

Important

Academic Rules

Scheme of

Studies & Syllabus



Bachelor of Architecture (1st Year)
(Effective from 2010-2011)



**LINGAYA'S
UNIVERSITY**
choose to know

(u/s 3 of UGC Act 1956)

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ABBREVIATIONS/DEFINITIONS

- "AC" means, Academic Council of the University.
- "BOM" means, the Board of Management of the University.
- "BOS" means, the Board of Studies of the Department.
- "CAU/AUC-option" CAU/AUC means change from Credit to Audit option / change from Audit to Credit option
- "Class/Course Committee" means, the Class/Course Committee of a class/course.
- "Course" means, a specific subject usually identified by its course-number and course-title, with a specified syllabus/course-description, a set of references, taught by some teacher(s)/course- instructor(s) to a specific class (group of students) during a specific academic-term/semester/year.
- "COE" means, the Controller of Examinations
- "Course Instructor" means, the teacher or the Course Instructor of a Course.
- "Curriculum" means the set of Course-Structure and Course-Contents.
- "DAA" means, the Dean of Academic Affairs.
- "DAAB" means Departmental Academic Appeals Board.
- "DEC/PEC" means Dissertation Evaluation Committee/Project Evaluation committee.
- "Department" means a group in the University devoted to a specific discipline also called a School. Department and School are used interchangeably.
- "DSA" means, Dean Student Affairs.
- "Faculty Advisor/Class Counsellor" means, the Faculty Advisor or the Panel of Faculty Advisors, in a Parent Department, for a group (admission-batch) of students. Also known as Class Counsellor.
- "DRPC" means Doctoral Research Programme Committee
- "Grade Card" means the detailed performance record in a term/semester/year/ programme.
- "He" means both genders "he" and "she"; similarly "his" and/or "him" includes "her" as well, in all the cases.
- "HOD" means, the Head of the Department.
- "MET" means Make-up End Term
- "MES" means Make-up End semester
- "MEY" means Make-up End Year
- "MLC" means Mandatory Learning Course.
- "Parent Department" or "Degree Awarding Department" means, the department that offers the degree programme that a student undergoes.
- "Project Guide" means, the faculty who guides the Major Project of the student.
- "RB" means Research Board
- "RPAC" means Research Progress Assessment Committee
- "Regulations" means, set of Academic Regulations.
- "TEC" means Thesis Evaluation Committee
- "University" means, Lingaya's University, Faridabad (LU)
- "VC" means, the Vice Chancellor, Lingaya's University, Faridabad.

CODE OF CONDUCT AND ETHICS FOR STUDENTS

1. Wear decent dress respecting his/her modesty as well as that of others.
2. Expected to respect and show regard for teachers, staff and fellow students.
3. Inculcate civic sense and sensitivity for environment protection.
4. Not to resort to collection of funds for any use without written permission of VC.
5. To exhibit exemplary behaviour, discipline, diligences, and good conduct and are a role model to other students.
6. Not to indulge in offences of cognizable nature.
7. Not to practice casteism, communalism.
8. Not to indulge in any other conduct unbecoming of a professional student of the University.
9. Not to outrage the status, dignity and honour of any person.
10. Not to get involved in physical assault or threat, and use of physical force against any body.
11. Not to expose fellow students to ridicule and contempt that may affect their self esteem.
12. Not to form any kind of student's Union, etc.
13. Not to take active or passive part in any form of strikes/protests.
14. To observe all safety precautions while working.
15. Not to disfigure/damage the University property, building, furniture, machinery, library books, fixtures, fittings, etc. (Damage / loss caused shall have to be made good by the students).
16. Use of mobile/video camera phones is strictly prohibited inside the examination halls, class rooms, laboratories and other working places. LU has the right to confiscate the mobile phones in case of any violation.
17. Not to indulge in ragging/teasing, smoking, gambling, use of drugs or intoxicants, drinking alcohol, rude behavior, and use of abusive language.
18. Not to resort to violence, unruly travel in buses, bullying, threatening and coercing others for undesirable act, such as preventing from attending classes, writing exam. / tests, etc etc.
19. All the students of the LU shall be under the disciplinary control of the VC.
20. Students are deemed to be under the care and guidance of parents. It is obligatory for the former to appraise their progress (given by the CC) to the parents.
21. Fine, if ever imposed, is only to improve discipline and shall be paid promptly.
22. While on campus, students have to take care of their belongings and no responsibility for any loss or damage can be held by the University.
23. Every student shall produce the I-Card on demand, and if lost, get a duplicate issued.
24. The students must attend all lectures, tutorials and practical classes in a course punctually (The attendance will be counted course-wise).
25. To abide by the rules and regulations of the University stipulated from time to time.

IMPORTANT ACADEMIC RULES

B.Arch. Degree Programme

GENERAL

- The Regulations may evolve and get revised/refined or updated or amended or modified or changed through approvals from the Academic Council from time to time, and shall be binding on all parties concerned, including the Students, Faculty, Staff, Departments, University Authorities and officers. Further, any legal disputes shall be limited to the legal jurisdiction determined by the location of the University and not that of any other party.
- If, at any time after admission, it is found that a candidate had not in fact fulfilled all the requirements stipulated in the offer of admission, in any form whatsoever, including possible misinformation etc., the matter will be reported to the AC, recommending revoking the admission of the candidate.
- The LU reserves the right to cancel the admission of any student at any stage of his study programme in the University on the grounds of unsatisfactory academic performance or indiscipline or any misconduct.
- Medium of Instruction shall be English.

PROGRAMME

- The minimum duration of the programme leading to B.Arch. degree will be five years and maximum would be eight years.
The total course package for a B.Arch. Degree Programme will typically consist of the following components.

(i)	General courses	(GEN)
(ii)	Engineering Science and Technical Arts	(ESTA)
(iii)	Core Courses	(DCC)
(iv)	Elective Courses	

An Elective Course can be any of the following:

a)	Departmental Elective	(DEC)
b)	Open Elective:	(OE)

(v)	Mandatory Learning Courses	(MLC)
(vi)	Thesis (Design Project)	(TH)
(vii)	Internship	(INT)
- The Minimum Credit Requirement for the B.Arch. Degree programme is 220. However the credits required for consideration for honors degree will be 230.
- The thesis topic will be assigned in fourth year. Appropriate double-letter grade is awarded as per the evaluation scheme which will be considered for AGPA and CGPA calculations. It is recommended that atleast one external expert from industry/academia may be a member of the

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evaluation team of four persons (two professors, external expert and respective project guide).

- MLC must be completed by a student at appropriate time or at his convenience. The 'S' grade is awarded for satisfactory completion of the course and 'N' grade is awarded for non-satisfactory completion of the course. In case 'N' grade is awarded, the student has to re-register for the same course if no alternative options are available. However, one can opt for other courses if provided with multiple options. The 'S' and 'N' grades do not carry grade-points and, hence, are not included in the AGPA and CGPA computations.

Courses that come under this category are the following:

- (a) Environment Science and Ecology
 - (b) Community Service Oriented Project
 - (c) Professional Development Courses
- Students admitted to the University will be required to take suitable additional Courses in Communication Skills, if found deficient.

ASSOCIATION

- Every student of the University shall be associated with Parent Department (Degree Awarding Department) offering the degree programme that the student undergoes throughout his study period, right from the very first day of admission into the programme.
- The schedule of academic activities for a year, including the dates of registration, mid-year examinations, end-year examination, vacation, etc. shall be referred to as the Academic Calendar of the year, and announced at least two weeks before the closing date of the previous year.

