NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

EPARTMENT OF MATHEMATICS

COURSE PLAN – PART I			
Name of the programme and specialization	**B.Tech (EEE) 1st year**		
Course Title	**Complex Analysis and Differential Equations**		
Course Code	**MAIR22**	**No. of Credits**	**3**
Course Code of Pre-requisite subject(s)	**nil**		
Session	**January __2020___**	**Section (if, applicable)**	**A &B**
Name of Faculty	**Dr. V.Shanthi**	**Department**	**Mathematics**
Official Email	**vshanthi@nitt.edu**	**Telephone No.**	**9487440341**
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)

Analytic functions; C-R equations- line integral Cauchy integral theorm and formula without proof , Taylor series, L.Seires and Residue theorem,
Higher order linear differential equtions with constant coefficients; 2nd order linear Des with variable coefficients; Methods of variation of parameters; Cauchy Euler equations
L.T standard functions, derivatives and integrals, L.T convolution theorem-periodic functions solution of ODE and simultaneous equations with constant coefficients and integral equations by L.T.
Formation of pde by eliminationg arbitrary constants and functions- solution of first order equations four standard types Lagrange's eqution method of separation of varibables

COURSE OBJECTIVES

The course presents
An introduction to analytic functions and power series
Various cauchy's theorems and its applications
Various approach to find generalm solution of ordinary differential equations
PDE and methods to find the solutions

MAPPING OF COs with Pos

Course Outcomes completions of the course student will be able to	**Programme Outcomes (PO)** (Enter Numbers only)

1. Understand analytic functions discuss its properties	**1**
2. Obtain series representation of analytic funcitons	**1**
3. Classiy singularites and derive Laurent series 4. Evaluate various integrals using Cauchy's Residue theorem	**1,2,7**
5. Find the solutions of first and some higher order Des 6. Appy proepertis of special finction in discussion of ODE 7. Find L.T of a given function and its inverse tranforms 8. Find solution of first order PDE	**1**

COURSE PLAN – PART II			
COURSE OVERVIEW			
This course will introduce **Function of complex variable and its properties** **Ordinary / partial differential equations and various approach to find its solution**			
COURSE TEACHING AND LEARNING ACTIVITIES			**(** Add more rows)
S.No.	**Week/Contact Hours**	**Topic**	**Mode of Delivery**
1	1- 3 weeks/10 hours	Higher order linear differential equtions with constant coefficients; 2nd order linear Des with variable coefficients; Methods of variation of parameters; Cauchy Euler equations	Chalk and talk
2	4-6 weeks / 10 hours	Formation of pde by eliminationg arbitrary constants and functions- solution of first order equations four standard types Lagrange's eqution method of separation of varibables	Chalk and talk
3	6th week	Assesment 1	1 hr written exam
4	7th week	Assesment 2	Assignment offline mode
5	7- 8th week	Analytic functions; C-R equations- line integral	Chalk and talk
6	March -April	Cauchy integral theorm and formula without proof , Taylor series, L.Seires and Residue theorem, L.T standard functions, derivatives and integrals,	Online videos and lectures

		L.T convolution theorem-periodic functions solution of ODE and simultaneous equations with constant coefficients and integral equations by L.T.	
7	June 3rd to 13	Revision and clarificaitons of doubts	Online mode
8	June 15	Assessment 3	Online mode
9	July 14	Assessment 4	1 hr exam 3pm. To 4 pm
10	July 16	Compensation Assessment	1 hr 3 to 4 pm
11	July 23	Final assesment	2hrs 3pm to 5 pm

COURSE ASSESSMENT METHODS (shall range from 4 to 6**)**

S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	Assesment 1 writtent test	6th week	1 hr	30%
2	Assesment 2 (Assignment)	7th week (offline mode)	1hr	10%
3	Assesment 3 (Assignment)	7th week (Online mode)	1hr	10%
4	Assesment 4 Written test	July 14	1 hr (3P.M to .4P.M)	20%
CPA	Compensation Assessment*	July 16	1 hr (3P.M to .4P.M)	20%
5	Final Assesment*	July 23	2 hrs (3P.M to 5 P.M)	30%

***mandatory; refer to guidelines on page 4**

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

1. Students can meet the faculty at any stage in the course duration in case he/she finds difficulty in understanding the concept.
2. Feedback form issued to students to express their comments about the course before

Assessment 1 & after completing the syllabus. Students are requested to give genuine feedback about the course.

3. Student knowledge about the topic covered in this course will be judged through marks obtained in examination.

COURSE POLICY (including compensation assessment to be specified**)**

MODE OF CORRESPONDENCE (email / phone etc)

Students can meet the course faculty for clarifying doubts in online mode

***COMPENSATION ASSESSMENT POLICY**

a) Students who have missed either Assessment-1 or Assessment-4 or both (genuine reasons only) can register for Compensation Assessment which shall be conducted soon after the completion of the Assessment-2 and before the End semester examination.
b) The Compensation Assessment shall be conducted for 20 marks comprising the syllabus of both Assessment -1 & Assessment - 4.

***ASSESSMENT- 3(ASSIGNMENTS)**

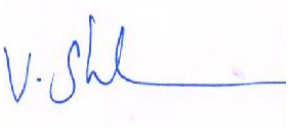
a) Students should submit assignments before last date of submission. In case students fails to submit their assignments, he/she will get zero mark for that particular assignment.

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** _____

Guidelines

a) The number of assessments for any theory course shall range from 4 to 6.

b) Every theory course shall have a final assessment on the entire syllabus with at least 30% weightage.

c) One compensation assessment for absentees in assessments (other than final assessment) is mandatory. Only genuine cases of absence shall be considered.

d) The passing minimum shall be as per the regulations.

B.Tech. Admitted in				P.G.
2018	2017	2016	2015	
35% or (Class average/2) whichever is greater.		(Peak/3) or (Class Average/2) whichever is lower		40%

e) Attendance policy and the policy on academic dishonesty & plagiarism by students are uniform for all the courses.

f) Absolute grading policy shall be incorporated if the number of students per course is less than 10.

g) Necessary care shall be taken to ensure that the course plan is reasonable and is objective.