Rs 4/-

UNIVERSITY OF POONA

Circular No. 322 of 1987.

Subject : Revised syllabus of the Architecture Course.

In pursuance of the decision taken by the University authorities, it is hereby notified for the information of all concerned that the syllabus of F.Y., S.Y., T.Y., Fourth year and Final Year B. Architecture is as per Appendix 'A'. The same will be implemented from June, 1988.

The Principals of both the affiliated Colleges in Architecture are requested to bring the contents of this circular to the notice of all concerned teachers and students.

Ganeshkhind,
PUNE-411007
Ref.No. CBE/ 1580
Dated : 27th August, 1987

for Registrar.

Copy forwarded with compliments for information to :

1. The Dean, Faculty of Engineering.
2. The Principals of both the affiliated Colleges in Architecture.
3. The members of the Board of Studies in Architecture.
4. The Deputy Registrar (Examinations)
5. The Assistant Registrar (Examinations)(Coordination Unit)
6. The Assistant Registrar (Exam. S. & T. Unit)
7. The Assistant Registrar (Records and Meetings)
8. The Public Relations Officer.
9. The Law Officer
10. The Statutes Committee Unit (Ref.No.B/120/87 dated 13.8.87)
11. The P.A. to Registrar
12. The University Sub-centres at Ahmednagar, Dhule and Nasik.
13. The General Secretary, PUTA/ PUCTO

5054/1987/VSG

APPENDIX 'A'

Syllabus for Bachelor of Architecture (Revised)(B.Arch)

I. Course Structure :

1. Nomenclature - The name of the course - B.Arch (Bachelor of Architecture).

2. Duration - The duration of the B.Arch. degree course will be of five years. Each year shall be divided into two semesters. This duration of the course includes one semester practical training.

II. Eligibility for Admission

1. A candidate for being eligible for admission to the First year of the B.Arch. degree course-

a. Must have passed the Higher Secondary School Certificate Examination (10+2 pattern) conducted by the Maharashtra State Board of Secondary Education, with the following subjects viz.,
1. English (Higher level or lower level)
2. Mathematics
3. Physics
4. Chemistry.

b. Or an Examination recognised by the University of Poona as equivalent thereto.

c. And in addition must have studied drawing upto the standard prescribed for the Intermediate Examination in Drawing of the Government of Maharashtra, and must have undergone, to the satisfaction of the Principal an entrance test conducted by the college. Weightage for aptitude and entrance test marks should not be more than 50% of the total marks taken for preparing the merit list.

III. Scheme of Examination :

1. The course leading to the degree of Bachelor of Architecture shall be a full time course comprising TEN Semesters, each Semester of the duration of one academic term.

2. There will be an examination at the end of each Semester. A candidate for the degree of Bachelor of Architecture examination will be required to pass all the Ten Semester examinations.

3. a. The First Semester examination and the Second Semester examination in Architecture, together will be called the First Year examination in Architecture (F.Y.B.Arch.)

b. The Third Semester examination and the Fourth Semester examination in Architecture together will be called the second year examination in Architecture;(S.Y.B.Arch.)

c. The Fifth Semester examination and the Sixth Semester examination in Architecture together will be called the Third Year Examination in Architecture;(T.Y.B.Arch.)

d. The Seventh Semester examination and the Eighth Semester Examination in Architecture together will be called the Fourth Year Examination in Architecture. The Eighth Semester examination in Architecture shall be viva-voce to test the candidate in the practical experience he has gained during the period of his training for Semester VIII (Fourth Year B.Arch.).

..2.

e. The Nineth Semester examination and the Tenth Semester examination in Architecture together will be called the final year Architecture examination for the degree of Bachelor of Architecture (FINAL YEAR B.ARCH.)

IV. GENERAL -

1. The Degree of Bachelor of Architecture will not be conferred upon a candidate unless the candidate has passed in all the papers and sessional work * prescribed for each semester examination in accordance with the provisions relating to each semester examination.

