



Module Code: EJ215028S	Version: 1 Date: 9 th December 2005
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1. Module Title: <i>maximum 100 characters</i>
Statistics and Process Quality Assurance

2a. Module Leader:	2b. Department:	2c. Faculty:
A Shirvani	Computing and Technology	Science & Technology

3a. Level: <i>see guidance notes</i>	3b. Module Type: <i>see guidance notes</i>
2	Standard

4a. Credits: <i>see guidance notes</i>	4b. Study Hours: <i>see guidance notes</i>
15	150

5. Restrictions	
Pre-requisites:	
Co-requisites:	
Exclusions:	
Pathways to which this module is restricted:	

LEARNING, TEACHING AND ASSESSMENT INFORMATION (for inclusion in the Module Guide)

6a. Module Description: <i>200 – 300 words</i>
This module provides the student with the knowledge and confidence to use sound statistical techniques and statistical process control in industrial applications for process control and problem solving. The module will also give an appreciation of the wider aspects of quality management that are vital to the survival of all organisations. Assessment is by examination and assignment.

6b. Outline Content:
<ul style="list-style-type: none"> Quality management systems and standards e.g. ISO 9000. The role of inspection including cost and risk. Quality improvement techniques including: Pareto, cause effect diagrams, Shewhart cycles, etc. Probability and statistics including: sampling, graphical representation of data, binomial and Poisson and normal distributions, measures of location and spread, expected values. Constructs and interprets statistical process control (SPC) charts including the following types: average and range, average and standard deviation, moving average and moving range, multi-stream and cusum charts. Selects the appropriate chart for a given application Assesses process capability and calculates expected reject rates.

6c. Key Texts/Literature:

6d. Specialist Learning Resources:
Comprehensive module study guides. Computers with a spreadsheet program

7. Learning Outcomes (threshold standards):	
	On successful completion of this module the student will be expected to be able to:
Knowledge and understanding	1. Understands the function and importance of quality assurance in the organisation of a company.
Intellectual, practical, affective and transferable skills	2. Selects, applies and interprets appropriate SPC charts. Assesses the capability of a system. 3. Recommends a sound course of action to overcome a quality problem.

8. Learning Activities			
Learning Activities	Hours	Learning Outcomes	Additional Comments (including details of use of web-CT)
Teacher managed learning:	36	All	
Student managed learning:	114	All	
TOTAL	150		

9. Assessment		
Assessment Method	% contribution to module mark or P/F	Learning Outcomes
Practical assignment	30	All
Examination	70	All
<p>In order to pass this module, students are required to achieve an overall mark of 40% In addition, students are required to (a) for each element of fine graded assessment listed above, achieve a minimum mark of 30% (or higher - see Module Guide) and (b) pass any pass/fail elements</p>		

OTHER TECHNICAL DETAILS

10. Delivery of the Module <i>Please delete as appropriate</i>					
Delivery	This module is delivered over...	Yes or No?	Indicate which by deleting as appropriate		
1	...a single semester	Y	Semester 1	Semester 2	
2	...two semesters	N	Semester 1	Semester 2	
3	...a single trimester	N	Trimester 1	Trimester 2	Trimester 3
4	...two trimesters	N	Trimester 1	Trimester 2	Trimester 3
5	...three trimesters	N	Trimester 1	Trimester 2	Trimester 3
6	...multiple delivery patterns	N			
7	... an exceptional delivery pattern	N	<i>Give details (see guidance notes)</i>		

11. Learning Activities – further details	
Learning Activities	Details of duration and frequency of learning activities
Teacher managed learning:	Lecture (weekly) and practical exercises (typically weeks 9 & 10) 3 hours per week
Student managed learning:	Practical exercises and background reading

12. Module Assessment – further details				
Method	Length/duration	Fine graded (FG) or pass/fail (PF)	Minimum Qualifying Mark <i>see guidance notes</i>	Comments
Exam	2 hours	FG	30	
CW	1000 words	FG	30	

13. Subject: <i>see guidance notes</i>
