

K.U.K., B. ARCHITECTURE - VIIth SEM
Architectural Design - VI
(AR-401)

Uni. Exam. Marks	-	100
Sessional / Class test Marks	-	100
Duration of Exam.	-	7 hrs
Contact Hrs / week	-	7

Intent:

To familiarize the students with large scale housing and building projects with emphasis on building services and systems, architectural controls and building bye laws.

Content:

1. A design involving large spans viz exhibition pavilions, industrial buildings, etc.
2. Design of multi-functional mid-rise buildings with specialized services, such as Institutional, Recreational, Transportation, Hospitals, Housing and Hotels.
3. Seminar: A detailed case study of live project / existing building, with respect to the provisions of services viz Public Health, Electrical, H.V.A.C., Fire Fighting etc., to be done in groups. The presentation on the same to be made in the form of Audio / Visual mode (PPT presentation). Final submission to be made in the form of a seminar report.
4. Study Tour

Instructions for the Examiner:

Two questions are to be set from the entire syllabus and the student has to attempt any one of these. The topic of the problem to be introduced 7 days in advance, by displaying it on the department's notice board, for the students to do the literature and case study.

Note:

During examination, Lunch / Tea break of half an hour is allowed extra to the 7 hrs duration.

References:

- Time Saver Standard for Architectural Design Data, Donald Watson, Michael J. Crosbie, J. H. Callendar, McGraw Hill Publisher, VII Edition, 1997
- Intentions in Architecture, Christian N.S., 1965
- Form and Structure, Philip. D and Frei-O., 1976
- Architecture and Critical Imagination, Wayne. A., 1978
- Architecture Technology, Thomas. O., 1976
- Architecture and the Environment, Maxwell F. and James D., 1976

K.U.K., B. ARCHITECTURE - VIIth SEM
Advance Building Construction -VI
(AR-403)

Uni. Exam. Marks	-	75
Sessional / Class test Marks	-	75
Duration of Exam.	-	4 hrs
Contact Hrs / week	-	6

Intent:

To make the students learn about aspects of advanced building construction techniques.

Content:

UNIT-I

- Structural glazing, Curtain wall.
- Construction of Basement- Construction details and its treatment.
- Expansion joints in Buildings- their details & treatments.

UNIT-II

- Basic formwork & construction details required for concrete structure such as Shell, Coffers, Waffle roof, Folded Plates & Space Frame, etc.

UNIT-III

- Details of Vertical Transportation System like Lifts & Escalators.

UNIT-IV

- Pre-fabricated components of building like Pre Stressed RCC Beams, Slabs and Girders.
- Pre-engineered buildings.

Instructions for the Examiner:

Four questions of equal marks are to be set from the entire syllabus, one from each unit. Students are to attempt any three questions

Reference:

- Building Construction, Metric, Vol 3 & 4, W. B. Mckay, 1971
- Advanced Building Construction, Vol. 2, Claude Michael, Henry Barritt, Longman Co. 1988
- Barry's Advanced Construction of Buildings, Emmitt, Wiley.
- Building Construction, B.C. Punmia & others, Firewall Media, 2005

K.U.K., B. ARCHITECTURE - VIIth SEM
Structural Design-II
(AR-405)

Uni. Exam. Marks	- 50
Sessional / Class test Marks	- 50
Duration of Exam.	- 3 hrs
Contact Hrs / week	- 4

Intent:

To expose the student to the design of simple concrete structures and behaviour of advance concrete structures.

Content:

UNIT-I

Properties of concrete and reinforcement steels as per B.I.S. specifications
Introduction to the various Design approaches.

UNIT-II

Limit state design of reinforced concrete sections for bending, shear bond strength and development length; Serviceability; Limit states of deflection and cracking.

UNIT-III

Design of footing for isolated columns, Columns, Beams: L and T beams, One- way slabs, Two- way slabs; Detailing of reinforcement.

UNIT-IV

Introduction to framed buildings and pre stressed concrete.

Instructions for the Examiner:

Two questions of 10 marks each are to be set from each unit and the students are to attempt any five questions with a minimum of one from each unit.

Reference:

- R.C.C. Design, B. C. Punmia, Luxmi Publications.
- Reinforced Concrete-Limit State Design, Jain, A.K., Nem Chand & Bros, Roorkee
- Plain and Reinforced Concrete, Vol. I., Krishna, J and Jain, O.P., Nem Chand & Bros, Roorkee.
- Reinforced Concrete Design, Sinha, S.N., Tata McGraw-Hill Pub Co., New Delhi
- Analysis and Design of Reinforced Concrete Elements, Syal, I.C. and Goel A.K., S. Chand
- Pre stress Concrete by Krishna & Raju

K.U.K., B. ARCHITECTURE - VIIth SEM **Building Technology (Electrical)** **(AR-407)**

Uni. Exam. Marks	-	50
Sessional / Class test Marks	-	50
Duration of Exam.	-	3 hrs
Contact Hrs / week	-	3

Intent:

To acquaint the students with the basic principles and general systems, applicable to buildings, regarding electrical installations.

Content:

UNIT-I

Electrical Systems:

Basics of electricity- Single/Three Phase supply- Protective device in electrical installations- Earthing for safety- Types of earthing- BIS specifications.

UNIT-II

Electrical Installations in buildings:

Types of wires, wiring systems and their choice, Planning electrical wiring for building, Main and distribution boards, MCB, Transformers and Switch gears, Layout of substations.