PRE-REGISTRATION

- In order to facilitate proper planning of the academic activities of an year, it is essential for the students to declare their intent to register for a course well in advance, before the actual start of the academic year, through the process of Pre-Registration, which is mandatory for all those students of second or subsequent year who propose to deviate from recommended scheme of studies.
- Pre-registration is an expression of intention of a student to pursue particular course(s) in the next year. It is information for planning for next year. Every effort will be made to arrange for a course opted by the student. However, it is not obligatory on the part of the university to offer the course(s) and no course may be offered if the number of students opting for the course is less than 15 or 25 percent of the admission strength whichever is less.
- If a student fails to pre-register it will be presumed that he will follow suggested normal scheme of studies provided that he is progressing at a normal pace. For remaining students the HOD of the parent department will plan for courses as per the convenience of the department.

REGISTRATION TO COURSES

- Every student after consulting his Faculty-Advisor is required to register for the approved courses with the HOD of parent department at the commencement of each year on the days fixed for such registration as notified in the academic calendar.
- A student shall register for courses from amongst the courses being offered in an year keeping in mind the minimum and maximum credits allowed for a degree and other requirements i.e. pre-requisite if any, YGPA and CGPA after consulting the Faculty Advisor. No registration will be valid without the consent of HOD of the parent department.
- A student will be permitted to register in the next year as per the suggested normal scheme only if he fulfills the following Conditions:
 - (a) Satisfied all the Academic Requirements to continue with the programme of studies without termination.
 - (b) Cleared all university, library and hostel dues and fines (if any) of the previous year.
 - (c) Paid all required advance payments of the university and hostel for the current year.
 - (d) Not been debarred from registering on any specific ground by the University.
- The students will be permitted to register for course(s) being offered in an year other than his normal suggested scheme provided that the time table permits.
- The registration in the critical cases will be done as per the priority given below:
 - (a) Fulfillment of minimum credit requirement for continuation,
 - (b) The completion of programme in minimum period needed for degree, (Those who need to improve YGPA/CGPA)
 - (c) The fulfillment of pre-requisite requirement of courses.
- Students who do not register on the day announced for the purpose may be permitted LATE REGISTRATION up to the notified day in academic calendar on payment of late fee.
- REGISTRATION IN ABSENTIA will be allowed only in exceptional cases with the approval of the DAA after the recommendation of HOD through the guardian of the student.
- Credits will be awarded in registered courses only.

CREDIT LIMITS

- A full time student of the B.Arch. degree programme must register for a minimum of 30 credits, and up to a maximum of 50 credits in a Year. However, the minimum / maximum credit limit can be relaxed by the DAA on the recommendation of the HOD, only under exceptional circumstances.
- Professional Development courses are one credit courses each, with multiple options, to be completed at student's convenience in each year.

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Some of them may be mandatory and others two-letter grade category. However, registration has to be done for all courses.

CHANGE IN REGISTRATION

- A student has the option to ADD courses for registration till the date specified for late registration in the Academic Calendar.
- On recommendation of the Teaching Department as well as the Parent Department, a student has the option to DROP courses from registration until two weeks after the commencement of the classes in the year, as indicated in the Academic Calendar.
- A student can register for auditing a course, or a course can be converted from credit to audit or from audit to credit, with the consent of the Faculty Advisor and Course Instructor within two weeks after the commencement of the classes in a year as indicated in the Academic Calendar. However, core Courses shall not be available for audit.

ATTENDANCE REQUIREMENTS

- LU academic programmes are based primarily on the formal teaching-learning process. Attendance in classes, participating in classroom discussions and participating in the continuous evaluation process are the most essential requirements of any academic programme.
- Attendance will be counted for each course scheduled teaching days as per the academic calendar.
- The attendance requirement for appearing in end-year examination shall be a minimum of 75% of the classes scheduled in each course.

LEAVE OF ABSENCE

- The leave of absence must be authorized as per regulations.
- A student short of attendance in a course (less than needed after leave of absence and condonation by VC) will be awarded 'FF' grade in the course.
- All students must attend all lecture, tutorial and practical classes in a course. The attendance will be counted course wise.
- To account for approved leave of absence e.g. representing the University in sports, games or athletics; professional society activities, placement activities, NCC/NSS activities, etc. and/or any other such contingencies like medical emergencies, etc., the attendance requirement shall be a minimum of 75% of the classes scheduled in each course to appear in the examination.
- A student with less attendance in a course during a year, in lectures, tutorials and practicals taken together as applicable, shall be awarded 'FF' grade in that course, irrespective of his academic performance, and irrespective of the nature of absence.
- If the period of leave is more than three days and less than two weeks,

prior application for leave shall have to be submitted to the HOD concerned, with the recommendation of the Faculty-Advisor, stating fully the reasons for the leave requested, along with supporting documents.

- If the period of leave is two weeks or more, prior application for leave shall have to be made to the DAA with the recommendations of the Faculty-Advisor; HOD concerned stating fully the reasons for the leave requested, along with the supporting documents. The DAA may, on receipt of such application, grant leave or decide whether the student be asked to withdraw from the course for that particular year because of long absence.
- If a student fails to apply and get sanction for absence as in above two cases, his parent/guardian may apply to the VC with reasons duly recommended by the faculty advisor, HOD and DAA and explain in person to the VC the reasons for not applying in time. The VC will consider on merit and decide to grant the leave or withdrawal from the course for that particular year subject to any condition that he may like to impose. The decision of the VC shall be final and binding.

ABSENCE DURING EXAMINATIONS

- A student who has been absent during Mid-year Examination due to illness and/or any exigencies may give a request for make-up examination within one week after the Mid-year Examination to the HOD with necessary supporting documents in person. The HOD may consider such requests depending on the merits of the case, and after consultation with the course instructor, may permit the Make-up examination for the student concerned. However, no makeup examination will be permitted if the attendance in the course is less than 60% till the date of examination. This facility can be available only once in a year.
- In case of absence from End-year Examination of a course(s) on Medical ground and/or other special circumstances, the student can apply for award of 'I' grade in the course(s) with necessary supporting documents and certifications by an authorized person to the HOD within one week after the End-year Examination. The HOD may consider the request, depending on the merit of the case, and after consultation with the Course(s) Instructor(s)/ faculty advisor permit the MEY Examination for the student concerned. The student may subsequently complete all course requirements within the date stipulated by BOS (which may possibly be extended till first week of trimester under special circumstances) and 'I' grade will then be converted to an appropriate Double-letter grade, as per Clause No: G5.9. All the details of such a decision with date of finalizing the grade shall be communicated to DAA. If such an application for the 'I' grade is not made by the student then a double-letter grade will be awarded based on his year performance.

COURSE CREDIT ASSIGNMENT

- Every Course comprises of specific Lecture-Tutorial-Practical (L-T-P) Schedule. The credits for various courses are shown in the Scheme of Studies and Syllabus.
- The Academic Performance Evaluation of a Student shall be according to a Letter Grading System, based on the Class Performance Distribution.
- The double-letter grade (AA, AB, BB, BC, CC, CD, DD, FF) indicates the level of academic achievement, assessed on a decimal (0-10) scale.

Letter-Grades and Grade-Points:

LETTER-GRADE	GRADE-POINTS	REMARKS
AA	10	
AB	9	
BB	8	
BC	7	
CC	6	
CD	5	
DD	4	
FF	0	
I	-	Fail
U	-	Incomplete
W	-	Audited
S	-	Withdrawal
N	-	Satisfactory
		Unsatisfactory

DESCRIPTION OF GRADES

- An 'AA' grade stands for outstanding performance, relative to the class which may include performance with previous batches. The Course Instructor is supposed to take utmost care in awarding of this highest double-letter grade.
- The 'DD' grade stands for marginal performance and is the minimum passing double-letter grade.
- The 'FF' grade denotes very poor performance, i.e. failure in a course, and the Course Instructor is supposed to take utmost care while awarding this lowest double-letter grade.
- A student, who obtains 'FF' grade in a core course, has to repeat (re-register) that core course, in subsequent years whenever the course is offered, until a passing grade is obtained. However, for an elective course in which 'FF' grade has been obtained, the student may either repeat the same course, or register for any other elective course.
- An 'I' grade denotes incomplete performance in any course due to absence at the end year examination (see also Clause No: G7.4). When the 'I' grade is converted to a regular double letter grade, a penalty of ONE Grade-Point is imposed, by awarding the double-letter grade that is immediately below the one that the student would have otherwise received except when the student has 95% attendance record in the

subject concerned. For example, if on the basis of the performance including MEY Examination, a student gets AB grade, he will be awarded BB grade if not under exception rule.

