

RashtrasantTukdojiMaharaj Nagpur University, Nagpur

Faculty of Engineering & Technology (Board of Studies - Architecture)

Course and Examination Scheme of Master of Architecture- Architecture Education

Choice Base Credit System (CBCS)

NEW SYLLABUS

OBJECTIVE

Field of 'Architecture Education' is growing at a fast pace in India. The objective of this course is to impart professional training to teachers of architecture.

I Semester M. Arch. (Architecture Education)

PGAE101T INTRODUCTION TO LEARNING METHODS-I

Objective: Teaching has to lead to learning and subsequently, generation of knowledge. Hence this subject is aimed at making future teachers aware of learning methods and their application in teaching architectural subjects / issues.

Unit 1: Concept of education with reference to classical philosophies of education

Unit 2: Aims and objectives of education with reference to higher education in India

Unit 3: Education as a bi-polar and tri-polar process

Unit 4: Blooms Taxonomy of objectives (original and revised)

Unit 5: Principles of teaching and learning

Unit 6: Factors of learning behavioristic theory of conditioning, Levin's field theory and Carl Roger's theory of experiential learning

Sessional Work: Assignments, tests etc.

REFERENCES

1. George Kneller(1971), "Philosophy of Education" John Wiley & Sons Inc; 2nd Revised edition (17 November 1971)
2. J. S.Chauhan, "Advanced Education Psychology" SumitPrakashan
3. J. C. Agrawala (2009), "Essential of educational technology" Vikas Publishing House Pvt Ltd, 01-Nov-2009
4. Bruce Joyce(2014), "Models Of Teaching" Pearson; 9 edition (April 14, 2014)

PGAE102T BASICS OF ARCHITECTURE EDUCATION

Objective: Pedagogy is an art and science of teaching and learning.

Objective of this subject is to understand Pedagogy of Architecture.

Unit 1: Understanding meaning of Architecture and Peculiar requirements of Architecture Education

Unit 2: Models of Teaching: Advanced Organizer, Concept attainment model, Simulations

Unit 3: Synectics as a model of teaching. The essence of creativity in synectics. Use of synectics in the design studio

Unit 4: Techniques of teaching-learning: Maxims of teaching and its application to subjects of architecture, concept mapping, creating concept maps. Basic aspects of classroom management.

Sessional Work: Assignments, tests, site visits.

REFERENCES:

1. S. K. Mangal (2009)“Essential of educational technology”, PHI Learning Pvt. Ltd., 2009.
2. Bruce Joyce and Marsha Weils,“Models of Teaching”, Pearson; 9 edition (April 14, 2014)
3. Klausmier and Ripple (1971)“Learning and Human Abilities” Harper &Row, New York.
4. Eames Charles & Ray, ‘An Eames Anthology’, Yale University Press, Edited by Ostroff Denial.

PGAE103T SOCIETY AND ARCHITECTURE

Objective: Understanding changing needs of the society and co-relating it with Architecture education is the basis of this subject.

Unit1: To understand social relevance of architecture. Effects of social theories on architecture

Architecture mirrors the social, political, economical and educational conditions of the society. Quality of the demand for architecture and supply of design is directly related to architecture education.

Unit 2: Culture and its impact on architecture

Unit 3: Various theories related to social changes. Reasons and impacts of social changes on architecture.

Unit 4: Change in technology and its impact on Architecture.

Sessional Work: Assignments, tests, etc.

REFERENCES:

1. Paul Oliver (2006), 'Built to Meet Needs', 1st Ed.,Elsevier Ltd. Pub., U.K.
2. Rapport Amos (1969), 'House, Form and Culture', Prentico Hall, London.
3. Day Christopher, 'Consensus Design', Routledge.

PGAE104P ELECTIVE –I

APPRECIATION AND CRITICISM

Objective: Objective and scope of this elective is to acquaint students with the arts, skill and technique of visual perception, communication of the aesthetics of architecture and other associated art forms in a journalistic manner.

Unit 1: Ability of Understanding: This will generate ability of understanding “architectural form” in better manner. It includes appreciation advocatory, descriptive, evaluative, interpretative and other evaluation criteria and methodology.

Unit 2: Development of Design Thoughts: It is to assist understanding, developing and expressing a design thought in its right perspective purpose, manner and mode.

Unit 3: Theories and models for experiencing architecture.

Sessional Work: Assignments, tests, site visits and appreciation of buildings, books etc..

