LESSON PLAN

Subject Name- Quality Assurance & Reliability	Branch- Production Engineering
Subject Code- BPEPE804	Semester- 8th

S/N	Module	Topic(s)	Period/ Hours
1	I	Quality Control: Causes of variation, standard errors of mean, Process capability analysis	1
2		Natural tolerance limits, Specification limits, Trial & Revised limits, Rational subgroups	2-3
3		Control charts for variables(X,R,S) Control charts for attributes	4-5
		Control charts for variables(CUSUM,EMWA), Control charts for attributes	6
4		Tutorial	7-8
5	II	Acceptance sampling: Single, double and multiple sampling plans, Acceptance sampling for variables	9-10
6		Sampling Plans: Design of single sampling plan, double, multiple and sequential sampling plans,	11-12
		O.C. curve	13
		AOQ, AOQL, ATI, AFI, ASN	14-15
7		Tutorial	16
8	II	Quality Engineering: Taguchi's quadratic loss function, Offline & online quality control	17-18
9		Importance of parameter selection design	19
10		Tutorial	20
11		Experimental design principle for product & process design	21
12		Two-level experimental for full factorial and fractional factorial design	22
13		S/N ratio, Inner and outer arrays	23

S/N	Module	Topic(s)	Period/ Hours
14	III	Tutorial	24
15	IV	Total Quality Control: Components of TQM, TQM Implementation	25
16		Quality function deployment	26
17		PDCA cycle	27
18		Quality Circle: Implementation, Training of QC	28
19		Kaizen & Poke Yoke systems	29
20		Quality Cost, Concept of Zero defect	30
21		Quality assurance systems- ISO 9000,14000,18000	31
22		Tutorial	32
23	V	Reliability: system effectiveness, Mission reliability	33
24		Design adequacy, Operational readiness, serviceability, performance indices, their evaluation, uses and limitation	34-35
25		Tutorial	36
26		Reliability models of maintained systems, relationship between reliability and maintainability	37
27		System with components in series, parallel and standby	38
28		Maintainability prediction	39
29		Tutorial	40