GUJARAT TECHNOLOGICAL UNIVERSITY

DIPLOMA IN ARCHITECTURE

FIFTH SEMESTER SYLLABUS (W.E.F.JULY 2015)

SUBJECT NAME – DESIGN STUDIO V

SUBJECT CODE – 3356201

FOCUS:

Determinants of space making on housing or house forms in rural and urban context and their relevance. Developing an appreciation of Housing as a process evolving itself with changes in people-place-time.

CONTENTS:

- Identification of the cultural factors of space making such as notion of privacy and territoriality, family structure and hierarchy, gender roles, occupational associations, traditional values and their continuity etc., interpretations of socio-cultural factors in the built form in terms of spatial organization, orientation, open, semi open and closed spaces correlation, scales and proportions etc.,
- Climate and topography, local construction system and use of materials, bye laws.
- Design of various typologies such as dwelling-cluster and neighborhood in a specific community and context, relevant case studies and their analysis, literature review, exercises related to relevant or appropriate construction systems and materials
- One major Studio Project aimed at developing an appropriate design of housing cluster suitable to the site, one mini Studio Project aiming at methodology for qualitative assessment of existing/chosen housing site for identification of characteristics & problems therein; and suggests strategies related to suitable interventions and management of the housing; one time problem.

SUGGESTED BOOKS

- House Form and Culture by Rapoport, Amos
- Architecture without Architects by Rudofsky, Bernard
- EVAW by Oliver, Paul
- Contemporary Architecture in India by Joglekar, M. N.
- Co-housing by Mc Camant & Durrett
- Life, Works and Writings of Laurie Baker by Bhatia, Gautam
- Housing and Urbanisation by Correa, Charles

SUBJECT NAME – SITE PLANNING AND COMMUNITY DESIGN

SUBJECT CODE – 3356202

FOCUS:

To develop sensitivity to factors influencing site design. To develop understanding of principles and techniques of site planning and apply them to actual situation. To emphasize the role of site planner in site design

CONTENTS:

- Introduction to site planning, definition of site planning, site planning in history, Site planning process, Site analysis - understanding various factors influencing site, site selection and resource analysis
- Site planning in urban area, Site planning in natural area
- Site planning standards, sources of information for site data and site information
- Contour map and interpretation , Grading plan and grading process
- Drainage system in site planning
- Land use and circulation, zoning, service systems in site planning
- Formation of site plan, Site planning for residential projects, Site planning for institutions and public areas, Site planning for resorts, parks and tourist complexes
- There will be two projects in a semester. The first project will be introductory and students will take up an existing site for detail analysis and study of various issues related to site planning. The second project will be the major project whereas the information and techniques of site planning will be applied in detail.

SUGGESTED BOOKS

- Site planning, Lynch, Kevin
- A Guide to Site and Environmental Planning,Rubinstein, Harvey M.
- Grade Easy, Untermann, Richard K.
- Site Planning for Cluster Housing, Untermann, Richard K.
- Design with Nature, McHarg, Ian
- Urbanization Primer, Caminos, Horatio, and Reinhard Goethert
- Designed for Recreation, Beazley Elizabeth
- Campus Planning, Dober, Richard P.
- The Granite Garden, Spirn, Anne Whiston

SUBJECT NAME – ARCHITECTURAL PROGRAMMING

SUBJECT CODE – 3356203

FOCUS:

To understand concept, need and scope of architectural programming. To develop research skills necessary for programming. To develop the ability to synthesize data/information in order to evolve the pre-design concept. The process must investigate the organizational, social and individual aspects of overt behavior in any social organization.

Programming is the analytical aspect of design. The course focuses on collecting data, procedure, and techniques which can help improve design and practice. Programming is information processing process involving a disciplined methodology of data collection, analysis, organization, communication and evaluation. Programming is basically pre-design service leading in major decision making aiming at improving our built environment in areas of interior architecture, architecture and urban planning and design.

CONTENTS:

- Introduction to programming, Identification of objectives for programming
- Gathering information/ educating client, Process of programming
- The methodology for information gathering, Analysis, organization and interpretation of data/information
- Documentation and presentation of material
- Computer aid in programming
- Projection and forecasting in programming, Case studies of architectural programming
- Post occupancy evaluation
- The students will be required to gather information, data for the particular project. The final submission of the report will incorporate analysis, interpretation and presentation of the collected material along with conceptual pre-design strategy.

SUGGESTED BOOKS

- Architectural programming, Kumlin, Robert R.
- The architect's guide to programming, Palmer Mickey A.
- The impact of the client organization on the programming process, Faberstein,Jay (Edited by Wolfgang Preiser, Van Nostrand Reinhold)
- Architectural programming: Information Management for Design Duerk, Donna P. (Van Nostrand Reinhold)
- Behavioral Research Methods in Environmental Design Michaelsin, William Hutchinson Ross)
- Problem seeking: An Architectural Programming primer Pena, William M. (AIA Press)

SUBJECT NAME – ENVIRONMENTAL SCIENCE AND ECOLOGY

SUBJECT CODE – 3356204

FOCUS:

To develop the knowledge required for understanding the influence of climate on architecture. Understanding Environmental issues, ecology and ecosystem. Environment design as a domain of architects /designers/planners, with an understanding of anthropogenic activities as the determinants of environmental quality.