REFERENCES:

1. Sir Banister Fletcher,(1996)“History of Architecture”, Architectural Press, 1996
2. Rizzoli (March 18, 2008);“How to Read A Building”Rizzoli (March 18, 2008);
3. Satish Grover(2002), “Islamic Architecture in India”,CBS Publishers & Distributors
4. Kenneth Frampton,(2007) “Towards New Architecture”, Thames & Hudson; 4 edition (September 30, 2007)

PGAE105T ELECTIVE-II (OPEN)

1. Life Skill /Soft Skill

Objective : To enable students to cope with challenges of today’s world and live a life which is socially and emotionally enriching.

WHO Department of Mental Health has identified five basic areas of life

Skills those are relevant across cultures

- Decision-making and problem-solving
- Creative thinking and critical thinking
- Communication and interpersonal skills
- Self-awareness and empathy
- Coping with emotions and coping with stress.

Course objectives-The life skills education contributes to

- Basic education
- Gender equality
- Democracy
- Good citizenship
- Quality and efficiency of the education system
- The promotion of lifelong learning
- Quality of life
- The promotion of peace.

Modules for the elective on soft skills

- Decision Making
- Critical thinking
- Communication and Interpersonal skills
- Self-awareness and empathy
- Coping with emotions and stress

2. GREEN BUILDING

COURSE OBJECTIVES-

Depletion of the earth's natural resources, soaring energy costs, pollution of vital water and food sources, and irreversible environmental degradation and climate change are serious challenges facing the human civilization. This course is designed to enable students to understand the severity of these issues and steps to be taken to mitigate these issues.

By the end of semester, students will be able to:

- Identify major challenges facing the planet earth and human society
- Describe primary components of a green building system
- Understand feasibility of alternative products and solutions based on life-cycle analysis (LCA) methods
- Perform detail performance evaluation of a building based on green rating standards

The course is designed for post graduate course for all branches of Engineering and Technology of RTM Nagpur University

UNIT – 1: Introduction– Introduction to sustainability, environmental challenges, global warming and need to go green.

UNIT – 2: Energy conservation and energy efficiency strategies, climate responsive design, selection of building materials, what makes a material green

UNIT – 3: Renewable sources of energy- Solar energy, Wind energy

UNIT – 4: Green Rating Systems- Indian Green Building Council - IGBC rating systems, Green Rating For Integrated Habitat Assessment (GRIHA),Leadership in Energy and Environmental Design(LEED) Energy Rating System, tax incentives and more

UNIT – 5: Green Buildings in India – Case Study

REFERENCES:

1. C.J. Kibert (2008) “Sustainable Construction: Green Building Design and Delivery”, 2nd Ed., John Wiley, Hoboken, New Jersey.
2. Koenigsberger, O. H., Ingersoll, T. G., Mayhew, A., Szokolay, S. V., 1973. “Manual of Tropical Housing and Building” Part 1. Climatic Design, Orient Longman Pvt. Ltd.
3. Krishnan, A. (ed.), Baker, N., Yannas, S., Szokolay, S., 2001. Climate Responsive Architecture – A Design Handbook for Energy Efficient Buildings, Tata McGraw-Hill Publishing Company Limited, New Delhi.
4. Givoni, B., 1969. Man, Climate and Architecture, Elsevier Publishing Company Limited.
5. MajumdarMili(2002), Energy Efficient Buildings in India, Tata Energy Research Institute, New Delhi.

PGAE106P PAPER WRITING AND PRESENTATION

Objective: Every teacher is expected to write papers at National and Inter-national forum for self development, so as to be better equipped to transmit knowledge / information to students.

Unit 1: Methods of paper writing: The subject shall make students acquainted with standardized methods of paper writing and presenting.

Sessional Work: Assignments, tests, seminars

REFERENCES:

To be suggested by concerned teachers

PGAE107T STUDIO – I -DESIGN PROCESSES -PART I

Unit 1: To understand design processes adopted by architects

Unit 2: Various thinking skills, tools and techniques adopted by architects for deriving design ideas.

Students will undertake classroom and workshop assignments, conduct field observations, make presentations and participate in group discussions and seminars. Study tour and dialogues with architects will be an integral part of the studio. All the experiments are to be conducted with undergraduate students.

Sessional Work: Assignments, presentation, workshop and market survey.