2. Wherever sessional work is prescribed for a subject, every candidate must produce a certificate from the Principal of the college that he has satisfactorily completed within the premises of the college a set of laboratory experiments, studio projects, design reports, practical jobs as required / for the subjects, journals containing the record of the laboratory work, shall be counted for assessment against allotted marks for the sessional work in the subject.

Once the sessional work of a candidate has been submitted at the first instance and marked, the same marks will be carried over to the subsequent examination unless he has failed in sessional work and fresh sessional work is presented by the candidate.

The marks obtained for the sessional work will be based on the candidate's day to day work and/or his performance at the various periodic tests. However, examiners in Theory/Practical shall have access to these marks. Utmost secrecy shall be maintained regarding the marks obtained in the sessional work as these marks are taken into consideration for the purpose of declaring the result of the candidate at the University examination.

* (Provided further that for a subject or a Head where no sessional work is prescribed, the passing percentage in that papers will be 40 percent).

Standard of Passing the Examination -

To pass the examination a candidate must obtain a minimum of 40 percent of the full marks in theory paper and 50 percent of the full marks in sessional work / and viva voce.

Those of the successful candidates who obtain 50 percent of the total marks obtainable in both the semesters of a year taken together will be placed in the second class.

Those of the successful candidates who obtain 60 percent of the total marks obtainable in both the semester of a year taken together will be placed in the First class.

Candidate passing the two semester examinations of a year not at one and the same sitting will only be eligible for the award of a prize, medal or scholarships in the examination.

...3..

A candidate who has failed and obtained 50 percent marks in sessional work and 40 percent of marks in theory may, at his option, be excused from appearing in that subject at a subsequent examination and will be declared to have passed the whole examination when he has passed in the remaining subject of the examination in accordance with the above regulations.

RULES OF EXEMPTIONS -

A candidate for being eligible for admission to the odd semester examination in Architecture should have kept attendance 80% of the total working days of semester and prepared the sessional work of that semester of one academic term in a college of architecture to the satisfaction of the principal of the college.

To pass this examination a candidate must secure forty percent of the full marks in theory paper and fifty percent of the full marks in the sessional work both forming independent subject heads.

A candidate who has obtained passing marks as mentioned above may at his option, be excused from appearing in that subject at a subsequent examination and will be declared to have passed the whole examination when he has passed in the remaining subject heads of the examination in accordance with the rules of passing the examination.

SESSIONAL ASSESSMENT -

Sessional work will be assessed by External Examiner along with Internal examiner. This assessment will be carried out either before or immediately after the examination in the said subject, is over.

While conducting this assessment in the subject of

1. Architectural Design
2. Basic Design
3. Design Dissertation
4. Building Technology and materials,

Viva-voce of each candidate will be conducted along with assessment of sessional work by the External Examiner. For the rest of the subjects where sessional work assessment is to be made, will be conducted by both External and Internal Examiner together with allocation of marks as follows.

The Internal assessment by the Internal examiner concerned will be 40% of the total marks and remaining 60% by the External examiner.

This examination will be jointly conducted for allotment of sessional work marks.

...4..

FIRST YEAR EXAMINATION IN ARCHITECTURE (F.Y.B.ARCH.)

SEMESTER I

A candidate for being eligible for admission to the Semester I of the First Year Examination of this University :

I) Must satisfy all the conditions as prescribed in clause III Eligibility for admission.

II) Shall have kept satisfactory attendance of one academic term in the College of Architecture affiliated to this University and completed the work prescribed for the Semester I of the First Year Examination in Architecture to the satisfaction of the Head of the College in which he has been studying.

SEMESTER II

A candidate who has completed the course of Semester I by attending one academic term of Semester I will be permitted to enter upon the course of Semester II.

SECOND YEAR EXAMINATION IN ARCHITECTURE (S.Y.B.ARCH.)

SEMESTER III

Eligibility for admission : A candidate who has completed the course of Semester I and Semester II and cleared the examinations of Semester I an Semester II will be permitted to enter upon the course for Semester III.

OR

A candidate who has failed in not more than two subject heads from the examination of Semester I and Semester II together will be allowed to keep terms for the course of Semester III.

