PROGRAM SHEET

BACHELOR OF SCIENCE IN ENGINEERING AND MANAGEMENT SCIENCE

(BSEMS)

Catalog 2010-2012

	UNIVERSITY CORE CURRICULUM		44 SCH

❖ SSK 1211	Strategic Learning for University Success (*Pre-requisite*: *Successful completion of at least three Language Center level I courses*)	2 SCH	Met ☐ not Met ☐
❖ SSK 1212	Information Literacy Skills (*Pre-requisite: Successful completion of SSK1211 and all Language Center level II courses except AWT1002*)	2 SCH	Met ☐ not Met ☐
SSK 1213	Critical Thinking and Analysis (*Pre-requisitet: SSK 1212 & ENG1301*)	2 SCH	Met ☐ not Met ☐
*ARB 1310 **or** ARB 1320	Arabic for Academic Purposes Arabic for Communication Purposes	3 SCH	Met ☐ not Met ☐
*FRN 2310 **or** FRN 3310	French for Academic Purposes II Advanced French Writing and Speaking Skills	3 SCH	Met ☐ not Met ☐
CSC 1401	Computer Programming	4 SCH	Met ☐ not Met ☐
COM 1301	Communication Through Speaking (*Pre-requisite: ENG 1301*)	3 SCH	Met ☐ not Met ☐
ENG 1301	English Composition I (*Pre-requisite: Pass all Language Center Modules*)	3 SCH	Met ☐ not Met ☐
ENG 2303	Technical Writing (*Pre-requisites: Successful completion of all SSK courses, ENG 1301 and COM 1301*)	3 SCH	Met ☐ not Met ☐
HIS 1301 **or** **HIS1302(Arb)or** HIS 2301 **or** PSC 2301	History of the Arab World in **English** (*Pre-requisite: SSK1212*) or History of the Arab World in **Arabic**, (*equivalent to HIS 1301*), or Contemporary World History (*Pre-requisite: ENG 1301*) **or** Comparative Political Systems (*Pre-requisite : ENG 1301 & SSK 1213 Pre-or-co requisite*)	3 SCH	Met ☐ not Met ☐
HUM 3302 **or** **HUM 3303 or** HUM3301/ **HUM 3304** LIT2301or **LIT 2304 or** LIT 2305	Introduction to the Study of Islamic Civilization in **English** (*Pre-requisite: Junior Classification) or* Introduction to the Study of Islamic Civilization in **Arabic**), (*Pre-requisite: Junior Classification) or* Introduction to Islamic Art & Architecture in **English**(*Pre-requisite: Junior Classification*) Introduction to Islamic Art & Architecture in **Arabic** Major Works of World Literature (*equivalent to ARB 2305/LIT 2305*) (*Pre-requisite: Sophomore Classification and ENG 1301 & Pre-or- co requisite: SSK 1213),or* Introduction to Arabic Literature(*equivalent to ARB 2304*), or Introduction to World Literature **in Arabic** (*equivalent to ARB 2305/LIT 2301*)	3 SCH	Met ☐ not Met ☐
HUM 3305 **or** HUM 3306 **or** PHI 2301 **or** PHI 2302	Science and Society (*Pre-requisite: Junior Classification*)or Comparative Religion (*Pre-requisite: Junior Classification*) or Philosophical Thought (*Pre-requisite: ENG 1301 & SSK 1213 Pre-or- co requisite)*, or History of Ideas (*Pre-or- co requisite: SSK 1213*)	3 SCH	Met ☐ not Met ☐
MTH 1303	Differential and Integral Calculus (Pre-requisites: *Working knowledge of algebra, trigonometry and analytical geometry).*	3 SCH	Met ☐ not Met ☐
CHE 1401	General Chemistry I,	4 SCH	Met ☐ not Met ☐
SOC1301 **or** SSC1310 **or** GEO 1301 **or** PSY 1301	Introduction to Sociology (*Pre-requisite: SSK 1212*) or Introduction to Anthropology, (*Pre-requisite: SSK 1212*) or Introduction to Geography, (*Pre-requisite: SSK 1212*) or Introduction to Psychology (*Pre-requisite: SSK 1212*)	3 SCH	Met ☐ not Met ☐

Notes :

❖ **SSK 1211 & SSK 1212** may be co-requisites for students who finished their LC Level requirements (except AWT 1002) or do not need LC courses (except AWT 1002).

