

LESSON PLAN

Subject Name- Quality Assurance & Reliability	Branch- Production Engineering
Subject Code- BPE 2801	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	I	Natural tolerance limits, Specification limits, Trial & Revised limits, Rational subgroups	2-3
3	I	Control charts for variables(X,R,S,CUSUM,EMWA), Control charts for attributes	4-5
4	I	Tutorial	6
5	I	Sampling Plans: Design of single sampling plan,double,multiple & sequential sampling plan	7-8
6	I	O.C. curve, AOQ,AOQL,ATI,AFI,ASN	9-10
7	I	Tutorial	11
8	II	Quality Engineering: Taguchi's quadratic loss function, Offline & online quality control	12-13
9	II	Importance of parameter selection design	14
10	II	Tutorial	15
11	II	Experimental design principle for product & process design	16
12	II	Two-level experimental for full factorial and fractional factorial design	17-18
13	II	S/N ratio, Inner and outer arrays	19
14	II	Tutorial	20
15	III	Total Quality Control: Components of TQM, TQM Implementation	21
16	III	Quality function deployment	22

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