: State of the art laboratories, individual computing facility to 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 & Schneider Centre of Excellence. **M S Ramaiah Institute of Technology has obtained “Scimago Institutions Rankings” All India Rank 65 & world ranking 578 for the year 2020.**

The Centre for Advanced Training and Continuing Education (CATCE), and Entrepreneurship Development Cell (EDC) have been set up on campus to incubate startups. **M S Ramaiah Institute of Technology secured All India Rank 8th for the year 2020 for Atal Ranking of Institutions on Innovation Achievements (ARIIA), an initiative of Ministry of Human Resource Development (MHRD), Govt. of India.** 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. MSRIT is a member of DELNET, CMTI and VTU E-Library Consortium. MSRIT has a modern auditorium and several hi-tech conference halls with video conferencing facilities. It 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, MHRD, Government of India, M S Ramaiah Institute of Technology has achieved 59th rank among 1071 top Engineering institutions of India for the year 2020 and 1st rank amongst Engineering colleges (VTU) in Karnataka.

SCHOOL OF ARCHITECTURE

Ramaiah Institute of Technology (RIT), Bangalore, is a leading institution offering undergraduate, postgraduate and research programs in the areas of engineering, management and architecture. The institute was established in the year 1962, under the aegis of Gokula Education Foundation. Its mission is to deliver global quality technical education by nurturing a conducive learning environment for a better tomorrow through continuous improvement and customization.

The School of Architecture, RIT Bangalore, was established in the year 1992. Since its establishment, the School has played a vital role in providing quality education. The Council of Architecture (COA) and All India Council for Technical Education (AICTE) have recognized this program.

The mission of the school is to uphold the RIT mission and to thus provide quality education to the students and mould them to be excellent architects with adequate design and management skills and noble human qualities.

Full time faculty members having postgraduate qualifications from prestigious institutions in India and abroad are teaching at The School of Architecture. Experienced and well-respected practicing architects are invited to provide their experiences as visiting faculty. New milestones are continually being set and achieved. The synergy of the progressive management, committed faculty and students are ensuring excellent academic results year after year. This is reflected in the high number of University ranks that are secured by the students of the School.

The School of Architecture is now autonomous (affiliated to VTU) providing scope for further improvement. The focus has been towards fostering novel concepts and solutions in Architectural Design. The student's response is very encouraging, and the school recognizes and appreciates such good students by awarding them. After graduation, many students have pursued higher studies in various universities in the country and abroad. There is a great demand for the school graduates in the industry and the School is developing initiatives towards co-branding of the industry and the School. Many students have started their own enterprise and architectural practices as well.

All this has been possible as a result of the efforts of the impeccable faculty of the School. The faculty is committed to the welfare and success of the students. The teachers of the school are also engaged in enhancing their knowledge and skills and many are engaged in research activities as well. The School has experts in specialized disciplines like Habitat Design, Product Design, Urban Design, Urban Planning, Landscape Architecture, and Interior Design. The faculty also actively participates in national and international conferences and publishes and presents papers.

The School as part of a consultancy had started off with the maiden project to redevelop the RIT engineering college campus and is now involved in various campus designs.

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 -

- Imparting quality technical education by nurturing a conducive learning environment through continuous improvement and customization.
- Establishing research clusters in emerging areas in collaboration with globally reputed organizations.
- 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 stake holders concerned.

VISION OF THE DEPARTMENT

To achieve and propagate high standards of excellence in architectural education.

MISSION OF THE DEPARTMENT

- The School's commitment is to prepare people to make a difference;
- To create an environment that shall foster the growth of intellectually capable, innovative and entrepreneurial professionals, who shall contribute to the growth of the society by adopting core values of learning, exploration, rationality and enterprise; and
- To contribute effectively by developing a sustainable technical education system to meet the changing technological needs incorporating relevant social concerns and to build an environment to create and propagate innovative designs and technologies.

PROGRAM EDUCATIONAL OBJECTIVES (PEOs):

PEO 1: Use the knowledge and skills of Architecture to analyze the real-life problems and interpret the results.

PEO 2: Effectively design, implement, improve and manage the integrated socio-technical systems.

PEO 3: Build and lead cross-functional teams, upholding the professional responsibilities and ethical values.

PEO 4: Engage in continuing education and life-long learning to be competitive and enterprising.

PROGRAM OUTCOMES (POs):

PO1: Architectural knowledge: Apply the knowledge of mathematics, science, architectural fundamentals, and an architectural specialization to the solution of complex architectural problems.

PO2: Problem analysis: Identify, formulate, review research literature, and analyse complex architectural problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3: Design/development of solutions: Design solutions for complex architectural problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4: Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern architectural and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO6: The architect and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional architectural practice.

PO7: Environment and sustainability: Understand the impact of the professional architectural solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the architectural practice.

PO9: Individual and teamwork: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10: Communication: Communicate effectively on complex architectural activities with the architectural community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11: Project management and finance: Demonstrate knowledge and understanding of architectural and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12: Life-long learning: Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAM SPECIFIC OUTCOMES (PSOs):

- a) Apply knowledge and skills of arts and sciences to the various architectural scenarios.
- b) Design and develop projects based on function, form and analysis.
- c) Design and improve integrated systems of people, materials, information, facilities, and technology.
- d) Function as a member of a multi-disciplinary team.
- e) Identify, formulate and solve industrial requirements and problems.
- f) Understand and respect professional and ethical responsibility.
- g) Communicate effectively both orally and in writing.
- h) Understand the impact of design solutions in a global and societal context.
- i) Recognize the need for and an ability to engage in life-long learning.
- j) Have knowledge of contemporary issues in industrial and service sectors.
- k) Use updated techniques, skills and tools of architecture throughout their professional careers.
- l) Implement the concepts of project and construction management to satisfy customer expectations.

BOARD OF STUDIES FOR THE TERM 2020 - 2021

- | | |
|----------------------------------|--------------------------|
| 1. Prof. (Dr.) Pushpa Devanathan | Chairperson |
| 2. Ar. Chitra Vishwanath | VTU Nominee |
| 3. Ar. Vidyadhar S. Wodeyar | External Industry Expert |
| 4. Ar. Prasad G | External Industry Expert |
| 5. Dr. Rama R S | Academician |
| 6. Dr. Chidambara Swamy | Academician |
| 7. Ar. Subbiah T S | Alumni |
| 8. Prof. Vishwas Hittalmani | Member |
| 9. Prof. (Dr.) Rajshekhar Rao | Member |
| 10. Dr. Rashmi Niranjana | Member |
| 11. Ar. Meghana K Raj | Member |
| 12. Ar. Reema H Gupta | Member |
| 13. Er. Vijayanand M | Member |

SCHOOL OF ARCHITECTURE

TEACHING FACULTY

SI No	Name	Qualification	Designation
1	Prof. Pushpa Devanathan	M Arch, P.G.D.I. (PhD)	Professor & HOD
2	Prof. Vishwas Hittalmani	M Des	Professor
3	Prof. Rajshekhar Rao	M L Arch (PhD)	Professor
4	Prof. Jotirmay Chari	M Arch (PhD)	Professor
5	Ar. Prasad G	M Arch	Professor (Tenure Faculty)
6	Dr. Rashmi Niranjana	MFA (Fine arts), PhD	Associate Professor
7	Dr. Monalisa	M Arch, PhD	Associate Professor
8	Ar. Surekha R	M L Arch	Associate Professor
9	Ar. Lavanya Vikram	M L Arch (PhD)	Associate Professor
10	Ar. Sudha Kumari	M Arch – Habitat Design (PhD)	Associate Professor
11	Ar. Meghana K Raj	M L Arch	Associate Professor
12	Ar. Tejaswini H	M L Arch	Associate Professor
12	Ar. Reema Harish Gupta	M Arch – Urban Design	Associate Professor
13	Ar. Mallika P V	M L Arch	Associate Professor (Tenure Faculty)
14	Ar. Sudhir Chougule	M L Arch	Associate Professor (Tenure Faculty)
15	Ar. Nikhil V Wodeyar	P G Dip – Urban Design	Associate Professor (Tenure Faculty)
16	Ar. Ashwini Mani	M Arch – Advanced Architecture	Assistant Professor (Tenure Faculty)
17	Er. Vijayanand M	M Tech (PhD)	Assistant Professor
18	Er. Aruna Gopal	B E	System Analyst
19	Ar. Shiv Deepthi Reddy	M Arch	Assistant Professor
20	Ar. Kriti Bhalla	B Arch	Assistant Professor