REFERENCES:

1. Ashraf Salama, (1995)“New Trends in Architecture Education”, Raleigh, N.C.: Tailored Text, 1995.

II Semester M. Arch. (Architecture Education)

PGAE201T INTRODUCTION TO LEARNING METHODS -II

Objective: To understand ancient teaching and learning methods in India and other parts of the world.

Unit 1: Micro teaching skills for architecture.

Unit 2: Experiential learning for architecture.

Unit 3: Documentation and role of graphics as a subject in architecture education.

Unit 4: Understanding creativity, creative techniques and exercises in architecture.

Sessional Work: Assignments, tests, seminars

REFERENCES:

1. J. C. Agrawala, "Essential of educational technology", Vikas Publishing House Pvt Ltd, 01-Nov-2009
2. Bruce Joyce, "Models Of Teaching", Pearson; 9 edition (April 14, 2014)
3. New Trends in Architecture Education, By- Ashraf Salama
RALEIGH, N.C.: TAILORED TEXT, 1995.

PGAE202T HISTORY OF ARCHITECTURE EDUCATION

Objective: The aim of this subject is to make students understand the process of evolution and development of man and rules of Architecture in that process of evolution.

Unit 1: Traditions of teaching methods – Gurukul system, ancient universities like Nalanda and Takshashila.

Unit 2: Transmission of knowledge in architecture through temple architecture.

Unit 3: Transmission of knowledge in architecture medieval period.

Unit 4: History of formal architecture education in India.

Unit 5: History of formal architecture education in rest of the world.

Sessional Work: Assignments, tests, education tour, seminars etc.

REFERENCES:

1. A brief History of India, By- Tim Lanbert
2. Guide to Modern Architecture, By- Benham, Publisher -Architectural Press (December 1962)
3. Design In Architecture, By John Wiley,Publisher-John Wiley & Sons Ltd

PGAE203T BEHAVIOUR & EXPRESSION OF STRUCTURES

Objective: Every element of a building contributes to the aesthetics of that building. Understanding behavior of structures under stresses construction systems and Bio-climatic response of building elements to these systems would be the objective of this subject.

Unit 1: Understanding behavior of structures

Unit 2: Bio-climatic response of building elements

Unit 3: Impact of the above two on Architectural expression

Sessional Work: Assignments, tests and site visits for critical appraisal of buildings.

REFERENCES:

1. Aesthetics of building- a search in visual and structural dynamism, Ph.D. Report by Dr. Alpana Dongre
2. Structural Systems, By Cowen **Publisher:** Van Nostrand Reinhold Company (December 1981)

PGAE204T ELECTIVE – III

1. CONSTRUCTION PRINCIPLES & METHODS

Objective: Construction is also a core subject of architecture education. The objective of this subject is to equip students teach construction principles & methods.

Unit 1: Evolution of Basic principles and advancement in construction technology

Unit 2: Methods to deliver technical intricacies for the matter of this subject.

Sessional Work: Assignments, tests, drafting simple plans etc.

REFERENCES:

1. Sushil Kumar, "Building Construction", Standard Publishers Distributors
2. Yatin Pandya, "Elements Of Space Making", Mapin Publishing Pvt, December 25th 2007
3. D.K Ching, "Architecture: Form, Space & Order", Van Nostrand Reinhold, New York 1979, 2nd ed.

2. ADVANCE TEACHING MODELS& AIDS

Objective: Teaching models are an important teaching aid. Importance of teaching models will be highlighted in the subject.

Unit 1: Scientific method of designing and formulating model

Unit2: Types of models for different subjects and choice of appropriate teaching model

Sessional Work: Assignments, tests, etc.

PGAE205T FOUNDATION COURSE –I RESEARCH IN ARCHITECTURE PART I

Objective: The objective of this subject is to make students independent to design research projects and to come to certain conclusions.

Unit 1: Meaning of research in architecture.

Unit 2: Concepts of architecture evolved in various part of the world.

Unit 3: Indian traditional research methods.

Sessional Work: Assignments, tests, market survey etc.

REFERENCES:

1. Ranjeet Kumar, "Research methodology", SAGE Publications.
2. Robert Bogdam, "Research for Education", Pearson Education group, New York
3. John Creswell, "Research Design" SAGE Publications
4. Uwe Flick, "An Introduction To Qualitative Research", SAGE Publications
5. John Best, "Research in Education", SAGE Publications
6. R.N. Sharma, "Research method in Social Scien", Bombay Media Promoters 1983

PGAE206P VISUAL ARTS AND CAD

Objective: The objective of this subject is to expose students to various advanced CAD technologies and analysis and understanding of Visual Arts and CAD and its proper utilization.

