

Planning and Quality Assurance Affairs

Form (A)

Course Specifications

General Information

Course name	Statistical Quality Control
Course number	STAT3302
Faculty	
Department	
Course type	Major Needs
Course level	3
Credit hours (theoretical)	3
Credit hours (practical)	0
Course Prerequisites	

Course Objectives

- 1 - To understand the basic concepts of quality monitoring
- 2 - To understand the statistical underpinnings of quality monitoring
- 3 - To learn various available statistical tools of quality monitoring
- 4 - To learn the statistical and economical design issues associated with the monitoring tools
- 5 - To demonstrate the ability to design and implement these tools

Intended Learning Outcomes

Knowledge and Understanding	<ul style="list-style-type: none"> * In-depth knowledge of theoretical and practical aspects of SQC. * Understanding of the link between SQC and business analysis / business planning. * primary data collection, evaluation and use in SQC processes * secondary data search, evaluation and use in SQC processes * use of statistical software packages in quality management processes * data/results of analysis visualization and dissemination in quality management processes
Intellectual Skills	<ul style="list-style-type: none"> * Demonstrate the ability to construct measures of quality, or to improve them * Understand the underlying concepts of the temporal display and analysis of data, specifically including run charts and control charts and be able to use them with different types of data * Develop skills in analyzing datasets and presenting data for improvement work. * Demonstrate an ability to critically appraise literature that incorporates measurement of variation
Professional Skills	<ul style="list-style-type: none"> * A scientific calculator * Using MINITAB
General Skill	<ul style="list-style-type: none"> * Comparison Between control methods * Interpretation of results

Course Contents

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| 1 - Introduction to the course |
| 2 - DMAIC Process |
| 3 - Modeling Process Quality and MINITAB |
| 4 - Inferences about Process Quality |
| 5 - Methods and Philosophy of Statistical Process Control |
| 6 - Control Charts for Variables |
| 7 - Control Charts for Attributes |
| 8 - Process and Measurement System Capability Analysis |
| 9 - Cumulative Sum and Exponentially Weighted Moving Average Control Charts |
| 10 - Acceptance Sampling for Attributes |

Teaching and Learning Methods

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| 1 - Lectures |
| 2 - Discussion |
| 3 - Applications |
| 4 - Exercises and solutions |

Students Assessment

<u>Assessment Method</u>	<u>TIME</u>	<u>MARKS</u>
Mid-term exam	week 8	40
Final Exam	week 16	60

Books and References

Essential books	Introduction to Statistical Quality Control, 7th Edition by Douglas C. Montgomery, 2013, John Wiley & Sons, Inc., New York.
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