

## Lesson Plan

Subject Name: Advanced Maintenance Engineering	Subject Code: MMSPE105
Branch: Production Engineering (MSE)	Semester: 1 <sup>st</sup>

Sl. No.	Module	Topics	Periods/Hrs
1.	I	Defect generation-types of failures	1
2.	I	Defects reporting and recording, Defect analysis, Failure analysis	2-3
3.	I	Equipment downtime analysis, Breakdown Analysis	4
4.	I	Failure tree analysis (FTA)	5-6
5.	I	Root cause analysis (RCA), failure modes and effective analysis (FMEA)	7-8
6.	II	Planned and unplanned maintenance	9
7.	II	Breakdown maintenance, Corrective maintenance	10-11
8.	II	Opportunistic maintenance, Routine maintenance	12-13
9.	II	Preventive maintenance	14
10.	II	Predictive maintenance	15
11.	III	Condition Monitoring: online and off line monitoring	16-17
12.	III	Condition Monitoring techniques, benefits of Condition Monitoring	18-19
13.	III	Temperature monitoring, leakage monitoring,	20-21
14.	III	Vibration monitoring, vibration analysis	22-23
15.	III	Oil analysis techniques, crack monitoring	24-25
16.	IV	Selection and scope of computerization-Equipment classification	26-27
17.	IV	Codification of break down, material and facilities	28
18.	IV	Job sequencing	29-30
19.	IV	Material management module	31
20.	IV	Captive Engineering module	32
21.	V	Total productivity maintenance (TPM), features and principles	33-34
22.	V	Pillars of TPM	35-36
23.	V	Autonomous maintenance	37
24.	V	Equipment and process improvement using Kaizen	38
25.	V	TPM verses TQM, TPM verses RCM. TPM benefits	39-40