SEMESTER IV

Eligibility for admission : A candidate who has completed the course of Semester III by attending one academic term of Semester III will be permitted to enter upon the course of Semester IV.

THIRD YEAR EXAMINATION IN ARCHITECTURE (T.Y.B.ARCH)

SEMESTER V

A candidate will be held eligible to be admitted to the Semester V Course if he has passed in all subject heads of III and IV Semester examinations. Further a candidate who has failed in not more than two subjects in his from among the total subject heads of III and IV Semester examinations will be allowed to keep terms for the V Semester Course. Such candidates however will have to pass the subject heads in which two subjects within the academic year comprising of his V and VI Semesters.

...5..

FOURTH YEAR EXAMINATION IN ARCHITECTURE (FOUR YR.B.ARCH)

SEMESTER VII

Eligibility for Admission - A candidate will be held eligible to be admitted to Semester VII if he has passed in all subject heads of V and VI Semester examinations. Further a candidate who has failed in not more than two subject heads from among the total subject heads of V and VI Semester examination will be allowed to keep terms for the VII Semester Course. Such candidates however will have to pass the subject backlog of these two subjects within the academic year comprising of his VII and VIII Semester.

FIFTH YEAR EXAMINATION IN ARCHITECTURE (FINAL YR.B.ARCH.)

Eligibility for admission -

A candidate will be held eligible to be admitted to the Semester IX Course if he has passed in all subject heads of VII and VIII Semester examination. Further candidate who has failed in not more than two subject heads from among the total subject heads of VII and VIII Semester examinations will be allowed to keep terms for IX Semester course. Such candidates however will have to pass the subject backlog of these two subjects within the academic year comprising of his IX and X Semester.

...6..

DETAILED SYLLABUS FOR [illegible] SEMESTER I

STUDIO ORIENTED

Lecture Periods per week - 1
Studio Periods per week - 6

Paper - Nil
Session l Assessment - 3[illegible] marks

Objectives : To help student understand the process of manmade design.

Course Outline :

Introduction - Three Basic [illegible] Surface, Form and Space - Their relationship to each other. Training in Art Architecture Appreciation two dimensions design & study in, a) Lines b)Textures c) Colours d) Pattern e) Rhythm f) distortion.

Analytical study of selected building, its form, content, scale & life relationship. Study of interesting portions of bldg. elements composition of surfaces, manipulation of forms in terms of a) Relationship b) Continuity c) Change

Expression of two dimensions [illegible] in three dimensional forms. Simple division of three dimensional [illegible] using Modular Components their stability, balance, [illegible] and continuity.

Space - Inside & Outside [illegible] occupied. It's visual function structures define [illegible] Basic Needs of man (in terms of space) Studies of [illegible] single units of spaces in any [illegible] on function, volume and spatial character. Landscape [illegible] works with natural & man made objects. Concepts for design [illegible] utilitarian objects. Function - aesthetics relationship.

These studies and designs should be through the mediums of Drawings and Models.

Recommended reading -

1. Principles of Basic Design Vol.I to IV By Maier Manfred.
2. [illegible] Handbook
3. Architect's technical reference data.
4. How Origami ar
5. Model building.

BUILDING TECHNOLOGY & MATERIALS - I

Lecture Periods per week - 3
Studio Periods per week - 6

Paper - 3 hours - 100 marks
Sessional Assessment - 100 marks

Objective : To help student understand the basic building elements its function and [illegible] in relation to construction and design.

Course Outline :

Introduction to various elements of building from foundation to roof. Materials commonly used in building construction. Stone - lime - sand - timber - clay - [illegible] - bamboo - brick - cement.

...2..

Foundations :

Strip foundation for load bearing construction using stone and brick masonary upto plinth including plinth formation with coping.

Superstructure -

In brick and stone masonary independently and as composite wall. Spanning of opening e.g. doors, windows, verandah piers. Principles of designed joints in dressed stone e.g. Joggle, Dowel etc.