21	Ar. Aishwarya Yoganand	M Sc – Sustainable Building Systems	Assistant Professor
22	Ar. Divya Susanna Ebin	M Arch – Urban Design	Assistant Professor
23	Ar. Yashas Hegde	M Arch – Urban Design	Assistant Professor
24	Ar. Arpita Sarkar	M L Arch	Assistant Professor
25	Ar. Jyotsna Rao J	M L Arch	Assistant Professor
26	Ar. Ranjitha Govindaraj	M L Arch	Assistant Professor
27	Ar. Trisha Sinha	M Tech (Infrastructure systems)	Assistant Professor
28	Ar. Theju Gowda	M Sc - Architecture	Assistant Professor
29	Ar. Akshata Shagoti	M Arch – Architectural Design	Assistant Professor
30	Ar. Amala Anna Jacob	M Arch – Urban Design	Assistant Professor
31	Ar. Meghana M	M A – World Heritage Studies	Assistant Professor
32	Ar. Sheethal B S	M Plan – Regional Planning	Assistant Professor
33	Ar. Megha Ann Jose	Masters in Interior Arch & Design	Assistant Professor
34	Ar. Pooja M Naik	M Arch – Urban Planning & Mgmt.	Assistant Professor

ADMINISTRATIVE STAFF

1	Mr. Nagesh B. L	Dip. in Mech Engg.	Instructor
2	Mrs. Ambika	M Tech	Assistant Instructor
3	Ms. Swathi P	B. Com	SDA

SUPPORT STAFF

1	Mr. Ramachandra Chari	Attender
2	Mrs. Varalakshmi R	Attender

BREAKDOWN OF CREDITS FOR B. ARCH DEGREE CURRICULUM (Semester I to X)

BATCH 2019 - 2024

(as per Council of Architecture)

SEMESTER	HUMANITIES & SOCIAL SCIENCES (HSS)	ARTS & SCIENCE (AS)	BASIC ARCHITECTURE & ENGINEERING (BAE)	PROFESSIONAL CORE SUBJECTS (PCS)	ELECTIVES	PROJECT/ INTERNSHIP	TOTAL CREDITS
I	1	7	7	11	-	-	26
II	-	8	7	11	-	-	26
III	-	6	8	11	-	1	26
IV	1	3	11	11	-	-	26
V	2	6	6	11	-	1	26
VI	2	-	13	11	-	-	26
VII	3	-	9	11	3	-	26
VIII	2	-	6	15	3	-	26
IX	-	-	-	-	-	26	26
X	-	-	-	5	3	18	26
Total	11	30	67	97	9	46	260

SCHEME OF TEACHING & EXAMINATION - I SEMESTER B. ARCH
ACADEMIC YEAR 2020 - 2021

2020 Batch			Teaching scheme per week				Examination scheme			
Sl. No	Code	Subject	Lecture / Studio	Tutorial	Practical (Study Tour/ Case Study)	Total	Contact hours/ week	Exam	CIE Marks	SEE Marks
1	AR 101	Basic Design	6	0	1	7	8	SEE (term work)	50	50
2	AR 102	Building Materials & Construction Technology I	3	0	1	4	5	SEE (term work)	50	50
3	AR 103	Architectural Graphics I	2	0	1	3	3	SEE (term work)	50	50
4	AR 104	History of Architecture I	3	0	0	3	3	SEE	50	50
5	AR 105	Architectural Structures I	3	0	0	3	3	SEE	50	50
6	AR 106	Art in Architecture	3	0	0	2	2	CIE	100	
7	AR 107	Communication Skills	0	0	1	1	1	SEE	50	50
8	AR 108	Measured Drawing	0	0	2	1	3	CIE	100	
9	AR 109	Kannada	0	0	0	2	2	SEE	50	50
		TOTAL	20	0	6	26	30			

CIE = CONTINUOUS INTERNAL EVALUATION

P = Pass

SEE = SEMESTER END EXAMINATION

F = Absent & Fail

EVALUATION PATTERN: Marks allocation for SEE (TERM WORK)

Subject Code	Subject Name	Design	Drawing	Elective/ Book Review
AR101	Basic Design	20	20	10

Marks allocation for SEE (TERM WORK)

Subject Code	Subject Name	Portfolio	Materials Portfolio
AR102	Building Materials & Construction Technology I	35	15

Marks allocation for SEE (TERM WORK)

Subject Code	Subject Name	Portfolio	Assignment
AR103	Architectural Graphics I	30	20

Marks allocation for CIE

Subject Code	Subject Name	Portfolio	Assignment
AR106	Art in Architecture	40	60

Marks allocation for CIE

Subject Code	Subject Name	Portfolio	Assignment
AR108	Measured Drawing	40	60

Note:

- Literature survey will be a requirement for Architectural Design study. Periodic review by external juror for subjects going for viva voce.
- National / international tours may be arranged during vacation for students, to study examples of good architecture.
- For all viva voce examinations one internal faculty and one external faculty will conduct the exam.
- Portfolios have to be submitted on prescribed date announced by the department for all the subjects and will be retained for one year.
- 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**.

SCHEME OF TEACHING & EXAMINATION - II SEMESTER B. ARCH
ACADEMIC YEAR 2020 – 2021

2020 Batch			Teaching scheme per week				Examination scheme			
Sl. No	Code	Subject	Lecture / Studio	Tutorial	Practical (Study Tour/ Case Study)	Total	Contact hours/ week	Exam	CIE Marks	SEE Marks
1	AR 201	Architectural Design I	6	0	1	7	8	SEE (viva voce)	50	50
2	AR 202	Building Materials & Construction Technology II	3	0	1	4	5	SEE (viva voce)	50	50
3	AR 203	Architectural Graphics II	3	0	0	3	3	SEE	50	50
4	AR 204	History of Architecture II	3	0	0	3	3	SEE	50	50
5	AR 205	Architectural Structures II	3	0	0	3	3	SEE	50	50
6	AR 206	Surveying & Leveling	1	0	1	2	2	SEE	50	50
7	AR 207	Computers in Architecture I	0	0	2	2	3	CIE	100	
8	AR 208	Art Appreciation	2	0	0	2	3	SEE	50	50
			21	0	5	26	30			

CIE = CONTINUOUS INTERNAL EVALUATION

P = Pass

SEE = SEMESTER END EXAMINATION

F = Absent & Fail

EVALUATION PATTERN: Marks allocation for SEE (VIVA VOCE)

Subject Code	Subject Name	Design	Drawing	Elective / Book Review
AR201	Architectural Design – I	20	20	10

Marks allocation for SEE (VIVA VOCE)

Subject Code	Subject Name	Portfolio	Viva
AR202	Building Materials & Construction Technology II	40	10

Marks allocation for CIE

Subject Code	Subject Name	Assignment	Project
AR207	Computers in Architecture I	50	50

Note:

- Literature survey will be a requirement for Architectural Design study. Periodic review by external juror for subjects going for viva voce.
- National / international tours may be arranged during vacation for students, to study examples of good architecture.
- For all viva voce examinations one internal faculty and one external faculty will conduct the exam.
- Portfolios have to be submitted on prescribed date announced by the department for all the subjects for one year.
- 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**.

SEMESTER – I

BASIC DESIGN

Course Code: AR 101

Prerequisite: Nil

Course Coordinator: Prof. Pushpa Devanathan

Course Credits: 6: 0: 1

Contact Hours: 112 hours

Course Objectives:

- Expose the Students to the meaning and purpose of design.
- Train the students in visual composition using 2D and 3D objects.
- Train the students in architectural perception and visualization.

Course Contents:

UNIT - I

Principles and elements of composition with 2D & 3D exercises using single and multiple elements, colors textures and different materials.

Elements of form from abstract concepts.

UNIT - II

To translate, connect and bring out the relationship of aesthetic principles with architecture.

Concepts of volume, scale, width to height ratio.

UNIT - III

Emphasize on the transformation of conceptual drawings to 2D drawing. Basics of preparation of plans, elevations, sections, and views.

Visual analysis of built form.

UNIT – IV

Introduction to anthropometry, space planning based on activity. Analysis of solid and void relations.

UNIT - V

Preparation of final sheets with all the requirements and final models.

Focus on drafting and rendering using different media, views and sketches. Enable the students towards presentation techniques and understanding the form by 3D manual study models and Anthropometry study.

