

**NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI**

|                                      |  |  |                           |
|--------------------------------------|--|--|---------------------------|
| <b>Course Title</b>                  | <b>Building Construction and Materials - I</b>         |  |                           |
| <b>Course Code</b>                   | <b>AR110</b>   | <b>Credits</b>   | 3 (1 theory, 4 practical) |
| <b>Department</b>                    | <b>Architecture</b>                                    | <b>Faculty</b>   | <b>S. Rajendra Babu</b>   |
| <b>Pre-requisites Course Code</b>    | <b>-NIL-</b>   |  |                           |
| <b>Course Coordinator(s)</b>         | <b>-Nil-</b>   |  |                           |
| <b>Course Teacher / Tutor E-mail</b> | <b>rajbabu@nitt.edu</b>                                | <b>Tel. No.</b>  | <b>0416-2503556</b>       |
| <b>Course Type</b>                   | <input checked="" type="checkbox"/> <b>Core course</b> | <input checked="" type="checkbox"/> <b>Elective course</b> |                           |

**COURSE OVERVIEW**

This course deals with the properties & uses of materials for simple construction such as mud, bamboo, timber, brick, stone, lime, mortars, thatch, tiles, asbestos, galvanised iron & reinforced concrete. Simple construction methods for foundation for load bearing wall in stone and brick will be explained. All aspects of simple brick & stone masonry will also be explained. Different types of doors & their construction methods will also be explained.

**COURSE OBJECTIVES**

This course is aimed to provide in-depth knowledge about the simple construction materials & construction techniques to get a good understanding about construction of simple structures

**COURSE OUTCOMES (CO)**

| <b>Course Outcomes</b>   | <b>Program Outcome (PO)</b>  |
|--|--|
| 1. Learning the making of, properties & uses of simple const. materials.<br>2. Understand the principles of construction of building components.<br>3. Learn the principles, working & construction of arches, lintels & brick jollies.<br>4. Learn about the components & construction of simple doors. | 1. Learning about the making & properties of basic building materials will lead to confidence in the building design.<br>2. Learning the principles, working & construction of arches, domes & earth construction will enrich the design skills. |

**COURSE TEACHING AND LEARNING ACTIVITIES**

| <b>No</b> | <b>Week</b> | <b>Topic</b>  | <b>Mode of Delivery</b>    |
|-----------|-------------|---|----------------------------|
| 1         | 1           | Properties & uses of mud  | Conventional / assignments |
|           | 2           | Properties & uses of bamboo & timber  | Conventional / assignments |
|           | 3           | Properties & uses of bricks   | Conventional / assignments |
|           | 4           | Properties & uses of stone  | Conventional / assignments |
|           | 5           | Properties & uses of cement, lime, mortars  | Conventional / assignments |
|           | 6           | Properties & uses of thatch, tiles, asbestos, G.I.                                      | Conventional / assignments |
|           | 7           | Properties & uses of reinforced concrete  | Conventional / assignments |
|           | 8           | Principles of construction of simple foundation for load bearing walls in brick & stone | Conventional / assignments |
|           | 9           | Principles of construction of plinth filling, steps                                     | Conventional / assignments |
|           | 10          | Standard terms in brick & stone masonry   | Conventional / assignments |
|           | 11          | English, Flemish & Rat trap bond  | Conventional / assignments |
|           | 12          | Types of stone walls, Composite walls & piers   | Conventional / assignments |
|           | 13          | Principles of construction of Arches, Lintels, B.jollies                                | Conventional / assignments |
|           | 14          | Paneled door, flush doors, joints, styles, rails, panels, fixture & fastenings          | Conventional / assignments |

**COURSE ASSESSMENT METHODS**

| <b>No</b> | <b>Mode of Assessment</b>                                   | <b>Date / Week / Month</b>                                       | <b>Duration</b>                                  | <b>%</b> |
|-----------|---|--|--|----------|
| 1         | Cy. tests 2 nos., Retest 1 no.                              | feb. 3 wk / mar. 3 wk // apr. 2 wk                               | 1 hr. each                                       | 20%      |
| 2         | Study visits & reports (before & after each visit) – 4 nos. | In Jan., Feb., Mar. / Reports one week before & after each visit | One day visits on weekends or during class hours | 20%      |
| 3         | Assignments– 8 nos.   | 3 before each class test   | During class hours                               | 40%      |
| 4         | Final Exam  | End of semester  | 2 Hours  | 20%      |

**ESSENTIAL READINGS : Textbook, reference books, articles from the internet, newspapers, etc**

**Text Books & Reference Books::**

1. S S Bhavikatti, Building Technology, Vikas Publishing House Pvt Ltd, 2014, 624 / 124545
2. Arora, S.P. & Bindra, S.P. "A Text Book of Building Construction", Dhanpat Rai & Sons, New Delhi, 1994.
3. Jha, J. & Sinha, S.K., "Building Construction", Khanna Publishers, New Delhi, 1977.

