NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

DEPARTMENT OF _____ARCHITECTURE_____

COURSE PLAN – PART I			
Name of the programme and specialization	**M.ARCH – ENERGY EFFICIENT AND SUSTAINABLE ARCHITECTURE**		
Course Title	**ENERGY ENVIRONMENT AND BUILDINGS**		
Course Code	**AR701**	**No. of Credits**	**2**
Course Code of Pre-requisite subject(s)	**NIL**		
Session	**July 2019**	**Section (if, applicable)**	
Name of Faculty	**PROF.G. SANGEETHA**	**Department**	**ARCHITECTURE**
Official Email	**gsangs@nitt.edu**	**Telephone No.**	**2503565**
Name of Course Coordinator(s) (if, applicable)	-		
Official E-mail	-	**Telephone No.**	-
Course Type (please tick appropriately)	☑ **Core course**	☐ **Elective course**	

Syllabus (approved in BoS)

Understanding Indoor Environmental Concepts and its influence on Total Comfort. Understanding the total energy need for building and various factors that consume energy. Understanding the Energy conservation /efficiency codes and Regulations.

COURSE OBJECTIVES

To have an overall insight and understanding about Energy Environment, Buildings and their interdependency and relationship.

MAPPING OF COs with POs

Course Outcomes	Programme Outcomes (PO) (Enter Numbers only)
1. Understanding the need of Energy and its usage in buildings	
2. Understanding of Indoor environmental and Human comfort	
3. Understanding of the total energy requirement of buildings from start to end use.	
4. Understanding of energy policy, codes and regulations	

COURSE PLAN – PART II

COURSE OVERVIEW

An overall insight into Energy Environment and Buildings: Understanding Indoor Environmental Concepts and its influence on Total Comfort. Understanding the total energy need for building and various factors that consume energy. Understanding the Energy conservation /efficiency codes and Regulations.

COURSE TEACHING AND LEARNING ACTIVITIES

(Add more rows)

S.No.	Week/Contact Hours	Topic	Mode of Delivery
1	Week 1 August	Nature and extent of the energy and environmental crises facing the world and the country. **Introduction of Assignment 1 (A1)**	Lecture
2	Week 2 August	Need for implementing energy efficiency on an international, national and individual basis in the context of the building industry & environmental issues	Lecture
3	Week 3 August	**Guest Lecture:** Energy and Building Technology	Guest Lecture
4.	Week 4 August	Energy consuming sectors in the country. Primary, delivered and end – use energy. **A1:** Review of two journal papers	Lecture/ Discussion/Presentation
5	Week 5 September	Concept of embodied energy. Embodied energy for material and building component. Energy for production of building materials. Total energy need for building	Lecture
6	Week 6 September	**Guest Lecture:** Energy and Building Technology **Introduction of Assignment 2 (A2)** –Case Study of 2 Building types – Studying the Building Technology and assessing various factors that influence the energy performance of buildings.	Guest Lecture
7	Week 7 September	Indoor environment – spatial environment, Thermal environment, visual environment.	Lecture/Discussions

		Discussion on Assignment 2		
8	Week 8 September	**A 2 presentation**	Presentation	
9	Week 9 October	**CA Test**	Written Examination	
10	Week 10 October	Human comfort and its assessment. Factors influencing comfort in solar passive buildings **Introduction of Assignment 3 (A3)** - Term Paper	Lecture	
11	Week 11 October	**Guest Lecture :** Sustainable Indoor Environments	Guest Lecture	
12	Week 12 October	Functional factors, environmental factors, envelope factors, air-conditioning systems factors, energy source factors and electrical systems factors.	Lecture	
13	Week 13 November	**A3 Term paper Presentation**	Seminar	
14	Week 14 November	Energy conservation / efficiency codes and Regulations. Methods & Techniques of energy performance assessment of buildings	Lecture	
15	Week 15 November	**Final Exam**	Written Examination	

COURSE ASSESSMENT METHODS (shall range from 4 to 6)

S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	CA Test	9th week	60 minutes	20%
2	**Assignment 1**- Journal paper Review	1st week	2 weeks	5%
3	**Assignment 2** – Case Study of 2 Building types – Studying the Building Technology contributing to energy efficiency	6th week	2 weeks	15%
4	**Assignment 3** -Term Paper	10th week	3 weeks	10%
CPA	Compensation Assessment*	14th week	60 minutes	20%

5	End Semester Examination	15th week	120 minutes	50%

COURSE EXIT SURVEY (mention the ways in which the feedback about the course shall be assessed)

1. Feedback form may be given to students to be filled in and collected back.

COURSE POLICY (including compensation assessment to be specified)

1. **Class will be of** lectures, guest lectures, site visits, case studies, seminars and discussions.
2. **Pass Marks:** A minimum of 40% of marks is required to pass the subject.
3. **Compensation Assessment**: On a genuine case, if a student is absent for the continuous assessment test, he/she will be permitted to give a retest by providing the supporting documents of evidence for absence and it will be held in the second week of November before the final examination and the portion for which will be the portions taught till date of the Retest.
4. **Case study** will be of group work. Students are responsible to conduct the case study and every other aspect related to the case study.
5. **Meeting the faculty**: Any student can meet the course faculty in case of any query or difficulty faced pertaining to the subject, during the office hours with a prior appointment fixed.

ATTENDANCE POLICY (A uniform attendance policy as specified below shall be followed)

- At least 75% attendance in each course is mandatory.
- A maximum of 10% shall be allowed under On Duty (OD) category.
- Students with less than 65% of attendance shall be prevented from writing the final assessment and shall be awarded 'V' grade.

ACADEMIC DISHONESTY & PLAGIARISM

- Possessing a mobile phone, carrying bits of paper, talking to other students, copying from others during an assessment will be treated as punishable dishonesty.
- Zero mark to be awarded for the offenders. For copying from another student, both students get the same penalty of zero mark.
- The departmental disciplinary committee including the course faculty member, PAC chairperson and the HoD, as members shall verify the facts of the malpractice and award the punishment if the student is found guilty. The report shall be submitted to the Academic office.
- The above policy against academic dishonesty shall be applicable for all the programmes.

ADDITIONAL INFORMATION, IF ANY
FOR APPROVAL
Course Faculty _____ CC- Chairperson _____ HOD _____