Unit 1: Visual Arts: Visual arts basically involve visualization/ anticipation of form (architectural form), its visual analysis and understanding of its expressive qualities.

Unit 2: Uses of CAD: This includes uses of virtual reality by generating 3D form. How use of CAD technologies can make study much simpler, interesting and realistic. How computer aided spatial visual analysis can aid in improving visual qualities of architectural form.

Sessional Work: Assignments, tests, drafting simple plans etc.

REFERENCES:

To be suggested by Concerned Teachers

PGAE207P STUDIO – II –DESIGN PROCESSES PART II

Unit 1: To understand design processes adopted by architects

Unit 2: Various thinking skills, tools and techniques adopted by architects for deriving design ideas.

Students will undertake classroom and workshop assignments, conduct field observations, make presentations and participate in group discussions and seminars. Study tour and dialogues with architects will be an integral part of the studio. All the experiments are to be conducted with undergraduate students.

Sessional Work: Practice lesson in workshop.

REFERENCES:

1. Joseph O' Connor "The Art of System Thinking", Kindle Edition
2. Swami Rama, "Creative Use Of emotion" Himalayan Institute Press, June 1st 1987

III Semester M. Arch. (Architecture Education)

PGAE301T ELECTIVE SUBJECTS – DESIGN PROCESSES IN ALLIED ART

Objective

Unit 1: Understanding various art forms other than architecture.

Unit 2: Understanding the spaces required for these art forms.

Unit 3: Understanding the life style of the artists.

Unit 4: Understanding the attitude and their approach towards these art forms.

REFERENCES:

PGAE 302T FOUNDATION COURSES –II Research in Architecture Part II

Objective

Unit 1: Research in Architecture education.

Unit 2: Basics of architecture education (skill, knowledge and design)

Unit 3: Transmission of knowledge for skill.

Unit 4: Transmission of knowledge for research on design.

Unit 5: Building research and development – (a) object, scope and basic principles, (b) Different types of research in architecture (c) Action Research (d) Fundamental and Applied Research. (e) Historical Research

Sessional Work: Assignments, tests, etc.

REFERENCES:

PGAE303P SOCIAL RELEVANCE OF ARCHITECTURE EDUCATION

Objective 1: Understanding changing needs of the society and co-relating it with education is the basis of this subject.

Unit1: Environmental psychology

Unit 2: Role of symbolism and semiotics in architecture.

Unit 3: Culture and its impact on architecture Part II.

Unit 4: Emerging new typologies as per social needs.

Sessional Work: Assignments, tests, etc.

REFERENCES:

AshrafSalama, "New Trends in Architecture Education" Raleigh, n.c.: tailored text, 1995.

PGAE304P SEMINAR

Objective: Seminars are intended to develop the habit of exploring the subject in detail and make inquiries.

Sessional Work: Seminars related to Contemporary Philosophies in architecture and education would be undertaken by students.

REFERENCES:

To be suggested by Concerned Teachers

**PGAE305P STUDIO – III - DESIGN METHODS / CONSTRUCTION METHODS –
INNOVATIVE APPROACH**

- Objective:
1. To understand the pre-requisites for becoming an ideal design teacher.
 2. To study different approaches to architectural design teaching and their relevance in contemporary studio teaching.
 3. To select a relevant issue and explore it in detail with reference to design teaching.

- Mode of Interaction:
1. Reading of selected texts
 2. Discussion on readings
 3. Evolution of the studio based on the above
 4. Transmission in studios
 5. Portfolio (Modalities of presentation will depend on nature of the studio)

REFERENCES:

1. PremillaD'Cruz, "Thinking Creativity at Work", SAGE Publications
2. Edward De Bono, "Teaching Yourself to Think", Penguin UK (January 1, 1990)

IV Semester M. Arch. (Architecture Education)

PGAE401P PROFESSIONAL TRAINING

(PLACEMENT – 8 WEEKS)

Students will be placed in schools of architecture in different parts of India and outside India to understand the philosophy, teaching methods, strategies and techniques of teaching and learning of architecture practiced in those schools.

PGAE402P COLLOQUIM

PRESENTATION AND REPORT

Students will present their experience of training. Learning through each other's experiences is the objective.

PGAE403P DISSERTATION AND PROJECT

Every student will have to select a subject of interest related to architecture education and work on it to explore the details.