CONTENTS:

- Environment, ecology, ecosystem with cardinal principles, natural cycles, Resources, causes of resource exhaustion and resource pollution,
- Urbanization and impacts
- Introduction – Elements of climate, measurement and representations of climate data. Classifications of tropical climates, Major climatic Zones of India.
- Thermal comfort: Effect of climatic elements on thermal comfort environment. Body's heat exchange with surrounding environment.
- Principles of thermal design and means of thermal control.
- Natural ventilation: functions of natural ventilation, Design consideration and effects of openings and external features on internal airflow.
- Site Climate: Effect of landscape elements on site / microclimate.
- Day lighting: Advantages and limitations, components of Day light factor, Shading devices – Sun – Path diagram, use of solar charts in climatic design. Types of shading devices. Procedure of designing shading devices.
- Design considerations for buildings in tropical climates with special reference to hot – dry, warm – humid and composite climates.
- Energy conservation with respect to hot - dry climate.
- Projects on Ecosystem, resources and pollution study of some live example, Sun path study with identified locations, Study of vernacular architecture.
- Study of Passive Solar Architecture

SUGGESTED BOOKS

- Manual of Tropical Housing & Building (Part-II) by Koenigsberger
- Housing Climate and Comfort by Martin Evans
- Buildings in the tropics by Maxwell fry
- Climate Responsive Architecture by ArvindKishan, Baker &Szokolay
- Environment and Ecology by Norman Kormandy

SUBJECT NAME – ART APPRECIATION AND AESTHETICS

SUBJECT CODE – 3356205

FOCUS:

A global survey and comparative exploration of art, architecture, and design from the historical origins of civilization to contemporary manifestations of art practice. Emphasis will be placed on the artist's role in society and how social factors give rise to various art forms. Students will evaluate and examine contextual and cultural factors and their influence on the patronage and production of formal and stylistic visual languages that arises out of a specific time, place, and culture. Art appreciation requires the acquisition of a critical and formal language in which students come to identify, describe, analyze and compare the visual characteristics of various works using the correct art historical terminology and vocabulary. Art appreciation cultivates a deeper and more expansive awareness of Art, images, and the vast cultural histories we have inherited. In addition to this course, the student should realize the importance of Aesthetics as one dimension of Quality in Business Products and Services. A good combination of Business, Information Technology will be integrated in Art Appreciation and Aesthetics.

CONTENTS:

- Identify the purposes and functions of art in human society and arrive at a coherent definition of what is meant by "art" as a cultural endeavor.
- Define basic art terms and processes; develop a knowledge of and an ability to recognize design principles and elements in selected works of art.
- Identify by artist, title, or style, major selected art works from various historical and global contexts in a variety of media.
- Understand the highlights of the biographies of a variety of artists as they relate to the meaning of their works.
- Study of different art isms such as Abstract Art, Dadaism, Brutalism, and Impressionism.
- Recognize major periods of world art history.
- Describe the techniques used in a variety of art media.
- Develop a formal analysis of a work of art.
- Evaluate the relationship of form to content and context.
- Understand and identify the symbols used in iconographic art works.
- Demonstrate an understanding of art criticism including the description, analysis, interpretation, and evaluation of a given work.
- Develop a deeper understanding of the culture that we are currently immersed in, and the ability to think critically with regards to the images and visual forms that engage us.
- ARTS IN TIME: Prehistoric, Egyptian, Greek, Roman, Medieval, Renaissance, Baroque, Rococo, Nineteenth Century, Twentieth Century, Art Since 1945
- AESTHETICS AND QUALITY: Dimensions of Quality, Products and Service Design, The Value of Aesthetics in Business
  ### SUGGESTED BOOKS
- Introduction to Art Appreciation and Aesthetics by Panizo, Rustia, Rex Bookstore, Inc.
- Aesthetics and the Environment: The Appreciation of Nature, Art and Architecture by Allen Carlson, Routledge, 2000
- Art and ideas by William Fleming
- Aesthectics by Yuri Borev
- The story of modern art by Sheldon Cheney

SUBJECT NAME – ESTIMATION AND COSTING

SUBJECT CODE – 3356206

FOCUS:

To develop the necessary skills for estimation and writing specifications for various types of buildings and developmental work, to achieve the best in terms of cost efficiency and standards.

CONTENTS:

- Introduction, importance of estimation, types of estimates, mode of measurement etc.
- Study of local SR rates, Market rates, Measurement book (MB) RA bill, interim and final certificate
- Detailed rate analysis of building items as per current schedule of rates (CSR) of local PWD and CPWD, Delhi
- Schedule of Rates – for information only
- Percentage of various materials used in building items like cement, steel, rubble, metal sand brick, tiles etc.,
- Abstract and detailed specifications for various materials and items of work used in building
- Understanding of importance of specification in contract document and execution purpose.
- Estimation of
  - a) Load bearing and RCC framed structure with one example for each
  - b) Various types of roofs like steel and wood including roofing materials like Mangalore tiles, AC, GI sheet etc.,
  - c) Water supply and sanitary works
  - d) A typical layout plan with roads, culverts etc.,

- Study through practical site visits, presentations, case studies, tutorial, study of BOQ & workshop based on the application of theory to construction field.

SUGGESTED BOOKS

- Estimating and Costing by S K Dutta
- Estimating by SC Ranga