- 'U' grade is awarded in a course that the student opts to register for audit. It is not mandatory for the student to go through the entire regular process of evaluation in an audit course. However, the student has to go through some process of minimal level of evaluation and also the minimum attendance requirement, as stipulated by the Course Instructor and approved by the corresponding BOS, for getting the 'U' grade awarded in a course, failing which that course will not be listed in the Grade Card.
- A 'W' grade is awarded when the student withdraws from the course. Withdrawal from a course is permitted only under extremely exceptional circumstances (like medical emergencies, family tragedies and/or other unavoidable contingencies) and has to be recommended by the HOD and approved by the DAA. However, no withdrawal is permitted after the finalization of the grades in the year.
- 'S'/'N' These grades are awarded for the Mandatory Learning Courses. The 'S' grade denotes satisfactory performance and completion of a course. The 'N' grade is awarded for non-completion of course requirements and the student will have to register for the course until he obtains the 'S' grade.

FEEDBACK TO STUDENTS

- A student requires feedback on the progress of his learning. For this purpose, the Instructor will conduct at least two quizzes for a theory course in a year before Mid-year Examinations. The quizzes will form a component of class work, the other components being tutorials, home assignments or any other mode.
- For a laboratory course, the continuous assessment's feedback will be given through the laboratory records which are required to be submitted after performing the experiment in the next laboratory class.
- The continuous feedback on project/major project will be through project diary and interim report.

EVALUATION

- The double-letter grade awarded to a student in a course other than a practical course i.e. O-O-P course for which he has registered, shall be based on his performance in quizzes, tutorials, assignments etc., as applicable, in addition to two mid-year examinations and end-year examination. The weightage of these components of continuous evaluation may be as follows:

End-Year Examination (EYE)	:	50%
Mid-Year Examinations (MYE) (2, 15% each)	:	30%
Quizzes, Tutorials, Assignments, etc. (Several over the year)	:	20%
Total	:	100%

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- The double letter grade awarded to the student in a practical course i.e. 0-0-P course will be based on his performance in regular conduct of experiments, viva voce, laboratory report, quizzes etc., in addition to end year practical examination. The weightage of the components of continuous evaluation may be as follows:

Conduct of Experiments/ Studio Work (as per syllabus)	:	40%
Lab Record / Portfolio	:	10%
End-year Examination (including Viva Voce)	:	50%
Total	:	100%

SCHEME OF EXAMINATION

- The duration of examinations for a theory course will be 3 hours for end-year examination and 1½ hours for mid-year examination.
- The pattern of question paper/examination will be as under:
- **Theory Courses:**

The University shall conduct the End-year examination for all theory courses being taught in the year.

 - (a) There will be eight questions in all distributed over all the units in a course syllabus. The question paper will be in three parts with weightage 20 percent, 40 percent and 40 percent respectively.
 - (b) Part-A will be short answer type with multiple parts covering all the units in the syllabus, which will be compulsory.
 - (c) Part-B will have three questions from any three units, which will have long answers of derivation/descriptive type. Two questions are to be answered from this part.
 - (d) Part-C will consist of four questions from the remaining four units and they will be of problem solving type in order to measure ability on comprehension / analysis / synthesis / application. The relevant data will be made available. The student is required to solve two questions. However, for Part-C, the external examiner may select the questions from the question bank supplied by University.
- Students are allowed in the examination the use of single memory, non-programmable calculator. However, sharing of calculator is not permitted.
- **Laboratory Courses:**
 - (a) The End-year Examination in laboratory course will be conducted jointly by an external examiner (other than the instructor) and an internal examiner (the coordinator / instructor) jointly.
 - (b) The student will be given randomly an experiment to perform from within the list of experiments in the course.
 - (c) No change in the experiment will be permitted after the draw, if the student had performed the same in the class.

- **Mid-year Examination:**

Question 1 is compulsory covering all topics taught till then. Questions 2 and 3 will be essay type, out of which a student will answer any one. Questions 4 and 5 will be set to measure ability of analysis / comprehension / synthesis / application and the student will answer any one of these two.

TRANSPARENCY

- The answer books of all Mid-year Examination and End-year Examination will be shown to the students within three days of the last paper. It is the responsibility of the student to check this evaluation and affix his signature in confirmation.
- If the student finds some discrepancy, he should bring it to the notice of the Course Coordinator. The Course Coordinator will look into the complaint and remove the doubts of the student and proceed with the work of grading.
- The entire process of evaluation shall be transparent, and the course instructor shall explain to a student the marks he is awarded in various components of evaluation.

RESULT

- The final marks shall be displayed on the notice board for ONE day, (the date of which will be indicated in the academic calendar). A student can approach the concerned course instructor(s) for any clarification within Two days of display. The process of evaluation shall be transparent and the students shall be made aware of all the factors included in the evaluation. In case of any correction, the course instructor shall have to incorporate the same before finalization of the grades.
- The Student's Grade Card shall contain the Letter-Grade for each registered course; along with the YGPA at the end of the year, and the CGPA at the completion of the programme.

APPEAL FOR REVIEW OF GRADE

- If a student is not satisfied with the award of the grade after the announcement of the grades, he may appeal on a Grievance Form duly filled in along with the fee receipt for this purpose to the HOD of the parent department within one week of the following year. The HOD will forward the form along with his recommendation based on the records of the case to DAAB within the date specified in the Academic Calendar.
- The fee for such an appeal will be decided from time to time. If the appeal is upheld by DAAB, then the fee amount will be refunded to the student without interest.

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- VC shall have power to quash the result of a candidate after it has been declared, if
 - (a) He is disqualified for using malpractice in the examination;
 - (b) A mistake is found in his result;
 - (c) He is found ineligible to appear in the examination

AWARD OF DIVISIONS

- The overall performance of a student will be indicated by two indices:
 - (i) **YGPA** which is the Year Grade Point Average
 - (ii) **CGPA** which is the Cumulative Grade Point Average

YGPA for a year is computed as follows:

$$YGPA = \frac{\sum C_i G_i}{\sum C_i}$$

Where,

C_i denotes credits assigned to i^{th} course with double-letter grade, and G_i denotes the grade point equivalent to the letter grade obtained by the student in i^{th} course with double-letter grade, including all 'FF' grades in that year.

CGPA is computed as follows:

$$CGPA = \frac{\sum C_i G_i}{\sum C_i}$$

Where,

C_i denotes credits assigned to i^{th} course with double-letter grade, and G_i denotes the grade point equivalent to the letter grade obtained by the student in i^{th} course for all courses with double-letter grades, including all 'FF' grades in all years at the end of the programme.

For CGPA calculation, the following grades are to be counted:

- (i) Grades in all core courses,
 - (ii) The best grades in the remaining eligible courses to fulfill the minimum credits requirement for a programme.
- The degree will be awarded only upon compliance of all the laid down requirements for programme as under:
 - (i) There shall be University requirement of earning a minimum credits for a degree, satisfactory completion of mandatory learning courses and other activities as per the degree programme structure.
 - (ii) There shall be a minimum earned credit requirement on all Departmental core courses, Elective courses and Thesis as specified by BOS.
 - (iii) There shall be a maximum duration for complying to the degree requirement.
 - (iv) The candidate will be placed in First Division with Honours/First Division with Distinction/First Division/Second Division which will be mentioned on the degree certificate as under.

DIVISION	CONDITIONS TO BE FULFILLED
First Division with Honours	CGPA \geq 8.5 No 'FF', N or W grade in any course during the programme and total 230 credits
First Division with Distinction	CGPA \geq 8.5
First Division	CGPA \geq 6.75
Second Division	CGPA \geq 5.0 but $<$ 6.75

Note: Although, there is no direct conversion from grades to marks, however, for comparison purposes percentage of marks may be assumed to be CGPA multiplied by nine.

