NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

DEPARTMENT OF COMPUTER APPLICATIONS

COURSE PLAN – PART I			
Name of the programme and specialization	**M. Tech Data Analytics**		
Course Title	**Machine Learning Lab**		
Course Code	**CA 610**	No. of Credits	2
Course Code of Pre-requisite subject(s)	**CA 605**		
Session	**January 2021**	Section (if, applicable)	
Name of Faculty	**Dr. U. Srinivasulu Reddy**	Department	**Computer Applications**
Official Email	**usreddy@nitt.edu**	Telephone No.	+91-431-2503746
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)

Exercises to solve the real-world problems using the following machine learning methods:

- Linear Regression
- Logistic Regression
- Multi-Class Classification
- Neural Networks
- Support Vector Machines
- K-Means Clustering & PCA

2. Develop programs to implement Anomaly Detection & Recommendation Systems.

3. Implement GPU computing models to solving some of the problems mentioned in Problem 1.

COURSE OBJECTIVES

To learn different machine learning techniques.

MAPPING OF COs with POs

Course Outcomes	**Programme Outcomes (PO)** (Enter Numbers only)
1. Implement and apply machine learning algorithms to solve problems	**1,2,3,4,5**
2. Select appropriate algorithms for solving a of real-world problems.	**1,2,4,5,6**
3. Solve the queuing problems using queuing models	**1,2,3,4,6,7**

COURSE PLAN – PART II			
COURSE OVERVIEW			
COURSE TEACHING AND LEARNING ACTIVITIES			
S.No.	**Week/Contact Hours**	**Lab Exercises**	**Experiment Outcome (Documentation)**
1	**08/02/2021**	**Literature Review and Data Collection**	1. Problem Statement 2. Dataset Description
2	**15/02/2021**	**Problem statement**	Write up about 200 words about the significance of problem
3	**22/02/2021**	**Data pre-processing**	1. Apply standard pre-processing technique 2. Apply data visualization technique 3. Code preferably python
4	**01/03/2021**	**Data pre-processing**	Make the dataset ready to fit the model
5	**08/03/2021**	**Model Selection (ML models/Deep Learning Models)**	Find the ML/ DL approach best suited to the dataset
6	**15/03/2021**	**Model preparation**	Fit the model on your dataset
7	**22/03/2021**	**Training the model**	Fine tune your model based on hyper parameter
8	**05/04/2021**	**Model Evaluation**	Choose suitable metric to evaluate the model
9	**12/04/2021**	**Results and Discussions**	Compare the model performance using suitable plot
10	**19/04/2021**	**Report submission**	Structured as chapter 12345 (in the above mentioned order)

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

S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	Assessment 1	22/02/2021	3 Hr	15
2	Assessment 2	22/03/2021	3 Hr	15
3	Assessment 3	19/04/2021	3 Hr	15
4	Weekly demo, Observation, and Report submission	26/04/2021	3 Hr	25
CPA	Compensation Assessment *	April 2021	3 Hr	30
5	End Semester	April 2021	3 Hrs	30

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

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

- The students through the class representative may give their feedback at any time to the course chairman which will be duly addressed.
- The students may also give their feedback during class committee meeting.
- Course Outcome Survey' form will be distributed on the last working day to all the students and the feedback on various rubrics will be analyzed.

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

MODE OF CORRESPONDENCE (email/ phone etc)

The student can the availability of faculty member over phone as well as mail. They can clarify their doubts any time by taking prior appointment.

COMPENSATION ASSESSMENT POLICY

One Compensation assessment will be conducted for absentees in assessments (except final assessment) is mandatory due to genuine reasons.

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

Dr. U. Srinivasulu Reddy **Course Faculty**	**Dr. B. Balaji** **PAC- Chairperson**	**Dr. P.J.A. Alphonse** **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.