References:

1. Jim Krause, 'Basic Design Index'; David & Charles, 2004
2. Kenneth F. Bates, 'Basic Design: Principles and Practice'; Barnes & Noble Books, 1979
3. Bryan Lawson, 'How Designers Think'; Architectural Press; 4th Edition, 2005
4. Wucius Wong, 'Principles of Two-Dimensional Design'; Wiley; 1st Edition, 1972
5. Christian Leborg, 'Visual Grammar', Princeton Architectural Press; 1st Edition, 2006
6. Sean Adams, Terry Stone, Noreen Morioka, 'Color Design Workbook: A Real World Guide to Using Color in Graphic Design'; Rockport Publishers; Illustrated Edition, 2008
7. Wucius Wong, 'Principles of Three-Dimensional Design'; Van Nostrand Reinhold; 1st Edition, 1977
8. Don Norman, 'The Design of Everyday Things'; Basic Books; Revised Edition, 2013
9. Aaris Sherin, 'Design Elements: Color Fundamentals'; Rockport Publishers, 2012
10. Alain De Botton, 'How Proust Can Change Your Life'; Picador USA, 2006
11. Alan Fletcher, 'The Art of Looking Sideways'; Phaidon Press; 1st Edition 2001
12. Debkumar Chakrabarti, 'Indian Anthropometric Dimensions for Ergonomic Design Practice'; National Institute of Design, 1997
13. François Blanciak, 'Siteless:1001 Building Forms'; The MIT Press, 2008
14. Francis D K Ching, James F.Eckler, 'Introduction to Architecture'; Wiley, 2012
15. Herman Hertzberger, 'Lessons for Students in Architecture'; nai010 publishers, 2005
16. Paul Jacques Grillo, 'Form, Function and Design'; Dover Publications, 1975
17. Paul Jacques Grillo, 'What is Design?'; Theobald Publishers, 1960
18. Peter H Reynolds, 'The Dot'; Candlewick Press, 2003
19. Tom Alphin, The Lego Architect, No Starch Press, 2015

Course Outcomes (COs):

The students will be able to -

- a) Make compositions using basic principles of design, elements of design & materials.
- b) Apply aesthetic principles to architecture.
- c) Establish relationship between space making & form generation & application of different materials.
- d) Apply anthropometry in Architectural design.
- e) Render with manual presentation techniques.

Evaluation Pattern: Marks allocation for SEE (TERM WORK)

Subject Code	Subject Name	Design	Drawing	Book Review
AR101	Basic Design	20	20	10

SEMESTER – I

BUILDING MATERIALS & CONSTRUCTION TECHNOLOGY –I

Course Code: AR102

Course Credits: 3: 0: 1

Prerequisite: Nil

Contact hours: 70 hours

Course Coordinator: Prof. Vishwas Hittalmani

Course Objectives:

- To introduce to the students, the fundamental principles of Architectural Construction.
- To introduce to the students, the fundamental principles of load bearing construction and its major components in building.
- To develop an understanding in students, of the basic building materials.

Course Contents:

UNIT - I

Introduction to drafting and drafting equipment: Lines, Hatches, Lettering, Scales and proportion, Composition.

UNIT - II

Brick masonry: Basic components of masonry, Stretcher and Header bond, English Bond, Flemish Bond.

Material: Clay bricks, aggregate, stone.

UNIT - III

Stone Masonry: Ashlar masonry, Rubble masonry.

Material study: Stone, Brick, Mud mortar.

UNIT - IV

Arches: Typical arch and its basic components, Ogee arch, semicircular arch, four centered arch.

Lintels: R.C.C lintel, Brick lintel, stone lintel.

Material Study: Sand, Fly ash, cement, lime, aggregate.

UNIT - V

Typical Section through a building and foundation.

Material study: P.C.C, Concrete blocks.

References:

1. Mario Salvarodi, 'The Art of Construction'; Chicago Review Press, 3rd Edition 2000
2. P Purushothama Raj, 'Building Construction Materials and Techniques'; Pearson India Education Services, 2016
3. Roy Chudley, 'Construction Technology'; Pearson Education, 2014
4. R. Barry, 'Construction of Buildings - Vol 1'; Wiley-Blackwell, 1999
5. W. B. McKay, 'Building Construction -Vol 1', Pearson Education India, 2013
6. Richard Kreh, 'Building with Masonary: Brick, Block and Concrete'; Taunton Press, 1998
7. 'Bonds and Mortars in the Wall of Brick'; St. Louis Hydraulic Press Brick Co, 1914
8. William Frost, 'Brick arches: Their Setting Out and Construction'; Caxton Publishing, 1932

Course Outcomes (COs):

The students by the end of the course will be able to -

- a) Draft and read architectural drawings using architectural conventions.
- b) Draft and analyse different brick masonry bonds.
- c) Outline the various stone masonry types and required materials.
- d) Formulate spanning of openings using arches and lintels.
- e) Observe and understand the basic details from construction to drawing.

Evaluation Pattern: Marks allocation for SEE (TERM WORK)

Subject Code	Subject Name	Portfolio	Materials Portfolio
AR102	Building Materials & Construction Technology I	35	15

SEMESTER – I

ARCHITECTURAL GRAPHICS – I

Course Code: AR103

Course Credits: 2: 0: 1

Prerequisite: Nil

Contact hours: 42 hours

Course Coordinator: Assoc. Prof. Dr. Rashmi N.

Course Objectives:

- To enhance the drawing skills and visual skills of students in understanding the two-dimensional representations of simple three-dimensional objects.
- To allow students to explore and understand the relation of objects interpenetrating and the orthographic projections of objects and relate to buildings.
- The students should express the combined effect of the above two with various presentation techniques.

Course Contents:

UNIT - I

Introduction to fundamental techniques of architectural drawings, drafting and lettering.

UNIT - II

Introduction of plane geometry and polyhedral structures.

UNIT - III

Orthographic projection of solids and sections of solids.

UNIT - IV

Developments and interpenetrations of objects.

UNIT - V

Three dimensional representations of solid forms (isometric and axonometric) and model making in different materials.

References:

1. Ruzaimi Mat Rani, 'A Guide to Visual Presentation'; Rockport Publishers, 2015
2. Kevin Forseth, 'Graphics for Architecture'; Wiley, 1979
3. Robert Gill, 'Rendering with Pen & Ink'; Thames & Hudson Ltd, 1984
4. Douglas Cooper, 'Drawing and Perceiving', John Wiley & Sons, 2000.
5. C.Leslie Martin, 'Architectural Graphics'; Macmillan Pub Co, 1970
6. Milind Mulick, 'Perspective'; Jyotsna Prakashan, 2006

7. Francis D K Ching, 'Architectural Graphics'; Wiley, 6th Edition 2015
8. I .H.Morris, 'Geometrical Drawing for Art Students'; Longmans, Green and Co, 1908

Course Outcomes (COs):

The students will be able to demonstrate -

- a) Understand the applications of drafting in architecture.
- b) Analyze and understand two-dimensional geometry.
- c) The techniques of orthographic projection in drawings.
- d) The importance of three-dimensional forms in design projects.
- e) Develop models from their drawings and understand their application in architectural design.

Evaluation Pattern: Marks allocation for SEE (TERM WORK)

Subject Code	Subject Name	Portfolio	Assignment
AR103	Architectural Graphics I	30	20

SEMESTER – I

HISTORY OF ARCHITECTURE –I

Course Code: AR104

Prerequisite: Nil

Course Coordinator: Assoc. Prof. Reema H. Gupta

Course Credits: 3: 0: 0

Contact hours: 42 hours

Course objectives:

The students will be exposed to -

- Introduction to critical appreciation of buildings.
- Synoptic study of influences of culture and climate.
- Construction techniques and architectural characteristics

Course Contents:

UNIT - I

Egypt - Influences, architectural character; Development of Mastaba, Pyramids, Evolution of pyramids, Rock hewn tombs; Egyptian cult temple, Mortuary temple & Mamisi temple; pylon, obelisk, hieroglyphics, sphinx etc.

UNIT - II

Architecture of West Asia - Architectural character, influences; Ziggurats - Urnammu, Tchoga Zanbil, Assyrian Ziggurat; Palaces – Khorsabad; Persia – Influences, Architectural character, columns, capitals etc.; Palace at Persepolis & Firuzaba.

UNIT - III

Indus valley civilization - Town planning and construction principles, Great bath. Salient features of Indus valley civilization, granary, house plan, toilet, privy etc
Vedic period – Vedic village, huts, gateway, influence of Vedic elements over Buddhist.
Mauryan period – Architectural character, Ashok stambha. Buddhist period – stupas; Hinayana & Mahayana Buddhism – chaitya halls and viharas; stupa development, chaitya window, torana, vedika and other ornamental features.

UNIT - IV

Greece – Brief study of Mycenaean architecture as an introduction to Greek architecture. Influences, Architectural characters like Optical corrections, Visual effects, Orders (Doric, Ionic, Corinthian) and their evolution, mouldings, ornamental features etc. Salient features of Greek temples, Agora, Acropolis, Parthenon (Doric order), Erechtheon (Ionic order), Theatre Epidaurus, Tower of winds (Corinthian order).

UNIT - V

Rome – Brief study of Etruscan architecture as an introduction to Roman architecture.