B. ARCH. DEGREE REQUIREMENTS

The requirements of the award of B.Arch. Degree programme are as follows:

(a) **University Requirements:**

- (i) Minimum Earned Credit Requirement for Degree is 220 for the programme. However the credits required for consideration for honours degree will be 230.
- (ii) Satisfactory completion of all Mandatory Learning Courses.

(b) **Programme Requirements:**

Minimum Earned Credit Requirements on all Core Courses, Elective Courses and Thesis and Internship as specified by the BOS.

- (c) The Maximum duration for a student for complying to the Degree Requirement is EIGHT years from date of first registration for first year. However, first three years have to be completed in FIVE Years.
- (d) The CGPA at the end of programme is atleast 5.0.

GRADE IMPROVEMENT

- A student may be allowed to improve the YGPA in an appropriate year, if his YGPA falls below 5.0. Similarly, any student may be allowed to improve performance in any course provided the course is being floated and available.

TERMINATION FROM THE PROGRAMME

A student shall be required to leave the University without the award of the Degree, under one or more of the following circumstances:

- (a) If a student fails to earn the minimum credits specified below:

CHECK POINT	CREDIT THRESHOLD
End of FIRST year	30
End of SECOND year	65
End of THIRD year	105
End of FOURTH year	145

Note: The period of temporary withdrawal (refer: Clause No. G8.1) is not to be counted for the above Credit Threshold.

- (b) If a student is absent for more than 4 (Four) weeks at a stretch in a Term

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without sanctioned leave.

- (c) Based on disciplinary action by the AC, on the recommendation of the appropriate committee.

WITHDRAWAL FROM PROGRAMME

Temporary:

- A student who has been admitted to a degree programme of the University may be permitted to withdraw temporarily, for a period of one term or more, on the grounds of prolonged illness or grave calamity in the family, etc., provided:
 - (i) He applies to the University stating fully the reasons for withdrawal together with supporting documents and endorsement from his parent/guardian
 - (ii) There are no outstanding dues or demands, from the Departments/ University /Hostels/Library and any other centers;
 - (iii) Scholarship holders are bound by the appropriate Rules applicable to them.
 - (iv) The decision of the VC of the University regarding withdrawal of a student is final and binding.
- Normally, a student will be permitted only one such temporary withdrawal during his tenure as a student and this withdrawal will not be counted for computing the duration of study.

Permanent:

- Any student who withdraws permanently admission before the closing date of admission for the academic year is eligible for the refund of fee as per the University rules. Once the admission for the academic year is closed, the following conditions govern withdrawal of admission:
- A student who wants to leave the University for good, will be permitted to do so (and take Transfer Certificate from the University, if needed), only after clearing all the dues for the remaining duration of the course.
- A student who has received any scholarship, stipend or other form of assistance from the University shall repay all such amounts, in addition, to clearing all the dues for the remaining duration of the course.
- The decision of the VC regarding all aspects of withdrawal of a student shall be final and binding.

Department of Architecture

DEGREE OBJECTIVE

Architecture can be conceived as comprising of two major stages:

- Production of architectural thought and
- The implementation of that architectural thought.

While the production of architectural thought requires an understanding of Art, Culture, Humanities, context and identity; complexities of physical and social contexts etc that shape architecture and help in the creation of "Creative innovations", the implementation of the architectural thought requires sound technical knowledge in the field of structures, building construction, Illumination, Acoustics, Services etc essential for the implementation and execution of the project. In addition, in the digital world, architects today should be well equipped with the knowledge of computers.

The responsibilities assigned to an architect require him to be an effective manager. An architect has to be both a team player and a leader. Not only is he required to deal with his clients and ensure the best out of his design team, but also included in his list of activities is to co-ordinate between various design and technical consultants and supervise work at site. In effect, an architect is a project planner and manager.

The goal of this B.Arch. degree programme is therefore, to build a broad and balanced foundation for this knowledge and these abilities. The potential variety of an architect's practice is mirrored in the educational programme.

Scheme of Studies
B. Arch. Degree Programme (Regular)
Stage-I

1st Year

THEORY							
Course No.	Course Name	Periods	Evaluation Scheme				Cr
			Components of Evaluation with Weightage (%)				
		L-T-P	Class Work	MYE (1½ Hrs)	EYE (3 Hrs)	Total	
AR-101	Principles of Architecture	2-0-0	20	15+15	50	100	4
AR-102	History of Architecture - I	3-0-0	20	15+15	50	100	6
AR-103	Building Materials and Processes	2-0-0	20	15+15	50	100	4
CE-101	Environmental Science & Ecology*	1-0-0	20	15+15	50	100	2
CE-102	Structures in Architecture - I	2-0-0	20	15+15	50	100	4
AR-104	Architecture and the Social Sciences	2-0-0	20	15+15	50	100	4

PRACTICAL / DRAWING / DESIGN							
Course No.	Course Name	Periods	Evaluation Scheme				Cr
			Components of Evaluation With Weightage (%)				
		L-T-P	EXPT.	Lab Record	EYE (2 Hrs)	Total	
AR-155	Basic Design and Visual Arts - I	0-0-6**	40	10	50	100	6
AR-156	Architectural Drawing and Graphics	0-0-6**	40	10	50	100	6
AR-157	Building Construction Technology - I	0-0-6**	40	10	50	100	6
AR-158	Model Making Workshop	0-0-3	40	10	50	100	3
AR-159	Computer Applications in Architecture - I	0-0-2	40	10	50	100	2
PD-192	Personality Skills*	0-0-2	40	10	50	100	1
PD-191	Co-Curricular Activities		40	10	50	100	1***

TOTAL CONTACT HOURS	TOTAL CREDITS
12-0-25 (37)	48+1***

FINAL EVALUATION IN GRADES

(L-T-P-Cr) - Lectures-Tutorials-Practical-Credits

* CE-101 and PD-192 are Mandatory Learning Courses

** One hour for explanation/demonstration

*** One credit to be earned through Co-Curricular Activities outside contact hours.

DETAILED SYLLABUS

AR-101	PRINCIPLES OF ARCHITECTURE	L-T-P	Cr
		2-0-0	4

OBJECTIVE

To introduce the student to the world of architecture and establish the key elements involved in the creation of aesthetically appealing and practically appropriate architecture. The subject is designed to provide an insight into the principles and processes that underpin the discipline of architecture. It is aimed to teach students the key practical and theoretical influences that inform architectural practice enabling students to understand and analyze architecture.

1. **INTRODUCTION TO ARCHITECTURE:** Definition and concepts of architecture and architects through ages; types of architectural projects, role, responsibilities and duties of an architect in a building project; career opportunities in the field of architecture.
2. **FACTORS INFLUENCING ARCHITECTURE:** Climate, topography, materials, economics, socio-cultural and technological influences etc
3. **ELEMENTS OF DESIGN:** Study of functional, aesthetic and structural components of architecture: parameters of design; anthropometrics; human activity and the use of spaces; spaces – their relation, interaction and information in a structure; forms; functions of spaces and their flexibility; elements of structure; natural forms and shapes and their relation in designing; elements of construction and their thoughtful use to enhance designs; problems related to the understanding of the elements of architectural design; concepts of space and form and their perception.
4. **THEORIES ON ARCHITECTURE:** Philosophy of architecture as propagated by some leading architects; study of selected writings and buildings.
5. **VERNACULAR AND RURAL ARCHITECTURE:** Introduction to vernacular and rural architecture and its characteristics; rural environment and its architectural considerations; study of exemplary cases.
6. **DESIGN PROCESS AND ANALYSIS OF BUILDINGS:** Design process – integration of aesthetics and function; understanding of formative ideas, organization concepts, spatial characteristics; massing and circulation in design analysis.
7. **CASE STUDIES:** Case studies of some old and new classical architectural projects from India and abroad with special focus on the above mentioned points.