Recommended Reading :

1. Construction of Building Vol.I to V - By Barry
2. Construction Technology Vol. I to IV - By Chudley R.
3. Building construction Illustrated - By Ching Francis D.K.
4. Vasturachana - Shri. Sane
5. Engineering Materials - By Chaudhary
6. Civil Engineer's Handbook - By Khanna

ENGINEERING - I

Paper - 3 hours - 100 marks
Sessional Assessment - 50 marks.

Lecture Periods per week 4
Studio Periods per week 4

Objective : To help student understand fundamentals of structure starting with applied mechanics.

Course Outline :

1. Statics : Systems of forces and conditions of equilibriums : analytical and graphical treatments.
2. Reactions in beams : Analytical and graphical treatments.
3. Bending moment and Shear force diagrams for simple beams with simple loading.
4. Centre of gravity and moment of inertia of geometrical forces and structural sections; both analytical and graphical treatments
5. Graphical solutions of frames.

Recommended Reading :

1. Strength of materials - By Khurmi R.S.
2. Applied mechanised and strength of materials - By Khurmi R.S.
3. Textoobk of applied mechanics - By Khurmi R.S.

...8..

ARCHITECTURAL DRAWING & GRAPHICS I

Paper - 3 hours - 100 marks — Lecture Periods per week - 1
Sessional Assessment - 100 marks — Studio Periods per week - 3

Objectives : To help students understand the graphic language for communication.

Course Outline :

I) Scale Drawing : Introduction to drawing instruments and materials and their use. Techniques of drafting. Metric scale, construction of projected scales and their use in practice. Measuring and drawing to different scales, objects e.g. furniture, rooms, doors windows and layouts, sub-division of land. Lettering Techniques, applications of drawings & their differenciation. As per I.S.Code symbolic, conventions of indicating different materials.

II) Solid Geometry : Study of solids, geometrical forms in various positions. Various systems of representations including stereographic, projected Isometric, Axonometric. Study of compound solids.

III) Freehand & Sketching : Study of basic elements in drawing i) Form ii) Texture iii) Colour iv) Tone two dimensional compositions of abstract geometrical forms. On site sketching and its rendering.

Recommended Reading :

1. Practical Plane Geometry and Pattern Drawing 1 & 2 - By Surkatha H.C.
2. A new text book of analytical solid geometry - Mathur S.M.
3. Principles of building practice - By Shah & Kale.
4. Architectural Graphics - Ching Frank
5. Architectural Graphics - Martin C.Leslie.

DESIGN FUNDAMENTALS IN ARCHITECURE - I

Paper - 2 hours - 50 marks — Lecture Periods per week - 2
Sessional Assessment - 50 marks — Studio Periods per week - 2

Objectives : To help student understand the genesis of Architecture and acquaint with discipline of Architecture.

Course Outline :

The professional and practice of an Architect, its relationship with different disciplines and the relevance of his role in the present context.

Understanding the relevance of Art, Craft and Technology to Architecture.

Approach to design of a building type with relation to, function, structure, site, climate, materials, technology and services.

Recommended Reading :

1. Design fundamentals in Architecture - By Pramar V.S.
2. Design in Architecture - By Broadbent G.

...9..

WORKSHOP - I

Sessional Assessment - 50 Marks

Lecture Periods Per Week - Nil
Studio Periods Per Week - 3

Objective : To help student acquire necessary skills in constructing three dimensional forms in different materials using different scales and also develop dextricity of hand in manipulation of different materials.

Course Outline :

Carpentry , Carpenter's tools and their use. Elementary Joinery in wood. Model Making in - Paper card board, Thermocole, Clay, Plaster of Paris, Wires, Sticks, Plastic Sheets etc.

Recommended Reading :

1. New Origami Art
2. Model Building

DETAILED SYLLABUS FOR B.V.E. ARCH : SEMESTER : II

ARCHITECTURAL DESIGN - I Sem. II

Paper : 100 marks (6 hrs)
Sessional Work : 100 marks

Lecture Periods per week - 1
Studio Periods per Week - 7

Objectives : To help student in identifying the simple architectural design problems and conceiving and presenting the appropriate solutions based on the related knowledge acquired.