Influences, architectural character – orders, types of constructions etc.; Circular & rectangular temples. Monuments – Forum, Colosseum, Triumphal Arches, Thermae, Basilica, Victory column, Aqueduct

References:

1. Spiro Kostof, 'A History of Architecture: Settings and Rituals'; Oxford University Press, 1995
2. Upinder Singh, A History of Ancient and Early Medieval India; Pearson Education India, 2009
3. William Bell Dinsmoor, 'The Architecture of Ancient Greece: An account of its historic development'; Batsford, 3rd Edition 1975.
4. Michael Fazio, Marian Moffett, 'A World History of Architecture', Lawrence King, 2nd Edition 2008
5. E Baldwin Smith, 'Egyptian Architecture as Cultural Expression'; Appleton And Company, 1938
6. J M Kenoyer, 'Ancient Cities of the Indus Valley Civilisation'; Oxford University Press, 1998
7. Clemente Marconi, 'The Oxford Handbook of Greek and Roman Art and Architecture'; Oxford University Press, 2018
8. D S Robertson, 'A Handbook of Greek & Roman Architecture'; Cambridge University Press, 1954
9. Sir Banister Fletcher, 'A History of Architecture'; CBS Publishers and Distributors, 2003

Course outcomes (COs):

The students will be able to -

- a) Characterise historical buildings, influences of culture and climate of the Egyptian period of buildings.
- b) Develop a chronological framework to understand the development of design and construction techniques of West Asia and Persian period.
- c) Summarise the significant structures and buildings in their historical, regional, and cultural contexts in Indian architecture.
- d) Understand the evolution of different architectural styles due to the restraints imposed by prevalent social and cultural environment, availability of materials, climate, and geography.
- e) Distinguish significant developments in construction and design: concepts, architects and movements that shaped architecture into what it is today and how their ideas affect current design.

SEMESTER – I

ARCHITECTURAL STRUCTURES -I

Course Code: AR105

Course Credits: 3: 0: 0

Prerequisite: Nil

Contact Hours: 42 hours

Course Coordinator: Asst. Prof. M. Vijayanand

Course Objectives:

The students will be introduced to -

- Basic Structural Elements and understanding of their behavior. To learn the properties & usage of structural Materials.
- Study the Force system, Resolution of forces, Parallelogram law & conditions of Equilibrium. Analyze the problems on resolution of forces
- Learn types of Loads & Supports systems. Analyze the problems related to the different conditions of loads & supports, Support reactions of Beams & Trusses.
- Find Centroid of Geometrical sections and solve problems related to it.
- Understand the concepts of finding Moment of Inertia & solve problems relating to it.

Course Contents:

UNIT - I

Basic Structural Elements & Materials: Introduction to basic structural systems, beam, Arch, Truss, frames, vaults, domes, slab, shells.

Materials: Basic mechanical properties of structural steel, bricks, stone, concrete & timber.

UNIT - II

Forces: Definition of force and classification of system of force.

Concurrent coplanar forces, triangle law of forces, parallelogram law of forces, rectangular components, resolution of forces, Problems on resolution of forces.

Theorem of transmissibility & composition of forces, Static of equilibrium conditions, resultant and equilibrant of force system, problems on the above to determine the equilibrant and static equilibrium.

Problems on calculation of resultant.

Moment of a force & condition of equilibrium, Non concurrent nonparallel forces, lever arm, couple.

Varignon's theorem of moments – derivation & simple problems, problems on Non concurrent nonparallel forces.

UNIT - III

Types of loads - Concentrated load, UDL, UVL

Types of supports, Problems on support reactions for the beams, trusses.

UNIT - IV

Properties of the section & the definition – C/s area, centroid, second moment of area, Section modulus & radius of gyration of standard areas, Derivation of centroid – square, rectangular, circular & flanged sections.

Problems on the above geometrical figures for centroid – square, rectangular, circular, Tee & I-sections.

UNIT - V

Derivation of MI of Square, rectangular, circular about its centroidal axis, Parallel axis theorem & explanation

Problems on MI - Square, rectangular, circular, Hollow circular, hollow rectangular, square sections, T section, symmetrical I section and unsymmetrical I section

Textbooks:

- 1) M.N. Shesha Prakash, Ganesh B Mogaveer, 'Elements of Civil Engineering & Engineering Mechanics'; PHI Learning Pvt. Ltd., 2014
- 2) Syed Shakeeb Ur Rehman, V. Madhava Rao, 'Elements of Civil Engineering & Engineering Mechanics'; Pearson Education, 2011

References:

1. Chanakya Arya, 'Design of Structural Elements'; Taylor & Francis Group, 2009
2. Trevor Draycott, Peter Bullman, 'Structural Elements Design Manual'; Routledge, 2009
3. James Ambrose, Patrick Tripeny, 'Simplified Engineering for Architects and Builders'; Wiley, 2016
4. Mustafa Mahamid, Edwin H Gaylord, Charles N Gaylord, 'Structural Engineering Handbook'; McGraw-Hill, 2010
5. Jacques Heyman, 'The Science of Structural Engineering'; Imperial College Press, 1999
6. W. F. Chen, E. M. Lui, 'Handbook of Structural Engineering'; CRC Press; 2nd Edition, 2005

Course Outcomes (COs):

The students will be able to -

- a) Adopt the different Structural systems & the materials used for structural construction.
- b) Analyze the various force systems, work on problems relating to the resultant, equilibrium, equilibrant etc.
- c) Analyze the Beams & Trusses with different types of load conditions & different types of support conditions.
- d) Find the centroid of geometrical sections.
- e) Find the Moment of Inertia of the geometrical sections.

SEMESTER – I

ART IN ARCHITECTURE

Course Code: AR106

Prerequisite: Nil

Course Coordinator: Assoc. Prof. Dr. Rashmi N.

Course Credits: 3: 0: 0

Contact Hours: 42 hours

Course Objectives:

The students will be exposed to -

- Develop basic artistic skills in sketching, free-hand drawing, calligraphy etc.,
- Understand and apply different techniques and media of rendering for design presentation.
- Effective visualization of design projects.

Course Contents:

UNIT - I

Role and meaning of Art in Architecture, basics of sketching, free-hand perspective sketching.

Introduction of basic mediums, tools, and techniques of rendering.

Free-hand sketching of interior views of built forms.

UNIT - II

Introduction of colour scheme. How to use water colours, acrylic paints, poster colour, oil-paints, pastels, colour pencils, markers, sketch pens, stumping powder, photo colours. Rendering architectural elements and materials using different rendering techniques.

UNIT - III

Rendering of plans, sections, and elevations of architectural buildings. Rendering the views of built forms, using different mediums, mixed media etc.

UNIT - IV

Understanding plasticity of model making materials such as clay, balsa wood, mill boards, mount boards, thermocol, paper etc. Executing views of built forms using various model making materials, origami, kirigami, mixed media etc.

UNIT - V

Introduction to workshop. Sheet metal and soldering. Introduction to carpentry joints etc. Architectural model making.

References:

1. Julia McMorrough, 'The Architecture Reference & Specification Book: Everything Architects Need to Know Every Day'; Rockport Publishers, 2013
2. Francis D K Ching, 'A Visual Dictionary of Architecture'; John Wiley & Sons, 2011
3. Roark T Congdon, 'Architectural Model Building: Tools, Techniques, and Materials'; Fairchild Books, 2010.
4. Megan Werner, 'Model Making'; Princeton Architectural Press, 2010
5. E H Gombrich, 'The Story of Art'; Phaidon Press; 16th Edition - 1995
6. Martha Sutherland, 'Model Making: A Basic Guide'; W W Norton & Company - 1999
7. Alain De Botton, 'The Architecture of Happiness'; Vintage, 2008
8. Matthew Frederick, '101 Things I Learned in Architecture School'; The MIT Press; 3rd Edition - 2007
9. Akiko Busch, 'The Art of the Architectural Model'; Design Pr, 1991
10. Petra Schmidt, Nicola Stattman, 'Unfolded: Paper in Design, Art, Architecture and Industry'; Birkhauser, 2009

Course Outcomes (COs):

The students will be able to -

- a) Understand the role of art in architecture through free hand perspective sketching and learning the skills of using the basic tools and techniques.
- b) Analyze and understand importance of color scheme in architecture through rendering architectural elements and materials.
- c) Develop skills to render plans and elevations in different mediums.
- d) Develop skills of model making in materials such as paper, mount board, clay, millboard, balsawood, origami and kirigami.
- e) Demonstrate mechanical workshop techniques of sheet metal and soldering for architectural model making.

Evaluation Pattern: Marks allocation for CIE

Subject Code	Subject Name	Portfolio	Assignment
AR106	Art in Architecture	40	60

SEMESTER – I

COMMUNICATION SKILLS

Subject code: AR107

Prerequisite: Nil

Course Coordinator: Humanities Department

Course Credits: 0: 0: 1

Contact Hours: 14 hours

Course Objectives:

The students are introduced to the basics of communication in English through written and spoken activities and help the learner to use the language in a proficient way. The general purpose is to develop the learner's communicative competence in English.