B. Arch.

Note: Assignments would be in the form of seminars on case studies of architectural projects.

TEXT BOOK

Parmar, V. S., "Design Fundamentals in Architecture", Somaiya Publications Pvt Ltd, 1973.

REFERENCE BOOKS

1. Snyder, J and Catanese, A, "Introduction to Architecture", McGraw-Hill, 1979
2. Farrelly, Lorraine, "The Fundamentals of Architecture", Ava Publishing, 2007
3. Voordt and Wegen, "Architecture in Use", Architectural Press, 2005
4. Smithies, K.W., "Principles of Design in Architecture", Van Nostrand Reinhold Co, 1981
5. Roger H. Clark and Michael Pause, "Precedents in Architecture", Van Nostrand Reinhold Co, 1996

WEB REFERENCES

1. http://en.wikipedia.org/wiki/Architectural_theory
2. <http://www.britannica.com/EBchecked/topic/32876/architecture/31858/Theory-of-architecture>
3. <http://www.greatbuildings.com/>

AR-102	HISTORY OF ARCHITECTURE - I	L-T-P	Cr
		3-0-0	6

OBJECTIVE

History of Architecture provides the connection, context, and roots central for the identity of who we were, who we are, and who we might be. Since architecture is a coherent chain of events, styles, tendencies, beliefs and techniques, studying history of architecture enables the student to gain a direct understanding of how and why architecture is made today, and clues to how architecture can be tomorrow.

1. **ANCIENT ARCHITECTURE:** Art and culture of pre-historic man; stone henge; early Indian architecture up to 3rd century A.D; Indus valley civilization; study of Mohenjodaro and Harrapan architecture and planning; Vedic architecture of India; Vastu purush mandala and other canons of Hindu architecture.
2. **ART AND ARCHITECTURE OF EGYPT:** Evolution of Egyptian architecture- factors affecting development; spatial planning and characteristic features; tombs- mastabas, pyramids; temples; sphinx, obelisks etc

3. **ART AND ARCHITECTURE OF MESOPOTAMIA:** Factors affecting the development of art and architecture of Mesopotamia; spatial planning and characteristic features of the architecture of Sumerian, Babylonian, Assyrian and Persian periods; Ziggurats etc
4. **ART AND ARCHITECTURE OF GREECE AND ROME:** Evolution of Greek and Roman architecture- factors affecting development; characteristic features of Aegean and Helladic architecture; Hellenic and Hellenistic periods; Etruscan architecture and the Roman period; Greek and Roman classic orders; agora and forums; basilicas; coliseum and other important public buildings/ spaces.
5. **CHRISTIAN ARCHITECTURE:** Factors affecting evolution and development of early Christian Byzantine, Romanesque and Gothic architecture; characteristic features and typical examples; spatial planning, construction and other features of basilican church typology; centralized church typology; church and the precinct, cathedrals, monastic establishments, parish churches; elements of special attributes- campanile, raking arcade, wall-passage, triforium architecture, flying buttress, window tracery, stained glass etc; English and French church planning; secular architecture- manor houses, castles; town planning principles.
6. **INDIAN TEMPLE ARCHITECTURE:** Temples: spatial arrangements, construction, ornamentation; elements of special attributes: columns, shikharas; temple complex; characteristic features and typical examples of Indo-Aryan temple architecture- temples of Orissa, Kashmir, M.P, Gujarat etc; Early Chalukyan architecture; the Rashtrakuta style; Hoysala architecture; Dravidian architecture – Pallava, Pandava, Chola, Vijayanagar and Madura styles.
7. **BUDDHIST AND JAIN ARCHITECTURE IN INDIA:** Development and characteristic features; stupas; Buddhist order - Ashoka pillars; Chaityas; rock cut architecture; Viharas etc; Jain architecture

Note: An educational tour/ study tour to the places of architectural interest / building appraisal shall be organized as per the programme. The documentation shall be done in the form of photographs / slides and sketches presented in form of a seminar and written report immediately after the tour / building appraisal.

TEXT BOOK

Hiraskar, G.K., "The Great Ages of World Architecture (with Introduction to Landscape Architecture)", Dhanpat Rai Publications (P) Ltd, 2009

REFERENCE BOOKS

1. Cruickshank, D., Fletcher, B., Saint A., "Banister Fletcher's - A History of Architecture", Architectural Press, 1996.
2. Brown, Percy, "Indian Architecture – Vol I and II", Apt Books, 1990.
3. Maheshwari and Garg, "Ancient Indian Architecture", CBS, 2003.

B. Arch.

4. Grover, S. K., "Buddhist and Hindu Architecture in India", CBS, 2008.
5. Thapar, B., "Introduction to Indian Architecture", Periplus Editions, 2005.
6. Surendra S., " Indian Architecture : Hindu, Buddhist and Jain", Ajanta Offset and Packaging Ltd., 2006
7. Risebero, Bill, " The Story of Western Architecture", MIT Press, 2001
8. Ching Francis D.K., Jarzombek, Mark M., Prakash, Vikramaditya, "A Global History of Architecture", Wiley, 2006.

WEB REFERENCES

1. http://architecture.about.com/od/periodsstyles/Periods_and_Styles.htm
2. <http://www.historyworld.net>
3. <http://www.nationalgeographic.com>
4. http://en.wikipedia.org/wiki/History_of_architecture
5. <http://vlib.iue.it/history/topical/architecture.html>

AR-103	BUILDING MATERIALS AND PROCESSES	L-T-P	Cr
		2-0-0	4

OBJECTIVE

The course is designed to expose the students to both vernacular and contemporary construction methods and materials, their properties, testing and uses.

1. **SOILS, RURAL AND TRADITIONAL MATERIALS:** Soils: formation – index property, specific gravity, grain size distribution, plasticity, characteristics and phase relationship, identification and local names; IS1 classification; sources and uses of sand; fineness modulus; Rural and traditional materials- mud: mud as a building material; soil stabilization: need for soil stabilization, stabilized soil blocks; rural materials: bamboo, casuarina, coconut, palm, hay, coir – properties and uses; fire retardant treatment and insect proofing; Clay and clay materials: bricks, terracotta, tiles etc; Bricks: types of bricks; study of properties of constituent components, manufacturing process, quality test of bricks.
2. **NATURAL MATERIALS:** Stones: types of stones; study of properties of constituent components; methods of quarrying of stones; properties and uses of principal building stones; Timber: study of properties of timber, uses, seasoning process, quality tests; types of timber and defects in timber; protection from termites; techniques of preserving and finishing of timber; plywood, particle boards, block boards, PVC, laminates etc.
3. **LIME, CEMENT AND CEMENT PRODUCTS:** Lime: fat and hydraulic lime, their uses and properties; manufacture of lime; preparation of lime mortar; functions and requirements of a good mortar; mix properties for various works; Concrete: study of properties of constituent components,

manufacturing process, quality tests of cement, lime, sand, aggregates, concrete and mortar.

4. **METALS:** Study of properties of constituent components, manufacturing process, quality test of ferrous and non-ferrous metals (lead, copper, zinc, tin); weathering effects on such metals, preventive measures.
5. **GLASS AND PLASTICS:** Types of glass (plate, tinted, heat absorbing etc); structural glass bricks and glasscrete; fiber glass and glass wool etc; properties, varieties and uses of plastics in the building industry.
6. **PAINTS, VARNISHES AND DISTEMPERS:** Constituents of oil paint, characteristics of a good paint; types of paint; process of painting different surfaces; types of varnish; methods of applying varnish; french polish; dry distemper; oil bound distemper; wax polishing, putty.
7. **MISCELLANEOUS:** Water proofing materials; asphalt, felt; anti termite treatment to foundations, masonry and wood work; sound insulating materials- gypsum; study of materials for flooring (ceramic tiles, mosaic tiles, stones, vinyl flooring, red oxide flooring etc); study of materials for roofing (Mangalore tile, pan tiles, slate, corrugated asbestos sheet etc.); recent advances in building materials.