Course out line :

1. Study and use of anthropometric data
2. Analysis of a space in terms of usable/unusable areas of circulation.
3. Primary structural requirements of such space and solutions for same.
4. Spatial layout of known spaces.
5. Accomodating a function items of orientation, circulation and structure.
6. Designing of simple structures involving one function.

e.g. Bus shelters, Road side furniture; Kiosk/Cabins.entrance gates, single room shelters etc.

Recommended Reading :

A. Metric Handbook: Graphic Standards Planning by E & O.E., Kumaya by Prof.Madhav Achwal.

...10..

ARCH. DRAWINGS AND GRAPHICS II

Paper : 50 Marks
Sessional Work : 100 marks

Lecture periods per week - Nil
Studio Periods per week - 7

Objectives : To help student in acquiring skills to express more complex objects through graphic presentation.

Course Out Line :
Basic Drawing : Use of non-conventional presentation techniques three dimensional samples drawings (Crayons, Pastels, Water Colours Collage). Other elements of presentation - patterns landscape elements, cars people etc.

Solid Geometry : Study of simple compound solid objects. Penetration of solids through one another. True shape of section. Building elements and its geometry.

Free-hand & Sketching : Three dimensional compositions of solids surfaces, sculptures, lines etc. On site sketching of urban spaces interiors, (Special emphasis should be given on selection of viewers location and resultant composition) rendering of sketches Three Dimensional Shapes sketches imagined/simulated from a given plan.

Recommended reading : Same as for Sem. I

BUILDING TECHNOLOGY AND MATERIALS II

Paper : 100 marks
Sessional Work : 100 marks

Lecture Periods per week - 3
Studio Periods per week - 5

Objectives : To make students understand complexities of construction and its relevant usage with emphasis on timber construction.

Course Outline : Introduction to frame structure with particular reference to timber for domestic construction.

1. Timber joints for different conditions.
2. Timber floor construction using single span double span, composite construction-using steel beams and timber joist with exposed timber floors or using other natural stone paving with suitable backing.
3. Balconies or similar projections in timber joists,
4. Timber single flight staircase construction.
5. Timber roofs using lumber couples, closed coupled, collar roofs using different covering materials.
6. Concept of timber truss - introduction to king and queen post trusses and its applications.

Adhesives/Glues Paints and Polishes for timber work.
Roofing Materials - Asbestos cement sheets, corrugated Iron sheets, Aluminium sheets, Asphaltic sheets, Mangalore and other clay tiles, stones.

Recommended reading : Same as for Sem. I

...11..

ENGINEERING II

Paper : 100 marks
Sessional Work : 50 marks

Lecture Periods Per Week - 4
Studio Periods Per Week - 2

Objectives : To acquiant student to the behavior of materials under stress.

Course Out Line : 1. Stress, Strain, Elastic constants, elastic behavior of material and Hook's law and yield point; Stress strain diagrams for steel, timber and concrete.

2. Compressive, Tensile and shear stresses and strains.
3. Concept of strain energy : Simple examples of work and strain energy under direct load.
4. Principal stresses, Principal planes-concept and use of formulas (no derivation expected)
5. Theory of simple loading.
6. Bending moment and moment of resistance, section modulus.
7. Bending and shear stress distribution in simple sections.
8. Composite beams, flitched beams (concept of equivalent section)
9. Direct and Bending stresses in compression Members.
10. Dead load, Live load, Wind load and seismic load.
11. Analytical methods for solution of frames.

Recommended Reading : Same as for Sem. I.

WORKSHOP - II

Paper - Nil
Sessional Assessment - 50 marks

Lecture Periods Per Week - Nil
Studio Periods per week - 3

Objective : To help student acquire the skills in handling building materials as also to construct complicated constructions in the model forms.

Course Outline :

To acquaint the students in use of tools for stone masonary, brick masonary, surface covering.

, separation of building models based on Architectural design programmes.

---

pl.51-81(1987)
Sra.