Course Contents:

UNIT I

Understanding Communication Process:

Introduction to communication and its process, forms of communication, levels of communication, barriers to communication, nonverbal communication.

UNIT II

Effective presentation and group discussion skills, importance of body language.

UNIT III

Grammar:

Parts of speech, usage of tenses, identifying errors in sentences, words commonly confused and misused, usage of Phrasal verbs and Idioms.

Using right choice of words in a given context.

UNIT IV

Writing skills:

Paragraph writing, expansion of ideas.

UNIT V

Technical writing:

Basics of letter writing, job application letter, preparing a resume / curriculum vitae. e-mail, letters.

References:

1. Meenakshi Raman, Sangeeta Sharma, 'Technical Communication: Principles and Practice'; Oxford University Press, 2011

2. J Thomson, A V Martinet, 'A Practical English Grammar'; Oxford University Press, 1997
3. Leo Jones, 'Working in English: Teachers Book'; Cambridge University Press, 1998
4. G S Mudambadithaya, 'Communicative English – For Professional Courses'; Sapna Book House, 2002
5. Grant Taylor, 'English Conversation Practice'; McGraw-Hill Education, 2001
6. A.K Jain, A M Sheikh & Pravin S R Bhatia, 'Professional Communication Skills'; S Chand Publishing, 2001
7. Marsha J Ludden, 'Effective Communication Skills: Essential Skills for Success in Work and Life'; Jist Works, 2001

Course Outcomes (COs):

The students will be able to -

- a) Understand the basic concepts in communication.
- b) Identify effective communication strategies.
- c) Develop grammatical accuracy and vocabulary.
- d) Express their ideas and opinions in writing.
- e) Exhibit proficiency in the English language, communicate effectively and thereby enhance their employability.

SEMESTER – I

MEASURED DRAWING

Course Code: AR 108

Prerequisite: Nil

Course Coordinators: Assoc. Prof. Dr. Rashmi N.

Course Credits: 0 : 0 : 1

Contact Hours: 42 hours

Course Objectives:

1. The students should know the value of drafting and documentation in architecture.
2. The students should be able to understand the application of scale and proportion in architecture.
3. The students should understand the importance of survey, need to measure, represent, analyse and appreciate the detailing involved in architectural buildings and historic monuments.

Course Contents:

UNIT - I:

Introduction to basic drafting and understanding the use of scale in architectural documentation. Introduction to basics of sketching on site. Measurement and documentation of street furniture involving ergonomics.

UNIT - II

Introduction to basic mediums, tools, and techniques of documentation. Measurement and documentation of kitchen, toilet etc. involving anthropometry, scale and proportion in architecture.

UNIT - III

Introduction to techniques of observation, understanding, analyzing, measuring and documenting of small building structures/ built forms/ permanent/ temporary structures like kiosks.

UNIT - IV

Measurement and documentation of a unit of vernacular architecture.

UNIT - V

Measurement and documentation of a unit of heritage buildings/ temples.

References:

1. Carl F Schmidt, 'Fences, Gates and Garden Houses: A Book of Designs with Measured Drawings'; Dover Publications, 2013
2. William Radford, 'Architectural Details and Measured Drawings of Houses of the Twenties'; Dover Publications, 2012
3. William Radford, 'Old House Measured and Scaled Detail Drawings - for Carpenters and Builders'; Dover publications, 1984
4. Frank Melendez, 'Drawing from the Model: Fundamentals of Digital Drawing, 3D Modeling, and Visual Programming in Architectural Design'; Wiley, 2019
5. Francis D K Ching, 'Design Drawing'; Wiley, 2010

Course Outcomes (COs):

The students will be able to -

- a) Draft and read architectural drawings at different scales.
- b) Identify and appreciate basic building components and understand their standard measurements.
- c) Identify and understand the techniques of documentation of various built forms and the importance of teamwork in architectural documentation.
- d) Appreciate characteristics of the vernacular architectural style.
- e) Understand and analyse the technique of measuring various buildings ranging from small to big scale.

Evaluation Pattern: Marks allocation for SEE

Subject Code	Subject Name	Portfolio	Assignment
AR108	Measured Drawing	40	60

SEMESTER – I

KANNADA MANASU

Course Code: AR 109

Prerequisite: Nil

Course Coordinator: Humanities Department

Course Credits: 0 : 0 : 2

Contact Hours: 28 hours

Course Contents:

ಘಟಕ-1

ಲೇಖನಗಳು (Article)

1. ಕರ್ನಾಟಕ ಸಂಸ್ಕೃತಿ: ಹಂಪ ನಾಗರಾಜಯ್ಯ
2. ಆಡಳಿತ ಭಾಷೆಯಾಗಿ ಕನ್ನಡ

ಕಾವ್ಯಭಾಗ (Poetry)

3. ವಚನ

ಘಟಕ-2

4. ಕೀರ್ತನೆ
5. ತತ್ವಪದ
6. ಜನಪದ

ಘಟಕ-3

7. ಮಂಕುತಿಮ್ಮನ ಕಗ್ಗ
8. ಕುರುಡು ಕಾಂಚಾಣ
9. ಚೋಮನ ಹಾಡು

ಘಟಕ-4

10. ಡಾ|| ಸರ್. ಎಂ. ವಿಶ್ವೇಶ್ವರಯ್ಯ - ವ್ಯಕ್ತಿ ಮತ್ತು ಐತಿಹ್ಯ - ಎ. ಎನ್. ಮೂರ್ತಿರಾಯರು ಕಥೆ (Story), ಪ್ರವಾಸಕಥನ (Travelogue).
11. ಯುಗಾದಿ : ವಸುಧೇಂದ್ರ
12. ಮೆಗಾನೆ ಎಂಬ ಗಿರಿಜನ ಪರ್ವತ: ಹಿ. ಚಿ. ಬೋರಲಿಂಗಯ್ಯ.

ಘಟಕ-5

ತಾಂತ್ರಿಕ ವಿಜ್ಞಾನ (Technical Science)

13. ಕರ ಕುಶಲಕಲೆಗಳು ಮತ್ತು ಪರಂಪರೆಯ ವಿಜ್ಞಾನ ಕರೀಗೌಡ ಬೀಚನ ಹಳ್ಳಿ ಕಂಪ್ಯೂಟರ್ ಹಾಗು ಮಾಹಿತಿ ತಂತ್ರಜ್ಞಾನ
14. 'ಕ' ಮತ್ತು 'ಬ' ಬರಹ ತಂತ್ರಾಂಶಗಳು ಮತ್ತು ಕಂಪ್ಯೂಟರ್ ಮುಖಾಂತರ ಕನ್ನಡ ಟೈಪಿಂಗ್
15. ತಾಂತ್ರಿಕ ಪದಕೋಶ: ತಾಂತ್ರಿಕ ಹಾಗು ಪಾರಿಭಾಷಿಕ ಕನ್ನಡ ಪದಗಳು.

ಪಠ್ಯ ಪುಸ್ತಕ (Text Book):

1. ಸಾಂಸ್ಕೃತಿಕ ಕನ್ನಡ Edited by: Dr. H. C. Boralingaiah, Dr. L.Thimeesha, Prof. V. Keshavamurthy Prasaranga, V T U, Belagavi, Karnataka.

ಪೂರಕ ಪಠ್ಯ (Reference Book):

1. ಕನ್ನಡ ಮನಸು Kannada Prasaranga

ಕಲಿಕೆಯ ಉದ್ದೇಶಗಳು Course Outcomes (COs):

1. ಸಾಂಸ್ಕೃತಿಕ ಕನ್ನಡದ ಜೊತೆಗೆ ಕ್ರಿಯಾತ್ಮಕ, ಸಾಹಿತ್ಯ, ಸಾಂಸ್ಕೃತಿಕ ಮತ್ತು ನಾಡು ನುಡಿಯ ಪರಿಚಯ ಮಾಡಿಕೊಡುವುದು. (PO-6)
2. ಕನ್ನಡ ಭಾಷೆಯ ವ್ಯಾಕರಣ, ಭಾಷಾ ರಚನೆಯ ನಿಯಮಗಳನ್ನು ಪರಿಚಯಿಸುವುದು. (PO-10)
3. ಕನ್ನಡ ಭಾಷಾ ಬರೆಯದಲ್ಲಿ ಕಂಡು ಬರುವ ದೋಷಗಳು, ಅವುಗಳ ನಿವಾರಣೆ. (PO-12)
4. ಸಾಮಾನ್ಯ ಅರ್ಜಿಗಳು, ಸರ್ಕಾರಿ ಹಾಗೂ ಅರೆ ಸರ್ಕಾರಿ ಪತ್ರ ವ್ಯವಹಾರದ ಬಗ್ಗೆ ಅರಿವು ಮೂಡಿಸುವುದು. (PO-6)
5. ಭಾಷಾಂತರ ಮತ್ತು ಪ್ರಬಂಧ ರಚನೆ ಬಗ್ಗೆ ಆಸಕ್ತಿ ಮೂಡಿಸುವುದು. (PO-10)
6. ಕನ್ನಡ ಭಾಷಾಭ್ಯಾಸ, ಸಾಮಾನ್ಯ ಕನ್ನಡ ಹಾಗೂ ಆಡಳಿತ ಕನ್ನಡದ ಪದಗಳ ಪರಿಚಯ ಮಾಡಿಕೊಡುವುದು. (PO-6)

