NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

COURSE PLAN			
Course Title	DYNAMICS OF MACHINERY		
Course Code	ME026	No. of Credits	03
Department	MECH	Faculty	Y.R.KISHORE
Pre-requisites Course Code	None		
Course Coordinator(s) (if, applicable)	none		
Other Course Teacher(s)/Tutor(s) E-mail	kishore@nitt.edu	Telephone No.	9963298129
Course Type	Core course		

COURSE OVERVIEW

Students will get exposure to methods to find natural frequency of the simple systems, they will be taught about energy method , Rayleigh-Ritz method. they will understand the importance of vibration.they will be taught about forced vibrations,two degree of freedom.they will exposed to one and two dimentional wave equations.

COURSE OBJECTIVES

1.fully understand and appreciate the importance of vibrations in mechanical design of machine parts that operate in vibratory conditions

2.to be able to obtain linear vibratory models of dynamic systems with changing complexities (SDOF, MDOF),

3 to be able to write the differential equation of motion of vibratory systems,

4.to be able to make free and forced (harmonic, periodic, non-periodic) vibration analysis of single and multi degree of freedom linear systems.

COURSE OUTCOMES (CO)	
Course Outcomes	Aligned Programme Outcomes (PO)
1).Appreciating the need and importance of vibrational analysis in mechanical design of machine parts that operate in vibratory conditions	1,2
2).Ability to obtain linear mathematical models of real life engineering systems	1,2,5
3).Ability to analyse the mathematical model of a linear vibratory ystem to determine it's response.	1,3
4).Ability to determine vibrational responces of sdof and mdof systems to harmonic, periodic and non-periodic excitation	1,3,5
5).General notion on frequency and time response of vibratory systems	3,4,5,12

COURSE TEACHING AND LEARNING ACTIVITIES

S.No.	Week	Topic	Mode of delivery
1.	1-3	Introduction and importance of vibration, simple harmonic motion,Problems on natural frequency of single degree of freedom systems.natural frequency by virtual energy method.	Lecture C&T/ PPT or any suitable mode
2.	4-7	Fee vibration of undamped single degree of freedom system,damped free vibration of single degree of freedom system,forced vibration of single degree of freedom	
3.	8-10	Vibration of two degree of freedom system-coupled system,problems on modeshapes	
4.	11-13	Introduction to vibration of continuous systems,one dimentional wave equation	
5.	14-16	Vibration of plates/membrane-wave euler equation	

COURSE ASSESSMENT METHODS

S.no	Mode of Assessment	Week/ Date	Duration	% Weightage
1.	1st Cycle test	6th Week	60 Minutes	20%
2.	2nd Cycle test	11th Week	60 Minutes	20%
4.	Assignments	Before End Semester	-	10%
5.	End Semester Examination	End Semester	90 Minutes	50%

ESSENTIAL READINGS : Textbooks, reference books Website addresses, journals, etc

Text Books:

Reference Books:

1. Rao, J.S. and Gupta, K., Introductory Course on Theory and Practice of Mechanical Vibration, New Age International Pvt. Ltd., 2004.
2. Thomson, W.T., Theory of Vibration with Applications, CBS Publishers, New Delhi, 1990.

COURSE EXIT SURVEY (mention the ways in which the feedback about the course is assessed and indicate the attainment also)

- Feedback from the students during class committee meetings.
- Anonymous feedback through questionnaire and unknown formats.

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

CORRESPONDENCE

All the students are advised to come to the class regularly. All the correspondence (schedule of classes/ schedule of assessment/ course material/any other information regarding this course) will be intimated in the Class only.

ATTENDANCE

1. Attendance will be taken by the faculty in all the contact hours. Every student should maintain minimum of 75 % physical attendance in these contact hours along with assessment criteria to attend the end semester examination.
2. Any student, who fails to maintain 75% attendance need to appear for the compensation assessment (CPA). Student who scores more than 60 % marks in the CPA along with assessment criteria will be eligible for attending the end semester examination.
3. Those students who have attendance lag and also missed any of the continuous assessments (CAs) can appear for CPA to get eligibility for writing the end semester examination as quoted in Pt. 2. Their scores in the CPA WILL NOT be taken into account for computing marks for CA.

4. Students not having 75% minimum attendance at the end of the semester and also fail in CPA (scoring less than 60%) will have to RE DO the course.

ASSESSMENT

5. Attending all the assessments are MANDATORY for every student.
6. If any student is not able to attend any of the Assessments due to genuine reason, student is permitted to attend the Repeat assessment (RA) with Corresponding weightage.
7. Student who fails to score 60% in RA will take up additional assignments to get eligibility for writing End Semester examination.

   Finally, every student is expected to score minimum 1/3rd of the top rank holder of the class (Including all the assessments) to pass the course. Otherwise the student would be declared fail and 'F' grade will be awarded. Further he can take up only FORMATIVE ASSESSMENT.

8. Please refer B.Tech Regulations 2015(B.12.1) for the letter grades and the corresponding grades

ACADEMIC HONESTY & PLAGIARISM

1. All the students are expected to be genuine during the course work. Taking of information by means of copying simulations, assignments, looking or attempting to look at another student's paper or bringing and using study material in any form for copying during any assessments is considered as dishonest.
2. Tendering of information such as giving one's program, assignments to another student to use or copy is also considered as dishonest.
3. Preventing or hampering other students from pursuing their academic activities is also considered as academic dishonesty.
4. Any evidence of such academic dishonesty will result in the loss of marks on that assessment. Additionally, the names of those students so penalized will be reported to the class committee chairperson and HoD of the concerned department.
5. Students who honestly producing ORIGINAL and OUTSTANDING WORK will be REWARDED.

ADDITIONAL COURSE INFORMATION

1. The faculty is available for consultation at times as per the intimation given by the faculty.
2. Queries (if required) to the course teacher shall only be emailed to the email id specified by the teacher(kishore@nitt.edu)

FOR SENATE'S CONSIDERATION

Course Faculty _____ CC-Chairperson _____ HOD _____ 9/8/2017

Course Co-ordinator _____