

Syrian Arab Republic	 الجامعة الافتراضية السورية SYRIAN VIRTUAL UNIVERSITY	الجمهورية العربية السورية
Ministry of Higher Education and Scientific Research		وزارة التعليم العالي والبحث العلمي
Syrian Virtual University		الجامعة الافتراضية السورية

## Course Description

### 1- Basic Information:

Course Name	Quality, Reliability and Maintainability
Course ID	QRM
Contact Hours (Registered Sessions)	16
Contact Hours (Synchronized Sessions)	16
Mid Term Exam	-
Exam	75 min
Registered Sessions Work Load	16
Synchronized Session Work Load	16
Credit Hours	6

### 2- Pre-Requisites:

Course	ID
None	

### 3- Course General Objectives:

This course aims to introduce the basic principles of quality, reliability and maintenance, the student knows the importance of each and the need for them.

This course introduces the basic tools used in quality management, ISO concept, TQM, methods of calculating system reliability, fault analysis, maintenance management principles, maintenance types and maintenance levels and recognizing the need to plan them.

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#### 4- Intended Learning Outcomes (ILO):

Code	Intended Learning Outcomes
ILO1	Methodology of understanding and writing a scientific article
ILO2	Understand the concepts of quality and total quality
ILO3	Explain some quality management tools
ILO4	Explanation of ISO certification and Total Quality Management
ILO5	Introduction to reliability
ILO6	Ability to model reliability of systems
ILO7	Identify basic and modern concepts in maintenance and understanding the importance of maintenance and the need for them
ILO8	Differentiation between different maintenance patterns: corrective / critical, predictive, preventive
ILO9	Learn some basics in maintenance management
ILO10	Notes on the assignments and a general review

#### 5- Course Syllabus (18 hours of total synchronized sessions; 18 hours of total Recorded Sessions)

- **RS:** Recorded Sessions; **SS:** Synchronized Sessions;

ILO	Course Syllabus	RS	SS	Type	Additional Notes
ILO1	Methodology of understanding and writing a scientific article	1	1	Seminars	
ILO2	- General introduction - Presentation of the basic vocabulary of the course	1	1		
	- Quality: Terms and definitions	1	1		
	- Quality concept - The importance and benefits of quality - Basic tools of quality				
ILO3	- Basic quality tools (checklists, scatter chart, cause and effect diagram)	1	1		

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	- Basic quality tools (Pareto analysis, statistical control of processes, sampling)	1	1		
ILO4	- ISO certification	1	1		
	- Total Quality Management	1	1		
ILO5	- Reliability: terms and definitions, the definition of reliability	1	1		
	- Reliability: Six Sigma standard, quality relationship reliability, reliability importance	1	1		
ILO6	- Reliability: Account reliability system, practical exercises	1	1	Exercises	
	- Reliability: Reliability study during design phase, design acceptance tests	1	1		
ILO7	- Maintenance: concept and importance of maintenance, maintenance basics	1	1		
ILO8	- Maintenance: types of maintenance and the role of each	1	1	Seminars	
	- Maintenance: Total productive maintenance (planned maintenance, self-maintenance)	1	1		
ILO9	- Maintenance: Some basics in maintenance management	1	1		
ILO10	- Discuss the assignments, direct feedback to avoid errors, and review the final exam	1	1		

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## 6- Assessment Criteria (Related to ILOs)

ISC	Interactive Synchronized Collaboration	Ex	Exams	Rpt	Reports
PF2F	Presentations and Face-to-Face Assessments	PW	Practice Work		

ILO Code	ILO	Intended Results	Assessment Type				
			ISC	PW	Ex	PF2F	Rpt
ILO1	Methodology of understanding and writing a scientific article		*				*
ILO2	Understand the concepts of quality and total quality		*		*		*
ILO3	Explain some quality management tools		*		*		*
ILO4	Explanation of ISO certification and Total Quality Management		*		*		*
ILO5	Introduction to reliability		*		*		*
ILO6	Ability to model reliability of systems		*	*	*		*
ILO7	Identify basic and modern concepts in maintenance and understanding the importance of maintenance and the need for them		*		*		*
ILO8	Differentiation between different maintenance patterns: corrective / critical, predictive, preventive		*		*		*
ILO9	Learn some basics in maintenance management		*		*		*
ILO10	Notes on the assignments and a general review		*				

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## 7-Practice Tools:

Tool Name	Description
None	

## 8-Main References

- All content of the course can be downloaded from Moodle course page as Pdf files and registered sessions.
- Synchronized sessions.

## 9-Additional References

- "Reliability, quality, and safety for engineers" / by B.S. Dhillon, 2005.
- "Design reliability : fundamentals and applications" / B.S. Dhillon, 1999.
- "Preventive, Predictive and Corrective Maintenance", John D. Szewedo, 2012.
- "Development in the fundamentals of maintenance management", F. L. Smith.
- "The maintenance organization", F. L. Smith.
- "Conseil, Accompagnement du Management de la Maintenance industrielle", INGEXPERT.
- "Cours de maintenance", Frederic TOMALA.