Note: Assignments could be in the form of market surveys for building materials and study of latest building materials in the building construction industry. Students are also required to do case studies of architectural and interior projects where the above-mentioned materials have been innovatively used.

TEXT BOOK

Rangwala, S. C., "Engineering Materials (Material Science)", Charotar Publishing House, 2007.

REFERENCE BOOKS

1. Farrelly, Lorraine, "Basic Architecture 02: Construction + Materiality", Ava Publishing, 2008
2. Agarwal, A., "Mud: The Potentials of Earth based Material for Third World Housing", IIED, 1981.
3. HUDCO, "All you wanted to know about Soil Stabilized Mud Blocks", 1989.
4. Watson, Donald, "Time-saver Standards for Building Materials and Systems", Tata McGraw Hill, 2010.

WEB REFERENCES

1. http://en.wikipedia.org/wiki/Building_material
2. www.bmtpc.org/pubs/book12.pdf
3. <http://www.habitattechnologygroup.org/>

AR-104	ARCHITECTURE AND THE SOCIAL SCIENCES	L T P	Cr
		2 0 0	4

OBJECTIVE

This course is aimed at helping the student understand the built environment by providing a look at architecture within the framework of human sciences: how does human psychology and society influence and inform architecture and how in turn architecture affects our lives. Students develop critical observation skills and investigate buildings as manifestations of religious, social, and personal values.

1. **ENVIRONMENTAL PSYCHOLOGY-** Relation to architecture and planning; meaning of environment; measurement of environmental stimuli from psychological aspect; behavioral effects of environmental conditions: physical - noise, temperature and air pollution; social- overcrowding and isolation; extra ordinary- catastrophe.
2. **ARCHITECTURAL PSYCHOLOGY-** Perceptual factors of environment- **spatial perception:** perception of distance, size and movement; meaning of colour and form; **spatial thinking-** social and cultural influences on environmental perception; **territorial behaviour** and personal space- individual and situational as determinants of personal space; consequences of too much or too little of personal space; personal space and environmental space as implications for design aspects; adaptation to environment - behavioral aspects of adaptation to familiar and unfamiliar environment; spatial experience; living requirements and satisfaction, local identity etc.
3. **PSYCHOLOGICAL AESTHETICS** - Measurement of communication through art and architecture; signs and symbols in architecture; determination of pleasantness and unpleasantness as psychological factors in environmental design.
4. **INTRODUCTION TO SOCIOLOGY:** Man and his social and physical environment; social groups and social structure; utility and relation with architecture; community participation - significance of public opinion and participation.
5. **INDIAN COMMUNITIES:** Rural and urban communities; their social structures and problems; cultural heritage; rituals and community gathering etc.
6. **URBANIZATION:** Trend and characteristics; dynamics of urban growth and social change; urban attitude, value and behavior; comparison of urbanization in underdeveloped countries with that in the west; patterns of urbanization in India; migration studies; problems arising out of urbanization etc.
7. **SOCIAL ASPECT OF PHYSICAL ENVIRONMENT-** Its implications and limitations in buildings; neighborhood planning; slum improvements and city fabric.

Note: Assignments would be in the form of case studies, comprising the psychological dimension of spaces and sociological study of communities with their habitat and built environment

TEXT BOOK

Madan, G. R., "Indian Social Problems: Vol - 1 and 2", Allied Publishers Pvt Ltd, 2003.

REFERENCE BOOKS

1. Rapoport, Amos, "House Form and Culture", Prentice Hall, 1969
2. Turley Alan C., "Urban Culture: Exploring Cities and Cultures", Prentice Hall, 2004
3. Macionis, John J and Parrillo, Vincent N., "Cities and Urban Life", Prentice Hall, 2010.
4. Broadbent, G, Bunt, R. and Jencks, Charles, "Signs, Symbols and Architecture", John Wiley and Sons, 1980
5. Broadbent, Geoffrey. "Design in Architecture: Architecture and the Human Sciences", John Wiley and Sons, 1973

WEB REFERENCES

1. http://en.wikipedia.org/wiki/Environmental_psychology
2. <http://www.edra.org/>
3. <http://sensingarchitecture.com/>

AR-155	BASIC DESIGN AND VISUAL ARTS - I	L-T-P	Cr
		0-0-6	6

OBJECTIVE

The course Basic design is aimed at imparting a good base in design through thoughtful designing of simple two dimensional and three dimensional compositions. Also, the Visual Arts component intends to acquaint the students with various drawing principles and artistic techniques; how to sketch and draw at all stages of the design process.

LIST OF EXPERIMENTS

A BASIC DESIGN

1. To study the elements and the principles of visual composition
2. To study the Ordering principles.
3. To study the colour wheel, colour schemes and its application on architectural forms and spaces.
4. To study textures and textures schemes.
5. To study various linear and planer forms and explore the adoptability of these sculptures to architectural functions.
6. To study solids and voids by creating abstract and semi abstract symbolic sculptural forms and spaces.

B. Arch.

7. To study the Transformation and Articulation of forms with an analytical study of the sculptural building forms and its critical appraisal of visual character.
8. To study architectural spaces: Elements defining spaces; factors affecting qualities of architectural spaces; spatial relationships and spatial organizations.
9. To study and demonstrate the application of basic design in architecture.

B VISUAL ARTS

1. To study the basic elements and various sketching techniques and mediums in pencil and ink for free hand sketching.
2. To learn how to build a sketch with emphasis on establishing structure, scale, layering tonal values and achieving spatial depth.
3. Free hand Sketching of furniture pieces, parts of building in relation with human scale and proportions.
4. Free hand Sketching of architectural elements and landscapes.
5. To study the effects and techniques of creating tonal values and to demonstrate the use of tonal values in architectural drawings.
6. To study the interaction of light with objects and surfaces.
7. To understand the application of free hand sketching in the design process.
8. To study the elements and importance of context in architectural drawings.

TEXT BOOK

Ching, Francis D. K., "Architecture: Form, Space, and Order", Wiley and Sons, 2007.

REFERENCE BOOKS

1. Wallschlaeger, C and Snyder, S.B., "Basic Visual Concepts and Principles for Artists, Architects and Designers", McGraw Hill, 1992.
2. Laseau, P, "Graphic Thinking For Architects and Designers", John Wiley and Sons, 2001
3. Ching, Francis D. K., "Drawing: A Creative Process", Wiley and Sons, 1989
4. Evans, Ray, "Drawing and Painting Architecture", Van Nostrand Reinhold Company, 1983.

WEB REFERENCES

1. <http://justcreativdesign.com/2008/06/13/how-to-design-learn-the-basics/>
2. <http://www.artinarch.com/>
<http://www.johnlovet.com/class.htm>

AR-156	ARCHITECTURAL DRAWING AND GRAPHICS	L-T-P	Cr
		0-0-6	6

OBJECTIVE

Architectural drawing and graphics is the primary medium for development and communicating design concepts. Through this course the students are trained to develop imaginative and three dimensional spatial capabilities and acquire the skill of reading plans, sections and elevations and understanding the drawing conventions and symbols used in them.