**COURSE EXIT SURVEY**

**Feedback from the students during mid & end semester:** on knowledge gained, subjects / activities relevant to the course, the methodology adopted, an aspect of improvement, whether the topics fulfil the course outcome and program outcome.

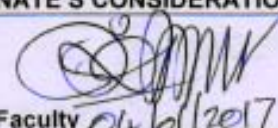
**COURSE POLICY (including plagiarism, academic honesty, attendance, etc.)**

1. Students to have a **min. of 75% attendance** to appear in final examination. **Relaxation** of max. 10% (over & above the 25% in regulations) would be considered only for valid, genuine reasons & supported by evidence.  
  
As per B. Arch Regulations 2016, Sec.B.8 Attendance, "Students who have not satisfied the attendance eligibility requirements shall be awarded a 'V' grade for the course" & as per Sec.B.11.1, ii, C, "'V' indicates lack of required attendance. Students awarded 'V' grade shall **compulsorily REDO** the course.
2. Students found with any **malpractice** in assignments / reports / activities / test / exam will get 0 marks for that work.
3. If a student misses any cycle test(s), one **retest** will be conducted after the last working day, only for valid, genuine reasons of absence & supported by evidence. **Prior permission** to skip a test shall be taken to avoid any confusion later. If not, within 2 weeks after the test, documents shall be produced to find if the student is eligible for retest.
4. Students are expected to come to exam hall 10 minutes before exam time & get prepared to **remain in exam hall** for the entire **duration of writing the test / exam**. They can leave the exam hall any time (test) or after first 30 minutes (exam), after handing over the answer book. Students shall **not have mobile / any reference materials** anywhere near them during test / exam. Students shall maintain silence in the exam hall during exam hours. As per NITT guidelines, mobile phones possessed by students inside exam hall will be **confiscated & shall not be returned**.
5. **Submission** dates are normally decided in consultation with students. So late submissions, unless for valid, genuine reasons & supported by evidence, will get **reduced marks**. Prior permission shall be taken for any anticipated delay.
6. **Marks & attendance** will be notified periodically. Request for **correction** shall be within 2 weeks of notification.
7. If **medical certificates** are submitted as health reasons for missing classes / activities / tests / submissions / for not joining a visit etc., students are expected to get them **from NIT-T hospital**.
8. **Preventing other students** from pursuing their academic activities will be considered as academic offence & such issues will be taken to disciplinary committee & decisions made will be implemented.
9. Any behavior by a student **hindering the academic activities of the faculty** will be considered as academic misconduct & will be referred to disciplinary committee & decisions made will be implemented.
10. **Study visits** will be arranged only when all the students-help, cooperate with the process, follow safety instructions during the visits & willing to meet, manage the expenses. If not, visits will be cancelled & alternative assignments will be introduced. Those not following safety instructions, will be **excluded from future visits** & issue reported to higher authorities. For visits on weekends, **3 hr. attendance & for being on time & for reports 5 marks** will be given.  
  
\* If a student **could not join a visit** due to valid, genuine reason (supported by evidence & taking prior permission is preferable), or due to exclusion from visits, **it is student's responsibility** to make a suitable alternative educational visit on one's own effort (faculty can help find one) within 1 month & submit the report within 1 week.
11. As per B. Arch Regulations 2016, Sec.B.6.b, "For a student to secure a minimum of E grade, he/ she has to secure a **minimum of 40% in the cumulative assessment** in theory courses" & as per sec.B.11.1.ii.b, " Students awarded F grade **may REDO** the course **or opt for formative assessment** (subject to conditions given in B.6 Assessment Procedure and B.6.1 Formative Assessment)"
12. If any student is scoring **less attendance & marks**, his / her **parents may be informed** about it.

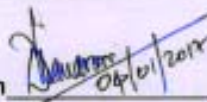
**ADDITIONAL COURSE INFORMATION**

Faculty can be consulted at his room with prior appointment between -- to ----- on ----- (free time in time table)

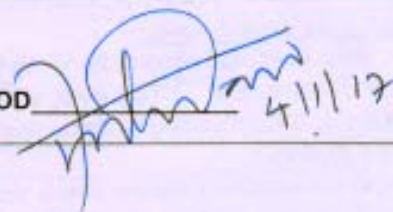
**FOR SENATE'S CONSIDERATION**

Course Faculty  04/11/2017  
1:30 PM

CC-Chairperson

 04/11/2017

HOD

 4/11/17