UNIT-III

Principles of Illumination:

Visual tasks, factors affecting visual tasks, Modern theory of light and colour, Synthesis, Additive and subtractive synthesis of colour, Luminous flux, Lux, Candela, Solid angle illumination, Utilization factor, Depreciation factor, MSCP (Mean Spherical Candle Power), MHCP (Mean Horizontal Candle Power).

UNIT-IV

Lighting Design:

Classification of lighting, Artificial light sources, spectral energy distribution, luminous efficiency, colour temperature, colour rendering. Design of modern lighting for stores, offices, schools, hospitals and houses. Elementary idea of special features required and minimum level of illumination required for physically handicapped and elderly in building types.

Instructions for the Examiner:

Two questions of 10 marks each are to be set from each Unit and the students are to attempt any five questions with a minimum of one from each unit.

References:

- Handbook for building Engineers in Metric Systems, NBC, New Delhi.
- Philips Lighting in Architectural Design, McGraw Hill, New York.
- The Lighting of Building, R.G. Hopkinson and J.D. Kay, Faber and Faber, London.
- Electrical and Mechanical Services in High Rise Buildings, A.K. Mittal

K.U.K., B. ARCHITECTURE - VIIth SEM

Architectural Acoustics

(AR-409)

Uni. Exam. Marks	-	50
Sessional / Class test Marks	-	50
Duration of Exam.	-	3 hrs
Contact Hrs / week	-	3

Intent:

Introduction to acoustical provisions in architecture

Content:

UNIT- I

- General principles of sound: reverberation, absorption, reflection etc.
- Principles of good acoustical design in buildings.
- Fundamentals-Sound Waves, Frequency, Wavelength, Intensity, Measure of Sound, Decibel Scale, Speech / Music frequencies and Human Ear, Behavior of sound

UNIT- II

- Acoustics in Buildings -Special requirements for various building types such as Class Room Studios, Lecture halls, Theaters, Auditoriums, O.A.T.
- Sound transmission/absorption indoor noise levels/acoustical defects/ absorption co-efficient.

UNIT-III

- Acoustical materials and their applications.
- Case study of acoustical provisions in an existing auditorium / cinema / theatre / recording studios

UNIT-IV

- Environmental noise control, types of noises, transmission of noise, transmission loss, Noise control / sound insulation, remedial measures & legislation

Instructions for the Examiner:

Two questions of 10 marks each to be set from each unit and the students are to attempt any five questions with a minimum of one from each unit.

References:

- Architectural Acoustics, M. David Egan, 1988
- Acoustic Absorbers and Diffusers, Trevor J.C. and Peter D'Antonio, 2005
- Architectural Acoustics, Christopher N. Brooks, 2002
- Architectural Acoustics Design Guide, James P. Cowan, 2000

K.U.K., B.ARCHITECTURE - VIIth SEM **Interior Design** **(AR-411)**

Uni. Exam. Marks	-	50
Sessional / Class test Marks	-	50
Duration of Exam.	-	3 hrs
Contact Hrs / week	-	3

Intent:

To understand and appreciate the complexities and constraints in the designing and execution of interiors.

Content:

UNIT-I

- Interior design in historical and contemporary perspective.
- Principles of aesthetic composition in interiors.

- Meaning of spatial organization, perceptual needs, psychological needs, convenience, maintenance, durability and image in interior design.

UNIT-II

- Application of colour, form and texture in interiors.
- Use of artificial and natural lighting in interiors.

UNIT-III

- Built-in furniture and movable furniture.
- Interior furnishings
- Interior design accessories and decorative elements.

UNIT-IV

- Traditional and Modern Building Materials for interior finishes.
- Treatments applied to floors, walls, partitions and ceiling for interior design.

Project: - Design of residential / commercial interior.

Instructions for the Examiner:

Two questions of 10 marks each are to be set from each Unit and the students are to attempt any five questions with a minimum of one from each unit.

References:

- Time Saver Standards for Interior Design, Chiara, McGraw Hill.
- Interior Design, Kasu
- Interior Planning and Design, Scalise, Thomson.
- Human Dimension and Interior Space, Payaso J and Zelnite, M, The Architectural Press Ltd, London.
- Interior Design and Decoration, Premavathy & Parveen Pannu, CBS Publications.

K.U.K., B.ARCHITECTURE - VIIth SEM

Building Bye Laws

(AR-413)

Uni. Exam. Marks	-	50
Sessional / Class test Marks	-	50
Duration of Exam.	-	3 hrs
Contact Hrs / week	-	2

Intent:

To acquaint the students with building legislation, basic office procedures and management techniques for an architectural office.

Content:

UNIT I

Introduction to the structure of National Building Code and provisions made therein for construction of buildings with regard to Development Control Rules.

UNIT II

Building Bye Laws of development authorities like HUDA, PUDA, DDA, etc.

UNIT III

Submission drawings for a Residential / Commercial Buildings.

UNIT IV

Structure of Architectural office
Office correspondence, Filing and Record keeping
Dealing with Clients, Consultants, Local Authorities
Book keeping / Accounts

Instructions for the Examiner:

Two questions of 10 marks each to be set from each unit and the students are to attempt any five questions with a minimum of one from each unit.

References:

- National Building Code (Latest edition), BIS.
- HUDA (Erection of Buildings) Regulation, 1979 with up to date amendments.
- PUDA Building Bye Laws.
- DDA Building Bye Laws.
- Professional Practice Book, CoA.