SEMESTER – I

KANNADA KALI

Course code: ARI09K

Prerequisite: Nil

Course Coordinator: Humanities Department

Course Credits: 0 : 0 : 2

Contact Hours: 28 hours

Course Contents:

Unit-I

Chapter 1: Parichaya. Introduction to Kannada Language, Karnataka State and Literature
Kannada Bhashe - About Kannada Language, Eight Kannada Authors - JnanpiTh Awardies

Unit: II

Chapter 2: Kannada PadagaLu mattu Vaakyagalu Kannada Words and Sentences
naamapadagaLu – Sarva namapadagaLu – (Nouns -Pronouns) and it's usage in Kannada

Chapter 3: Kannada namavisheshanagaLu - (Adjectives-Interrogatives)

Chapter 4: Sambhashaneyalli Prashnarthaka padagalu mattu vaakyagaLu (Kannada-
Interrogative words and Sentences in Conversation)

Chapter 5: KriyapadagaLu, kriyavisheshanagaLu-(verb-adverb) Kannada Samyogagalu
(Prepositions) - Upasarga (Conjunctions) (Kannada -verb - Adverbs - Prepositions in
Conversation)

Unit: III

Chapter 6: Kannada Bhasheyalli SambhashanegaLu- Conversations in Kannada
sambhashaNe: (Conversation With Friends- Teachers, between Friends) (Conversation in
Shop, Hostel, Market, Bus and Train) Shabdakosha: Vocabulary – chaTuvaTike: Exercises

Chapter 7: Vicharaneya / Bedikeya vaakyagalu (Enquiry /Request sentences in
Conversation)

Chapter 8: Sambhashane Conversation with House Owner and Room mate Shabdakosha –
Vocabulary - Exercises to test their knowledge of understanding the Language

Unit: IV

Chapter 9: Saamanya Sambhashaneyalli Kannadada Padagalu mattu Vaakyagalu.
(Kannada Words and Sentences in General Conversation with activities) –Sambhashaneyalli
Eakavachana mattu Bhahuvachana- (Singular and Plural nouns) Conversation-
Sambhashaneyalli Linga rupagaLu- Genders in Conversation

Chapter 10: Viruddha padagalu /Virodarthaka padagalu (Antonyms) Asamanjasa
Uchcharane (Inappropriate Pronunciation)

Chapter 11: Sankhya Vyavasthe (Numbers system) -Samaya /Kalakke Sambhandhisida padhagalu (Words Relating to time) – Dikkugalige sambhadisida padhagalu (Words Relating to Directions)

Chapter 12: Aaharakke sambandisida padagaLu (Names connected with food)

Chapter 13: Manavana shareerada bhagagalu / Angagalu (Parts of the Human body Maanava Sambhandhada da padhagalu (Terms Relating to Human Relationship)

Chapter 14: Maanavana Bhavanegalige sambandisida Padagalu (Words Relating to Human's feelings and Emotions) Vaasada staLakke sambhandisidanthaha padhagalu (Words Relating to place of leaving)

Unit: V

Chapter 15: Kannada akshara maale- swara akshara – vyanjanaksharagaLu (Kannada alphabets and their practices with pronunciations) Tantragnana mattu AaDalita padagaLu- Technical and administrative worlds in Kannada

Text Book:

1. **Dr. L.Thimmesh., Prof. Keshava muurthy,** - 'BaLake kannada' prasarangaa, Vishveshvaraiiah Tantrika vishvavidyalaya.

Reference Book:

1. **Lingadevaru Halemane** - Kannada Kali, Prasaranga kannada University, Hampi 3rd Edition. 2015

Course Outcomes (COs):

As the end of the course students will be able to:

1. Develop vocabulary. (PO-10, PO-12)
2. Identify the basic Kannada language skill. (PO-10, PO-12)
3. Develop listing & speaking skill in Kannada language. (PO-10, PO-12)
4. Enrich language skill. (PO-6, PO-10, PO-12)
5. Apply Kannada language skill for various purpose. (PO-6, PO-10, PO-12)

SEMESTER – II

ARCHITECTURAL DESIGN - I

Course Code: AR201

Prerequisite: Nil

Course Coordinator: Prof. Pushpa Devanathan

Course Credits: 6 : 0 : 1

Contact Hours: 112 hours

Course Objectives:

- Expose the students to the relationship between human feelings and architectural form.
- Train them in space and form making.
- Train the students in architectural perception and visualization.

Course Contents:

UNIT - I

To create space and form and exhibit through models made of different materials to express the look and feel.

UNIT - II

Undertake transformation of solids, coordination of form and function.

UNIT - III

Explore the relationship between human feelings and architectural form – observe aspects of design like aesthetics, light, circulation, structures – study activity flow, interview users – analyse and interpret data – form guidelines for design.

UNIT - IV

Concept development, site studies, visualize space and activity, concepts, single line plans and 3D forms, organize space, volumes, massing and frame aesthetics; make a study model.

UNIT - V

Basics of preparation of floor plans, elevations and sections, reviews, and revisions
Drafting, rendering, reviews, discussions, revisions of drawings, Preparation of a physical model of the completed design and portfolio of semester work.

References:

1. V S Pramar, 'Design Fundamentals in Architecture'; Somaiya Publications, 1997
2. Paul Rand, 'Thoughts on Design'; Chronicle Books, 2014
3. Anthony di Mari, 'Operative Design: A Catalogue of Spatial Verbs'; Laurence King

Publishing, 2013

4. William Lidwell, Kritina Holden, Jill Butler, ‘Universal Principles of Design’; Rockport Publishers, 2nd Edition 2010
5. Thomas Obermeyer, ‘Architectural Drafting: Residential and Commercial’; Glencoe/ McGraw-Hill, 1993
6. Bryan Lawson, ‘How Designers Think’; Architectural Press; 4th Edition, 2005
7. Vincent R Ruggiero, ‘Art of Thinking: A Guide to Critical and Creative Thought’; Pearson; 11th Edition, 2014
8. Piera Scuri, ‘Design of Enclosed Spaces’; Springer, 1995
9. Sandra Reicis, ‘Concept Development and the Design Process’; Bloomsbury Publishing, 2019
10. Bruno Munari, ‘Design as Art’; Penguin UK, 2008

Course Outcomes (COs):

The students will be able to -

- a) Visualize the relationship between human feelings and architectural form.
- b) Create space and form.
- c) Identify and observe the effects of light and shadows, generating ideas.
- d) Learn the first stage of design development.
- e) Represent design through drawings.

Evaluation Pattern: Marks allocation for SEE (VIVA-VOCE)

Subject Code	Subject Name	Design	Drawing	Elective / Book
AR201	Architectural Design – I	20	20	10

SEMESTER – II

BUILDING MATERIALS & CONSTRUCTION TECHNOLOGY –II

Course Code: AR202

Course Credits: 3: 0: 1

Prerequisite: Nil

Contact hours: 70 hours

Course Coordinator: Prof. Vishwas Hittalmani

Course Objectives:

- To provide the students with understanding of load bearing structures.
- Students should be able to identify and analyze the requirements of the building component and communicate the construction details through drawings.
- To understand building materials, properties, application in building.

Course Contents:

UNIT - I

Doors: Introduction to doors and frames, detail study of panel doors with glass and mesh, flush doors, batten ledged and braced doors.

Materials- Properties and usage of timber.

UNIT - II

Windows: Introduction to timber windows – detail study of fixed and sash windows.

UNIT - III

Staircase: Introduction to types of staircase. Detail study of R.C.C waist slab staircase and R.C.C folded plate staircase. Construction of RCC Pre-Cast Staircase, Steel staircase and Composite staircase.

UNIT - IV

Materials - Role of Timber in building industry. Properties and usage.

UNIT - V

Materials - Study of steel as a construction material including its characteristic properties, application etc.

