

DEPARTMENT OF SYSTEMS ENGINEERING

Chairman

Dr. Hesham Al-Fares

Faculty

Abdur-Rahim	Abouhedaf	AlDurgam
Al-Amer	Andijani	Ayar
Ben-Daya	Cheded	Al-Dajani
Al-Dhaifallah	Duffuaa	Al-Fares
El-Ferik	Al-Haboubi	Haroun
Kara	Magdi	Mujahid
Mysorewala	Nahas	Osman
Pirim	Rougi	Al-Saif
Selim	El-Shafei	Al-Sunni
Al-Turki	Vaqar	

MASTER IN SAFETY ENGINEERING

Degree Requirements

(a) Core Courses (27 credit hours)	Credit Hours
Hazard Recognition and Control	SAFE 560 3
Risk Assessment	SAFE 561 3
Fire Prevention	SAFE 563 3
Industrial Hygiene	SAFE 565 3
Accident Investigation	SAFE 567 3
Safety and Health Organizations and Standards	SAFE 568 3
Human Factors Engineering	ISE 536 3
Systems Safety Engineering	ISE 539 3
Seminar	SAFE 599 0
Project	SAFE 600 3
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(b) Elective Courses (15 credit hours)	
Three Elective Courses	XXX xxx 9
Two Free Elective Course	XXX xxx 6

Degree Plan

COURSE	TITLE	LT	LB	CR	COURSE	TITLE	LT	LB	CR
First Year									
SAFE 560	Hazard Recognition and Control	3	0	3	SAFE 565	Industrial Hygiene	3	0	3
SAFE 563	Fire Prevention	3	0	3	SAFE 568	Safety and Health Organiz. and Standards	3	0	3
ISE 536	Human Factors Engineering	3	0	3	ISE 539	Systems Safety Engineering	3	0	3
					SAFE 599	Seminar	1	0	0
		9	0	9			10	0	9
Second Year									
SAFE 561	Risk Assessment	3	0	3	XXX xxx	Elective II	3	0	3
SAFE 567	Accident Investigation	3	0	3	XXX xxx	Elective III	3	0	3
XXX xxx	Elective I	3	0	3	XXX xxx	Free Elective I	3	0	3
		9	0	9			9	0	9
Third Year									
XXX xxx	Free Elective II	3	0	3					
SAFE 600	Project	0	0	3					
		3	0	6					
Total credit hours required in Degree Program : 42									

SAFETY ENGINEERING

SAFE 560 Hazard Recognition and Control (3-0-3)

Unsafe acts, work area, electrical, mechanical, and process hazards. Control methods (administrative and engineering), record keeping, indicators, Personal Protective Equipment.

Prerequisite: Graduating Standing

SAFE 561 Risk Assessment (3-0-3)

Identifying hazards and affected people, evaluating and prioritizing risks, deciding on preventive actions, taking actions, monitoring and reviewing, strategies to calculate probabilities of risk and to minimize uncertainty, HAZID, case studies.

Prerequisite: Graduating Standing, Consent of Instructor

SAFE 563 Fire Prevention (3-0-3)

Effects of fire on personnel, flammable and explosive materials, fire classifications, theory of fire, fire prevention, fire suppression, fire extinguishment, fire detection systems, fire alarm systems, fire brigades, evacuation plan, NFPA standards and codes.

Note: Crosslisted with ARE 516.

Prerequisite: Graduating Standing

SAFE 565 Industrial Hygiene (3-0-3)

Types of hazards (chemicals, physical, biological, radiological, noise, heat, illumination), harmful effect, exposure limits, and control methods (administrative and engineering).

Prerequisite: Graduating Standing

SAFE 567 Accident Investigation (3-0-3)

Safety inspections, aspects of accident investigation such as recent theories associated with accident causes, investigative techniques, data acquisition, investigative reports, management responsibilities, and remedial actions, prevention of recurrence of accidents.

Prerequisite: Graduating Standing

SAFE 568 Safety and Health Organizations and Standards (3-0-3)

Presenting different aspects of famous safety organizations, including research, such as National Safety Council (NSC), The American National Standards Institute (ANSI), National Institute for Occupational Safety and Health (NIOSH), Occupational Safety and Health Act (OSHA), The Saudi Standards, Quality and Metrology Organization (SASO), regulations and standards.

Prerequisite: Graduating Standing

SAFE 571 Safety in Facility and Product Design (3-0-3)

Application of safety principles to minimize the safety hazards in the design and manufacture of various products or workplaces.

Prerequisite: Consent of Instructor

SAFE 591 Special Topics in Safety (3-0-3)

Radiation, petroleum, petrochemical hazards, or other hazards not covered in the required courses. Control methods (administrative and engineering) for such hazards.

Prerequisite: Consent of Instructor

SAFE 599 Seminar (1-0-0)

Students are required to attend the seminars given by faculty, visiting scholars, and fellow graduate students. Each student is required to present at least one seminar on related research topic.

Prerequisite: Graduate Standing

SAFE 600 Project (0-0-3)

A research project in the field of Safety Engineering under the supervision of a faculty member at KFUPM. It is a capstone project that is research oriented and not merely putting principles into practice. A report should be submitted and the work is presented to a committee of three members.

Prerequisite: Graduate Standing

SAFE 606 Independent Research (3-0-3)

Independent reading of a particular topic in contemporary safety under the supervision of a faculty member, preferably the one supervising the project. The topic is strongly recommended to be related to the research in the project.

Prerequisite: Graduate Standing