DEPARTMENT OF CHEMICAL ENGINEERING

NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

COURSE PLAN – PART I			
Course Title	**Process Dynamics and Control Laboratory**		
Course Code	**CLLR17**	**No. of Credits**	**2**
Course Code of Pre-requisite subject(s)	**CLPC25**		
Session	**July, 2018**	**Section (if, applicable)**	**A / B**
Name of Faculty	**Dr. T.K. Radhakrishnan Dr. N.Samsudeen**	**Department**	**Chemical Engineering**
Email	radha@nitt.edu / samsudeen@nitt.edu	**Telephone No.**	**04312503104 / 04312503119**
Name of Course Coordinator(s) (if, applicable)			
E-mail		**Telephone No.**	
Course Type	[v] **Core course**	[ ] **Elective course**	

List of Experiments (approved in BoS)

1. I & II order system dynamics
2. Interacting & non interacting systems
3. Flapper - Nozzle system and I/P and P/I
4. Control valve characteristics
5. PID control system
6. Pressure control trainer
7. Flow control system
8. Temperature control system
9. PID controller design experiment using MATLAB

REFERENCE BOOKS

1. Process Control Laboratory Manual
2. D.R. Coughanowr and S. E. LeBlanc, 'Process Systems Analysis and Control', Mc.Graw Hill, III Edition, 2009.

COURSE OBJECTIVES

To impart hands on experience on various process control systems and instrumentation

COURSE OUTCOMES (CO)

Course Outcomes	Aligned Programme Outcomes (PO)
1. Able to apply the theoretical knowledge while performing experiments for different chemical engineering processes	PO1, PO3, PO4,PO5, PO8,

	PO9, PO10, PO11, PO12

COURSE PLAN – PART II

COURSE OVERVIEW

COURSE TEACHING AND LEARNING ACTIVITIES

S.No.	Week /Contact Hours	Topic	Mode of Delivery
1.	1st week	Introduction about Process Dynamic Control Laboratory	Chalk and Talk
2.	2nd week	I & II Order System Dynamics	Experiment will be carried out by students
3.	3rd week	Interacting & non interacting Systems	Experiment will be carried out by students
4.	4th week	Flapper - Nozzle system and I/P and P/I	Experiment will be carried out by students
5.	5th week	Control valve characteristics	Experiment will be carried out by students
6.	6th week	PID Control	Experiment will be carried out by students
7.	7th week	Pressure Control Trainer	Experiment will be carried out by students
8.	8th week	Flow control System	Experiment will be carried out by students
9.	9th week	Temperature Control System	Experiment will be carried out by students
10.	10th week	PID controller Design experiment using MATLAB	Experiment will be carried out by students

COURSE ASSESSMENT METHODS (shall range from 4 to 6)

S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	Internal Assessment	Every week during lab hours	During lab hours	60
2	Practical Lab examination	After 10th week	1 hours test	30
3	Viva voce examination	After Practical examination	3 hours	10

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

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

Feedback from students at the end of the each assessment

COURSE POLICY (preferred mode of correspondence with students, policy on attendance, compensation assessment, , academic honesty and plagiarism etc.)

MODE OF CORRESPONDENCE (email/ phone etc), Students may be contacted to my mail id (radha@nitt.edu) for queries related to PDC Lab.

ATTENDANCE:

Attendance will be taken during contact hours. The attendance percentage are as follows >95 % VG , >85 % G , >75 % M

>50 <75 Student should attend the compensation classes.
<50 % prevented from the final assessment and should redo the laboratory course.

COMPENSATION ASSESSMENT

No compensation assessment will be given.

ACADEMIC HONESTY & PLAGIARISM

Student should follow academic ethics and refrain themselves from activities such as plagiarism, copying assignments and exams etc.

ADDITIONAL INFORMATION

Apart from the books mentioned in the syllabus, students may follow any other relevant books for the viva voce examination

FOR APPROVAL

Dr.T. K. Radhakrishnan

Dr. N.Samsudeen
Course Faculty

CC-Chairperson _____ **HOD** _____