References:

1. Arora & Bhindra, 'A Textbook of Building Construction'; Dhanpat Rai Publishing Co, 2010
2. P Purushothama Raj, 'Building Construction Materials and Techniques'; Pearson, 2016

3. Oscar Tusquets, 'The Staircases: The Architecture of Ascent, Thames and Hudson, 2013
4. Stephen Emmitt, 'Barry's Introduction to Construction of Buildings'; Wiley-Blackwell, 2018
5. Francis D K Ching, 'Building Construction Illustrated'; Wiley, 2012
6. R Barry, 'Construction of Buildings – Vol - 1'; Wiley-Blackwell, 1999
7. W. B Mckay, 'Building Construction'; Pearson Education, 2013

Course Outcomes (COs):

The students will be able to -

- a) Understand and draw details of timber doors.
- b) Study details of timber windows.
- c) Outline the principal components of staircases, their types and construction methods.
- d) Apply steel and timber as building materials based on their properties, behavior, and applications.
- e) Use steel as a trendy building material.

Evaluation Pattern: Marks allocation for SEE (VIVA-VOCE)

Subject Code	Subject Name	Portfolio	Viva
AR202	Building Materials & Construction Technology II	40	10

SEMESTER – II

ARCHITECTURAL GRAPHICS - II

Course Code: AR203

Course Credits: 3 : 0 : 0

Prerequisite: Nil

Contact hours: 42 hours

Course Coordinator: Assoc. Prof. Dr. Rashmi N.

Course Objective:

- To introduce the fundamental techniques of architectural drawings and enhance the visual skills.

Course Contents:

UNIT - I

Perspective: Understanding fundamental techniques of 1- point perspective drawing to enhance the student's architectural drawing skills and the visual skills.

UNIT - II

Perspective: Understanding fundamental techniques of 2- point perspective drawing to assist them in appreciating built forms in their design presentations.

UNIT - III

Sciography: Learning about light, shade and shadow on basic solids.

UNIT - IV

Sciography: Learning about light, shade and shadow on built forms. Applying the understanding of sciography in architectural design presentations to understand the undulations, depths, hierarchy of surfaces and built forms.

UNIT - IV

Rendering: Developing an understanding of the importance of color schemes in design presentations and in the design of built environments.

UNIT - V

Architectural rendering for Site Plan and landscapes.

References:

1. Robert Gill, 'Rendering with Pen & Ink'; Thames & Hudson Ltd, 1984
2. Milind Mulick, 'Perspective'; Jyotsna Prakashan, 2006

3. C. Leslie Martin, 'Architectural Graphics'; Macmillan Pub Co, 1970
4. Phil Metzger, 'The Art of Perspective: The Ultimate Guide for Artists in Every Medium'; North Light Books, 2007
5. Francis D K Ching, 'Architectural Graphics'; Wiley, 6th Edition 2015

Course Outcomes (COs):

The students will be able to -

- a) Draft architectural one-point perspective drawings.
- b) Integrate the understanding of perspective drawing in their architectural design.
- c) Draw and understand shadows for basic solids.
- d) Illustrate the knowledge of sciography in their architectural design.
- e) Develop graphical presentations and rendering of site plans and landscapes.

SEMESTER – II

HISTORY OF ARCHITECTURE -II

Course Code: AR204

Prerequisite: Nil

Course Coordinator: Assoc. Prof. Reema H. Gupta

Course Credits: 3 : 0 : 0

Contact hours: 42 hours

Course Objectives:

- Introduction to critical appreciation of buildings.
- Synoptic study of influences of culture and climate.
- Construction techniques and architectural characteristics.

Course Contents:

UNIT - I

Introduction, Early Christian Architecture – Influences & Arch. Character.

Early Christian Architecture – Basilica church with examples.

Early Christian Architecture – Baptistery & tombs.

Byzantine Architecture – Influences & Arch. Character, Santa Sophia.

Byzantine Architecture – S. Vitale and S. Marks, Venice.

UNIT - II

Romanesque - Italy- Influences & Arch. Character.

Romanesque - Italy- Pisa Cathedral and S. Michele.

Romanesque - France- Influences & Arch. Character.

Romanesque - France- Angouleme Cathedral & Abbey –aux- Hommes.

UNIT - III

Romanesque - Britain- Influences & Arch. Character.

Romanesque - Peterborough Cathedral.

Gothic Architecture in Britain- Influences & Arch. Character.

Gothic Architecture in Britain- Salisbury Cathedral and West Minister Abbey.

UNIT - IV

Gothic Architecture in France- Influences & Arch. Character.

Gothic Architecture in France- Notre Dame Cathedral, Amiens Cathedral.

Late Medieval Architecture in Italy- Influences & Arch. Character.

Late Medieval – Italy - Milan Cathedral, S. Maria del Fiore, Doge's Palace.

UNIT - V

Renaissance Architecture in Italy, France, Britain– Introduction, Architectural character, Examples.

Baroque architecture in Italy, France, Britain – Introduction, Architectural character, Examples.

References:

1. Francesca Prina, 'The Story of Romanesque Architecture'; Prestel, 2012
2. Thomas Graham Jackson, 'Byzantine and Romanesque Architecture'; Palala Press, 2015
3. West, George Herbert, 'Gothic Architecture in England and France'; Nabu Press, 2010
4. Christy Anderson, 'Renaissance Architecture'; Oxford University Press, 2013
5. Spiro Kostof, 'A History of Architecture: Settings and Rituals'; Oxford University Press, 1995
6. Sir Banister Fletcher, 'A History of Architecture'; CBS Publishers and Distributors, 2003
7. Henri Stirelin, 'Architecture of the World – Romanesque'; Taschen Pub, 1996.
8. Robert Adam, 'Classical Architecture'; Harry N Abrams, 1st edition, 1991.

Course Outcomes (COs):

The students will be able to -

- a) Understand the influence of the historical, cultural, and religious aspects in the evolution of early forms of the Christian architecture and of Byzantine architecture.
- b) Analyze the inception and development of the Romanesque architecture in Europe, with an understanding of the Influences and Architectural character of this period. Identify the evolution in various other disciplines during the period.
- c) Understand and gain insight into the influences leading to the evolution of architecture from Romanesque to Gothic style and critically analyzing the changes in architectural characters and structural systems over the period of evolution.
- d) Understand and gain the knowledge of the Architecture of the Gothic period in France to the Late Medieval period in Italy, and correlate architectural character to other creative disciplines.
- e) Apply the knowledge of evolution for creative disciplines to analyze the shift into Renaissance architecture. Understand the architectural characteristics of Baroque Architecture.

SEMESTER – II

ARCHITECTURAL STRUCTURES – II

Course Code: AR205

Course Credits: 3 : 0 : 0

Prerequisite: NIL

Contact hours: 42 hours

Course Coordinator: Asst. Prof. M. Vijayanand

Course Objectives:

- The student should be able to develop and understand the properties of materials.
- The student should be able to develop and understand the behavior of materials.

Course Contents:

UNIT - I

Simple Stress and Strain: Introduction Properties of materials Stress, Strain, Hooke's law, Poisson's ratio, Stress – Strain diagram for structural steel & nonferrous materials, Principle of Superposition & Problems.

UNIT - II

Elastic constants and Elongation of bars: Total elongation of tapering bar of circular & rectangular sections, Elongation due to self-weight, Problems on above, Derivation of expression for volumetric strain, elastic constants & relationships among constants and Problems on elastic constants.

UNIT - III

Shear Force and Bending Moment: Relationship between loading, shear force & bending moment, Shear force & bending moment equations - cantilever beams, simply supported beam and overhanging beams with point load, UDL, Moment and Problems on above.

UNIT - IV

Elastic stability of Compression members: Elastic stability of columns – introduction, short & long columns, Euler's theory on columns, Effective length, slenderness ratio, radius of gyration, buckling load.

UNIT - V

Buckling loads of columns: Assumption & derivation of Euler's buckling load for different end conditions, Limitations of Euler's Theory, Rankine's formula. Problems on above.

References:

1. R K Bansal, 'A Textbook of Strength of Materials'; Laxmi Publications, 2018
2. John Case, 'The Strength of Materials; A Treatise on the Theory of Stress Calculations for Engineers'; Arnold, 2014
3. Barry S Onouye Kevin Kane, 'Statics and Strength of Materials For Architecture And Building Construction', Pearson, 2013
4. Syed Shakeeb Ur Rehman, V. Madhava Rao, 'Elements of Civil Engineering & Engineering Mechanics'; Pearson Education, 2011
5. Ferdinand L Singer, Engineering Mechanics, Harper Publication, 1994
6. R V Raikar, Elements of Civil Engineering and Engineering Mechanics, PHI Learning Pvt. Ltd., 2011
7. Alessandro Freddi, Experimental Stress Analysis for Materials and Structures: Stress Analysis Models for Developing Design Methodologies, Springer, 2015

Course Outcomes (COs):

The students will be able to -

- a) Analyze the properties of materials and determine the stress strain curve for structural steel.
- b) Analyze the properties of materials and determine the relationship between the elastic constants.
- c) Demonstrate and understand the behavior of the material by representing the type of supports and reactions of statically determinate structure.
- d) Determine the stability of compression members.
- e) Demonstrate the design of axial load carrying capacity of columns.