LIST OF EXPERIMENTS

1. To understand and learn about the various drafting tools required in architectural drafting.
2. To learn about the various drafting techniques, the drafting procedure and exercises on architectural letterings.
3. To construct architectural scales and apply them to real object and drawings (Plain scale, diagonal scale, isometric scale).
4. To introduce the principles of orthographic projections and prepare drawings on orthographic projection of simple regular two dimension shapes.
5. To prepare drawings on orthographic projection of complex solids, hollow object and sections.
6. To study the principles and techniques of axonometric, oblique and isometric views and construct three dimensional views of basic and complex geometrical shapes.
7. To study the interpenetration of solids and development of surfaces, sections.
8. To study the basic terms, principles, types and techniques of geometrical perspective drawing and to prepare perspective by measuring point method, angular and parallel perspective.
9. To prepare drawings on the presentation of interior and exterior views in one point perspective and section perspectives.
10. To prepare drawings using two point perspectives for simple objects, inclined planes, cylindrical objects, arches and other circular forms etc.
11. To introduce the basic principles of sciography and to prepare drawings demonstrating sciography of two dimensional objects in plan and elevation.
12. To prepare drawings demonstrating sciography of three dimensional objects in plan, elevation and views (Isometric, axonometric and perspective).
13. To study the various graphics codes and symbols used in architectural drawings.
14. To study the different types of plans used in architectural drawings.
15. To introduce the various types of architectural drawings.

B. Arch.

TEXT BOOK

Bhatt, N.D., "Engineering Drawing: Plane and Solid Geometry", Charotar Publishing House, 2006

REFERENCE BOOKS

1. Gill, Robert W., "Basic Perspective", Thames and Hudson, 1974
2. Malik, Shankar, "Perspective and Sciography", Allied Publishers, 1994
3. Leslie, Martin C., "Architectural Graphics", Macmillan Pub Co, 1970

WEB REFERENCES

1. www.technologystudent.com
2. www.ieder.herts.ac.uk/school/courseware
3. http://www.khulsey.com/perspective_basics.html

AR-157	BUILDING CONSTRUCTION TECHNOLOGY - I	L-T-P	Cr
		0-0-6	6

OBJECTIVE

To give an introduction to building elements and expose the student to the process of building construction.

LIST OF EXPERIMENTS

1. To introduce the various terminology used in brick masonry works.
2. To study and prepare drawings of bonds in brick masonry; bonds in columns, corners and junctions, jointing and pointing; buttresses; sills; jambs; corbels; copings; cavity walls; reinforced brickwork.
3. To study the various tools used in brick masonry works.
4. To study the defects in brick masonry and supervising brick masonry works.
5. To study and prepare drawings on various stone masonry works.
6. To study the type of walling and joints, dressing of stone surfaces; coping and supervising stone masonry works.
7. To study various types of composite masonry.
8. To demonstrate various quality test of bricks, stones and timber.
9. To study and prepare drawings on simple foundation for masonry load bearing walls and piers.
10. To study and prepare drawings of various types of wooden doors and windows.
11. To study and prepare drawings of the various types of metal (pressed steel and z-section) doors and windows.
12. To study methods of mosquito proofing of doors and windows.
13. To study and prepare drawings of the various fixtures and fastenings commonly used in doors and windows.
14. To introduce the various terminology of arches and to prepare drawings on the various type of arches.

15. To study the procedure of centering of arches and prepare drawings on the types of lintels and sunshades.

TEXT BOOK

Rangwala, S. C., "Building Construction", Charotar Publishing House, 2007

REFERENCE BOOKS

1. McKay, W.B., "Building Construction Volume I, II, III and IV", Longmans, 1955.
2. Ching, Francis D. K. and Adams, Cassandra, "Building Construction Illustrated", Wiley and Sons, 2000.
3. Chudley, Roy, "Construction Technology", Longman, 2005.

AR -158	MODEL MAKING WORKSHOP	L-T-P	Cr
		0-0-3	3

OBJECTIVE

Modeling allows an architect to explore an idea in a three dimensional form, allowing communication of the idea in an accessible way.

LIST OF EXPERIMENTS

A WORKSHOP

1. To introduce the carpentry tools, processes and wood working machines and prepare simple three dimensional objects like cubes, pyramids etc.
2. To create complex three dimensional forms for models using carpentry methods.
3. To demonstrate the use of carpentry tools in making joints such as dovetail joint, mortise and tenon joint, lap joint, butt joint etc to be used for making furniture
4. To demonstrate fixing of plywood, block board, commercial boards etc. and their application in furniture.
5. To introduce the various welding equipments, processes and to learn about metallic sections, joinery tools, joinery processes and working with them.
6. To prepare joints (Lap and butt) by metal arc welding
7. To learn and use various painting methods-brush, spray, hot spray etc.

B ARCHITECTURAL MODEL MAKING

1. To introduce the various materials and techniques used in architectural model making.
2. To model with paper, card board, mount board, thermocol, styrofoam, softwood, acrylic sheets and wire.

B. Arch.

3. To study the development of simple and composite form, experiments on three dimensional forms such as cubes, pyramids, tetrahedron and forms to understand the spaces conceived by them.
4. To create organic forms by using clay, plaster of paris, metal scrap, jute fiber etc. for study of forms and to study about murals.
5. To introduce and make various types of architectural models including concept models; development models; illuminated models; presentation models etc; sectional models.

REFERENCE BOOKS

1. Morris, M., "Architecture and the Miniature: Models", John Wiley and Sons, 2000.
2. Mills, Criss B., "Designing with Models: A Studio Guide to Making and Using Architectural Models", Thomson and Wadsworth, 2000.
3. Raghuwanshi, B.S., "A Course in Workshop Technology - Vol. I and II", Dhanpat Rai and Co, 2001.

AR-159	COMPUTER APPLICATIONS IN ARCHITECTURE- I	L-T-P	Cr
		0-0-2	2

OBJECTIVE

This course will enable the students to understand the basics of computer and to know the basics of MSOffice, enabling the student prepare simple and interactive presentations using computers. The students will also be introduced to the preliminary concepts of CAD.

LIST OF EXPERIMENTS

1. To introduce and study about the basics of computer hardware and software components; computer terminology.
2. To introduce and study about windows and its applications.
3. To learn the concepts of Internet, server types, connectivity; applications of internet- using e-mail, browsing etc.
4. To understand the concepts of e-commerce.
5. To study in detail Microsoft Office - Word and Excel.
6. To prepare slide shows and architectural presentations using MS PowerPoint.
7. To learn the basics of Photoshop CS3.
8. To introduce to the basics of CAD and work on the fundamentals of 2D drafting.

REFERENCE BOOKS

1. Wallace, Wang, "Office 2010 for Dummies", Wiley, 2010
2. Rajaraman, V., "Fundamentals of Computer", Prentice Hall, 2004
3. Kyles, Shannon R., "AutoCAD Workbook for Architects and Engineers", Wiley-Blackwell, 2008.

WEB REFERENCES

1. www.officeskills.org
2. www.photoshopsupport.com
3. www.cadtutor.net

CE-101	ENVIRONMENTAL SCIENCE AND ECOLOGY	LTP	Cr
		500	3

OBJECTIVE

Environmental Studies is a multidisciplinary area, the issues of which every one should know. The aim of the course is to make everyone aware of environmental issues like continuing problems of pollution, loss of forest, solid waste disposal, and degradation of environment. Issues like economic productivity and national security, global warming, the depletion of ozone layer and loss of biodiversity are other serious concerns before the mankind.

1. **THE MULTIDISCIPLINARY NATURE OF ENVIRONMENTAL STUDIES:** Basic definitions related to environment; Scope, vis-à-vis environmental science and environmental engineering; Causes of environmental degradation, atmospheric composition and associated spheres, habitat and climate; objective, goals and principles involved in environmental education, environmental awareness, environmental ethics, environmental organization and their involvement.
2. **NATURAL RESOURCES:** Renewable and non-renewable resources; forest resources, over-exploitation, and deforestation / afforestation; water resources, impact of over-utilization of surface and ground water, floods, drought, conflicts over water, dams; mineral resources: dereliction of mines, environmental effects of extracting and using mineral resources; Food resources, modern agriculture and its impact, problem associated with fertilizer and pesticide, water logging, salinity ; energy resources, renewable, non-renewable energy sources, solar energy, wind energy, hydro energy, biomass energy, geothermal energy, nuclear energy and its associated hazards; land as a resource, land degradation, man induced landslides, soil erosion and desertification.
3. **ECOSYSTEMS:** Concept of an ecosystem, structure and function of an ecosystem, producers, consumers and decomposers, energy flow in the ecosystem, ecological succession, food chains, food webs and ecological pyramids; characteristic features, structure and function of the following ecosystem -forest ecosystem, grassland ecosystem desert ecosystem and aquatic ecosystems.
4. **BIODIVERSITY AND ITS CONSERVATION:** Bio-geographical classification of India; biodiversity at global, national and local levels, India as a mega-diversity nation, hot-spots of biodiversity; value of

B. Arch.

biodiversity-consumptive use, productive use, social, ethical aesthetic and option values; threats to biodiversity; conservation of biodiversity: in-situ and ex-situ conservation of biodiversity.

