



SEMESTER: I

ARC 6301: RESEARCH METHODOLOGY

After completion of this course the student will be able to:

1. Make use of different research parameters for the identification of correct data sources.
2. Choose the data structure for different types parametric analysis
3. Conclude the appropriateness of different research hypothesis using descriptive and inferential statistics.

ARC 6303: DAYLIGHTING AND THERMAL COMFORT

After completion of this course the student will be able to:

1. Understand term & terminologies related to Daylighting.
2. Analyze the needs & design daylighting.
3. Understand the fundamentals of thermal comfort with the help of various models.
4. Perform post-occupancy evaluation of a building with the help of thermal comfort standards.
5. Model small programs that allow them to accomplish useful goals.

ARC 6305: HEAT TRANSFER & BUILT ENVELOP ENGINEERING

After completion of this course the student will be able to:

1. Understand heat transfer process in building through various modes.
2. Solve basic heat transfer engineering problems.
3. Design the wall sections with respect to heat transfer in multi dimensions using simulation tools like THERM, etc.
4. Design the fenestration sections with respect to heat using different simulation tools such as WINDOW, etc.
5. Demonstrate their understanding of different rating systems for building envelop like NFRC, etc.

ARC 6307: Green Buildings

After completion of this course the student will be able to:

1. Understand heat transfer process in building through various modes.
2. Solve basic heat transfer engineering problems.
3. Understand the energy performance of a building.
4. Calculate energy Performance of building through various methods.

ARC 6309: ENVIRONMENTAL DESIGN

After completion of this course the student will be able to:

1. Understand environment management & ecosystem.
2. Understand Principles & Benefits of Environmental Design.
3. Have Knowledge of Construction Waste, Energy & landscape in a built environment.
4. Define strategies related to Environmental Design.
5. Current trends & concepts related to environment.

SEMESTER: II

ARC 6302: CONSULTING STUDIO – I

After completion of this course the student will be able to:

1. Apply the Sustainability and Energy Efficiency Strategies in a Medium Scale Building Project
2. Distinguish the need for different passive strategies in Sustainable Buildings
3. Determine the requirements of appropriate of alternative building technologies in Sustainable design.

ARC 6304: Building Energy Simulation & Auditing

After completion of this course the student will be able to:

1. Demonstrate the use of Energy Simulation by evaluating of building energy performance.
2. Estimating the appropriateness of different decision taken in the design process with mathematical basis of building energy modelling.
3. Maximize the energy efficiency of the building by optimizing the energy consumption of the building using the different input variables of architectural design.
4. Evaluate the worthiness of different design decisions.

ARC 6306: Energy Economics

After completion of this course the student will be able to:

1. Make economic decisions related to energy, in future.
2. Understand energy as resource & its demand & supply.
3. Understand the environmental impact of energy consumption and production.
4. Understand process of assessing life cycle.

ARC 6308: HVAC

After completion of this course the student will be able to:

1. Define basic terminologies related to HVAC for a Building
2. Use knowledge of ventilation requirement of building & related standards
3. Use knowledge of mixed mode ventilation system.
4. Design of energy Efficient Ventilation system for a building

ARC 6310: Smart Controls & Services (Theory & Lab)

After completion of this course the student will be able to:

1. Choose the level of intelligence required in the building services of each project by comparing across the possible options
2. Analyze the financial feasibility of different smart technology-based services in the buildings
3. Make use of automation systems to simplify the user's life by enhancing the appropriateness of different sensors, actuators and PLCs



SEMESTER: III

ARC 7301: Consulting Studio-II

After completion of this course the student will be able to:

1. Apply the Sustainability and Energy Efficiency Strategies in a Campus Design Project.
2. Distinguish the need for different active and passive strategies in Sustainable Building design and sustainable campus design
3. Determine the requirements of appropriate of alternative building technologies in Sustainable design.
4. Maximize the identified objective for integrated design approach using different optimization techniques.

ARC 7303: Lighting and Acoustical Design

After completion of this course the student will be able to:

1. Understand basic science related to Illumination.
2. Use Fundamentals of Natural & artificial lighting & preparation of lighting schemes.
3. Understand basic science related to Acoustics.
4. Design acoustical requirements and consideration of building.

ARC 7305: High Performance Buildings Studio

After completion of this course the student will be able to:

1. Minimize the energy consumptions of the building using different design parameters.
2. Estimate the Internal Rate of Returns for different design decisions.
3. Make use of different tools and evidence-based design methods to support their design decisions.

ARC 7307: Policies and Regulations for implementation

After completion of this course the student will be able to:

1. Apply their understanding of different codes as constraint to the project
2. Illustrate their understanding of Integrated design approach to combines different codes (such as NBC, ECBC, BIS SP 41, etc.) on single platform.
3. Criticize the existing policies by analyzing different parameters associated to the building design.

ARC 7309: Internship

After completion of this course the student will be able to:

1. Apply their understanding of theory and design courses in a professional or a research setup.

SEMESTER: IV

ARC 7302: Thesis (Research) or Final Project (Design)

After completion of this course the student will be able to:

1. Analyse the specific policies across the different possible domains of application.
2. Maximize and enhance the specific objectives for the given projects.
3. Formulate different algorithms for the development of integrated design approach in the presence multiple codes.