SEMESTER – II

SURVEYING AND LEVELING

Course Code: AR206

Prerequisite: Nil

Course Coordinator: Civil Department, RIT

Course Credits: 1 : 0 : 1

Contact Hours: 42 hours

Course Objective:

Introduction to surveying and leveling principles and practices

Course Contents:

UNIT - I

Importance of surveying for engineers. Types and classification of survey. Principles of surveying. Definition of maps and understanding topographical maps of survey of India. Shrunken scale problems.

UNIT - II

Chain surveying- instruments for chain surveying, direct and indirect ranging, principles and uses of cross staff, optical square. Concept of field book, types of chains and tapes, finding out area of irregular figures by chain, tape, cross staff, construction of pentagon and hexagon using chain surveying.

UNIT - III

Plane table and accessories, advantages and disadvantages of plane table survey, basic definitions, principles of plane tabling, setting up and orientation, methods of plane tabling: radiation and intersection, plane table traversing.

UNIT - IV

Leveling - basic definitions, classification of leveling methods, types of levels- dumpy level, temporary adjustments of dumpy level, reduction of levels, plane of collimation method, problems, profile leveling- methods and application, fly leveling.

UNIT - V

Theodolite - study of transit theodolite and function of parts- temporary adjustments, measurement of horizontal angles- repetition and reiteration, measurement of vertical angles, contouring- definition, uses of contours, characteristics of contours, GIS and its application, total station and its uses.

References:

1. John Clancy, 'Site Surveying and Levelling'; Hodder Arnold, 1981
2. B.C. Punmia, Ashok Kumar Jain, Ashok Kumar Jain, 'Surveying - Vol 1'; Laxmi Publications, 2016
3. Charles Davies, 'Elements of Surveying, and Navigation: With Descriptions of the Instruments and the Necessary Tables'; Palala Press, 2016
4. R. Subramanian, 'Fundamentals of Surveying and Levelling'; Oxford University Press, 2014
5. S K Duggal, 'Surveying - Vol 1'; McGraw Hill Educations, 2019
6. T P Kanetkar, SV Kulkarni, 'Surveying and Levelling – Vol 1&2'; Pune Vidyarthi Griha Prakashan, 2006
7. K R Arora, 'Surveying'; Standard Book House, 2018

Course Outcomes (COs):

The students will be able to -

- a) Describe the types and classification of surveying and topographical maps.
- b) Demonstrate uses of chains and tapes for field measurements.
- c) Discuss the applications of plane table survey.
- d) Practically carry out reduced levels and plot profiles on ground.
- e) Describe and discuss uses of theodolite, contours and total station and GIS for surveying.

SEMESTER – II

COMPUTERS IN ARCHITECTURE -I

Course Code: AR207

Course Credits: 0 : 0 : 2

Prerequisite: Nil

Contact Hours: 42 hours

Course Coordinator: Asst. Prof. Aruna Gopal

Course Objectives:

- To develop skills required in using computers as a tool for architectural design representation
- To develop skills with 3D visualization & animation using Google Sketch-Up.
- To learn Presentation techniques using Google Sketch-Up

Course Contents:

UNIT - I

User Interface essentials: View settings, navigations, orbit, save.

Draw Tools: Basic shapes using draw tools, Unit setup, push-pull, follow me

UNIT - II

Modify: Scale, rotate, Copy, Mirror

Measurements: Protractor, tape, Divide, array.

UNIT - III

Views: Camera views, Scenes, Walkthrough.

Styles: Preset styles, face & edge styles.

UNIT - IV

Material: Applying colors & Textures, creating new materials.

Shadows: Shadow & fog settings.

UNIT - V

Presentation: Section planes, orthogonal views, background styles.

Output: Save as images, Walkthrough as Video file.

References:

1. Alexander C. Schreyer, 'Architectural Design with SketchUp: 3D Modeling, Extensions, BIM, Rendering, Making, and Scripting'; Wiley, 2015
2. Laurent Brixius 'Google SketchUp Workshop: Modeling, Visualizing, and Illustrating'; Routledge, 2012

3. John G Brock, 'SketchUp for Builders: A Comprehensive Guide for Creating 3D Building Models Using SketchUp'; Wiley, 2018
4. Matt Donley, 'SketchUp to LayOut: The essential guide to creating construction documents with SketchUp Pro & LayOut'; Bizfound, LLC 2015
5. Michael Brightman, 'The SketchUp Workflow for Architecture: Modeling Buildings, Visualizing Design, and Creating Construction Documents with SketchUp Pro and LayOut; John Wiley & Sons, 2018
6. Daniel Tal, 'Google SketchUp for Site Design: A Guide to Modeling Site Plans, Terrain and Architecture; Wiley; 2009

Course Outcomes (COs):

The students will be able to -

- a) Use the simple commands and draw basic shapes.
- b) Use Sketch-up to create 3D models of their design.
- c) Apply different camera and walk through settings to their architectural design.
- d) Integrate their understanding of materials and shadows to their architectural design.
- e) Use presentation techniques in sketch-up to communicate design.

Evaluation Pattern: Marks allocation for CIE

Subject Code	Subject Name	Assignment	Project
AR207	Computers in Architecture I	50	50

SEMESTER – II

ART APPRECIATION

Course Code: AR208

Course Credits: 2 : 0 : 0

Prerequisite: Nil

Contact Hours: 28 hours

Course Coordinator: Assoc. Prof. Dr. Rashmi N.

Course Objectives:

The students will be exposed to -

- The meaning of art and its role.
- Evaluate a work of art by appreciation and differentiate clearly from non-art.
- identify the nature and characteristics of various types of art
- The importance of understanding and appreciating/criticizing works of art, their meaning and role. Study of various forms of art like, fine arts, commercial arts, spatial arts, temporal arts etc. Examples / projects expressing the application of the above have to be carried out.

Course Contents:

UNIT - I

Role of Art: Introduction, Art and Architecture, Role and Meaning- artist, Architect and Craftsman, Art in Architecture.

UNIT - II

Types of Art: Fine arts, performing arts, visual art, spatial arts, folk arts, commercial arts, industrial arts abstract art, temporal art, pop art, abstract art, digital art, Types of Architecture.

UNIT - III

Art Criticism: Types of Criticism, Criticism of works of art, movements and isms in art, Impressionism, Expressionism, etc.

UNIT - IV

Art Forms - Visual Arts: Painting, Photography and Architecture, Sculpture and Architecture.

UNIT - V

Art Forms- Performing Arts: Film and Architecture, Music and Architecture, Drama and Architecture, Literature and Architecture, Advertising and Architecture.

References:

1. Pamela Gordon, 'Art Matters: A Contemporary Approach to Art Appreciation'; Oxford University Press, 2019
2. Heather Galloway Vickers, 'Workbook for Art Appreciation: Exercises in Understanding Art Concepts and Theory'; Heather Galloway Vickers, 2015
3. Carolyn Schlamm, 'The Joy of Art: How to Look At, Appreciate, and Talk about Art', Allworth, 2020
4. Lois Fichner- Ratus, 'Understanding Art'; Cengage Learning, 2015
5. S Abid Husain, 'The National Culture of India'; National Book Trust, India – 2018
6. Antony Mason, 'Art of the Western World: From Prehistory to the 21st Century'; Book House, 2010
7. Arthur Llewellyn Basham, 'The Wonder That was India'; Taplinger Pub Co, 1968
8. Fred S Kleiner, Gardner's Art through the Ages: A Global History'; Cengage Learning 2014
9. IDEO, 'Human Centered Design Toolkit'; Author House, 2011
10. Ilay Cooper, John Gillow, 'Arts and Crafts of India'; Thames and Hudson, 1996
11. Michael Braungart, William McDonough, 'Cradle to Cradle: Remaking the Way We Make Things; Vintage Digital 2009
12. Paul Johnson, 'Art: A new History'; Weidenfeld & Nicolson, 2003
13. Yashodhara Dalmia, 'Contemporary Indian Art: Other Realities'; The Marg Foundation, 2003
14. Julia McMorrough, 'The Architecture Reference & Specification Book: Everything Architects Need to Know Every Day'; Rockport Publishers, 2013
15. Francis D K Ching, 'A Visual Dictionary of Architecture'; John Wiley & Sons, 2011

Course Outcomes (COs):

The students will be able to -

- a) Visualize the role of art, to distinguish between art, craft, and architecture.
- b) Differentiate the different types of art and understand their relevance.
- c) Develop a sense of criticism with the understanding of the historical development of art.
- d) Relate architecture to the allied fields of visual art.
- e) Relate architecture to the allied fields of performing arts.