5. **ENVIRONMENTAL POLLUTION:** Causes, effects and control measures of air pollution, water pollution, soil pollution, marine pollution, noise pollution, thermal pollution, solid waste management, e-waste management; disaster management – floods, earthquake, cyclone and landslides.
6. **SOCIAL ISSUES AND THE ENVIRONMENT:** Water conservation, rain water harvesting, watershed management; climate change, global warming, acid rain, ozone layer depletion; Environmental Protection Act, Air (Prevention and Control of Pollution) Act, Water (Prevention and Control of Pollution) Act, Wildlife Protection Act, Forest Conservation Act.
7. **HUMAN POPULATION AND THE ENVIRONMENT:** Population growth, population explosion – family welfare programmes; role of information technology in environment and human health; case studies, Chipko movement, Saradar Sarovar dam, mining and quarrying in Udaipur, salinity and water logging in Punjab, Haryana and Rajasthan, Bhopal gas tragedy, Chernobyl nuclear disaster, arsenic pollution in ground water.

TEXT BOOK

Kaushik, Anubha, and Kaushik, C.P., “Perspectives in Environmental Studies”, New Age International Publishers, 2004

REFERENCE BOOKS

1. Agarwal, K. C., “Environmental Biology”, Nidhi Publ. Ltd., Bikaner, 2001
2. Bharucha Erach, “The Biodiversity of India”, Mapin Publishing Pvt. Ltd., 2006
3. Brunner R. C., “Hazardous Waste Incineration”, McGraw Hill Inc., 1989.
4. Clark R.S., “Marine Pollution”, Clanderson Press Oxford, 1989
5. Cunningham, W.P., Cooper, T.H. Gorhani, E. & Hepworth, M.T., “Environmental Encyclopedia”, Jaico Publ. House, 2001.
6. De A. K., “Environmental Chemistry”, 2nd Edition, Wiley Eastern, 1989
7. Jadhav, H. and Bhosale, V.M., “Environmental Protection and Laws”, Himalaya Pub. House, Delhi, 1995.
8. Mckinney, M.L. and Schocl. R.M., “Environmental Science Systems & Solutions”, Web enhanced edition, 1996.
9. Rao M.N. and Datta, A.K., “Waste Water Treatment”, Oxford & IBH Publ. Co., 1987.
10. Sharma B.K., “Environmental Chemistry”, Goel Publ. House, Meerut, 2001
11. Trivedi R.K. and Goel, P.K., “Introduction to Air Pollution”, Techno-Science Publications, 1996

CE-102	STRUCTURES IN ARCHITECTURE - I	L-T-P	Cr
		2-0-0	4

OBJECTIVE

To introduce the basic concept of structures and enable the students to analyze, understand the fundamentals and working of various parts of different structural systems.

1. **INTRODUCTION:** Aims, objects and scope of study of structures for architects; technical names and function of various structural components from foundation to roof; fundamentals of mechanics; S. I. system units.
2. **LOADS ON STRUCTURES:** Various types of loads such as dead, live, wind, impact, earthquake etc. and their effect on structures; I.S. specifications on imposed loads.
3. **STRESS AND STRAIN:** Concept, definition and kinds of stresses; stress-strain diagram; compressive and shear stress; Young's Modulus, shear modulus, bulk modulus and relation between them; linear and lateral strain, modulus of elasticity; Poisson's ratio, elastic limit, yield point, breaking stress, factor of safety; safe stress values for materials; temperature stresses.
4. **FORCE AND MOMENTS:** Definition, cause, effect, units, force as vector; resolution of forces by graphical and analytical methods; types of forces – coplanar, non- coplanar, concurrent, non-concurrent and parallel forces; triangle of forces, parallelogram of forces, equilibrium of forces; concept of resultant and equilibrium of forces; conditions of equilibrium by analytical and graphical methods; beam reactions graphically and analytically, statically equilibrium.
5. **SHEAR FORCE AND BENDING MOMENT :** Types of supports, relationship between bending moment, shear force and load; shear force and bending moment diagrams in case of simply supported beams and cantilevers with distributed and point loads; simply supported beams with overhangs, moments applied to cantilevers and beams.
6. **CENTROIDS AND MOMENTS OF INERTIA:** Centre of gravity by graphical and analytical methods; moment of inertia, parallel axis theorem, modulus of section, radius of gyration.
7. **SIMPLE BENDING:** Effect of bending of a beam; theory of simple bending; concept of bending stresses and deflection in simply supported beams and cantilever beams.

TEXT BOOK

Ramamrutham S. and Narayan R., "Strength of Materials", Dhanpat Rai and Sons, 2010

REFERENCE BOOKS

1. Khurmi, R.S., "Theory of Structures", S.Chand and Company, 2005

B. Arch.

2. Khurmi, R.S. "Strength of Materials", S. Chand and Company, 2010
3. Punmia, B.C., "Strength of Materials and Mechanics of Structure", Standard Publishers and Distributors, 1971

WEB REFERENCES

1. http://www.uoregon.edu/~struct/courseware/461/461_lectures/461_lectures_index.html
2. <http://www.aboutcivil.com/>

PD-191	CO-CURRICULAR ACTIVITIES	L T P	Cr
			1

OBJECTIVE

To help the students in their all round growth and acquire attributes like team spirit, organizational ability, leadership qualities, etc.

OPERATION

The students are to take part in Co-curricular activities outside contact hours through clubs/ societies spread over the whole year.

PD-192	PERSONALITY SKILLS	L T P	Cr
		0 0 2	1

OBJECTIVE

To equip the students with the understanding of human behavior, develop time management skills, and enhance personality.

1. **TRANSACTIONAL ANALYSIS:** Winners and losers; ego states; OK states; positive and negative strokes; life scripts; exercises.
2. **CREATIVE THINKING:** What is creativity; 6 thinking hats; mental blocks; exercises.
3. **SELF DISCOVERY:** Importance of knowing yourself; SWOT analysis; benefits; strengths and weaknesses; exercises.
4. **DEVELOPING POSITIVE ATTITUDE:** Meaning; changing attitudes; power of positive thinking; overcoming negative attitude; exercises.
5. **TIME MANAGEMENT:** Features, time management matrix; tips for time management; effective scheduling; time wasters; time savers; exercises and time bound tasks.
6. **STRESS MANAGEMENT:** What is stress; causes; positive and negative stress; effects; signs; tips to overcome stress; stress busters; exercises
7. **DECISION MAKING:** Definition; models and types; skills and techniques; courses of action; steps involved in decision making; individual decision making and group decision making; exercises

REFERENCE BOOKS

1. Muriel, James and Jongeward, Dorothy, "Born to Win", Signet Publishers, 1978
2. Harris, Thomas Anthony, "I'm OK, You're OK", Galahad Books, 2004
3. Dr. Alex, K., "Soft Skills", 2009, S. Chand, 2009
4. Adams Scott, "Positive Attitude", Andrews Mcbeel Publishing, 2004
5. Newton Tim, "Managing Stress – Emotion and Power at Work", Sage Publications Ltd., 1995
6. Koch Richard, "The 80/20 Principle :The Secret to Success by Achieving with Less", Broadway Business, 1999
7. Covey Stephen R., "The 7 Habits of Highly Effective People", Simon & Schuster UK, 2004

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