* Arabic and French language requirements: A total of 6 SCH in these languages is a requirement of the UCC. Students take 0-6 SCH of Arabic and/or 0-6 SCH of French, depending on their background. Students holding a Moroccan baccalaureate or having had Arabic as the language of instruction in high school are not required to take Arabic courses (0 SCH). They fulfill the Arabic language requirement by taking one of the following UCC content courses taught in Arabic: HIS1302, HUM3303, LIT2304, or LIT2305. Language requirement in the UCC should be met by taking French courses depending on the TEF score.

Students who have not had Arabic as the language of instruction in high school are required to successfully complete ARB1320 and any lower level pre-requisite Arabic language courses. A placement test will determine which Arabic courses (such as ARB1309 and ARB1310) are needed. A maximum of 6 SCH in Arabic can be counted as fulfilling the UCC language requirement. Any additional credits will not count towards the degree. All students must also pass the Arabic component of the Exit Exam.

All students are required to satisfy the TEF-B2 level of French, or take the required course(s) to reach the level needed, FRN3310, before graduation. Students will take a placement test which determines the French courses (such as FRN2310) needed to achieve this level of proficiency. A maximum of 6 SCH in French can be counted as fulfilling the UCC requirement. Any additional courses (such as FRN1305 and FRN1308) will not count towards the degree and will be graded on Pass/Fail basis. All students must also pass the French component of the Exit Exam.

** History and Humanities requirement: Students who take a content course taught in Arabic (HIS1302, HUM3303, HUM3304, LIT2304, or LIT2305) fulfill a History or Humanities requirement of the UCC. They may not take the equivalent course in English (HIS2301, HUM3301, HUM3302) or Arabic (ARB2304, ARB2305) to fulfill another requirement

SCHOOL CORE   36 SCH

CSC 2302	Data Structures *(Pre-requisites*: CSC1401)	3 SCH	Met ☐	not Met ☐
CSC 3324	Software Engineering I *(Pre-requisites: CSC2302)*	3 SCH	Met ☐	not Met ☐
CSC 3326	Database Systems *(Pre-requisites: CSC3324)*	3 SCH	Met ☐	not Met ☐
EGR 2302	Engineering Economics *(Pre-requisites: MTH1303)*	3 SCH	Met ☐	not Met ☐
EGR 3331	Digital Design *(Co-requisites: PHY1402)*	3 SCH	Met ☐	not Met ☐
EGR 4300	Internship *(Pre-requisites:* May be combined with EGR 4402 for 7 SCH.	3 SCH	Met ☐	not Met ☐
EGR 4402*	Capstone Design *(Pre-requisites* : To be taken during the last regular semester of enrollment.	4 SCH	Met ☐	not Met ☐
MTH 2301	Multivariable Calculus *(Pre-requisites: MTH1303)*	3 SCH	Met ☐	not Met ☐
MTH 3301	Engineering Probability and Statistics *(Pre-requisites: MTH2301 and Junior Standing)*	3 SCH	Met ☐	not Met ☐
PHY 1401	Physics I *(Pre-requisites: MTH1303)*	4 SCH	Met ☐	not Met ☐
PHY 1402	Physics II *(Pre-requisites: PHY1401)*	4 SCH	Met ☐	not Met ☐

* May be combined with internship 7 SCH

PROGRAM CORE   43 SCH

Required courses: **6 SCH**

MTH 2303	Linear Algebra and Matrix Theory *(Pre-requisite* : *MTH 2301)*	3 SCH	Met ☐	not Met ☐
MTH 2304	Differential Equations *(Pre-requisite : MTH 2303)*	3 SCH	Met ☐	not Met ☐

ENGINEERING CORE   21 SCH

EGR 2402	Electrical Circuits *(Pre-requisite : PHY1402 & MTH 2304 as pre or co- requisite)*	4 SCH	Met ☐	not Met ☐
EGR 3304	Materials Science *(Pre-requisite : PHY1402 and CHE 1402)*	3 SCH	Met ☐	not Met ☐
EGR 3306	Engineering Instrumentation I *(Pre-requisite : EGR 2402)*	3 SCH	Met ☐	not Met ☐
EGR 3308	Thermal Engineering *(Pre-requisite : PHY 1402)*	3 SCH	Met ☐	not Met ☐
EGR 3402	Statics and Dynamics *(Pre-requisite : MTH2301 and PHY 1401)*	4 SCH	Met ☐	not Met ☐
CHE 1402	General Chemistry II (*Pre-requisite: CHE 1401)*	4 SCH	Met ☐	not Met ☐

MANAGEMENT CORE

       16 SCH

ACC 2301	Accounting Principles *(Pre-requisite: MTH1303 or MTH 1304)*	3 SCH	Met ☐	not Met ☐
FIN 3301	Business and Corporate Finance *(Pre-requisites: ACC 2301 & EGR 2302)*	3 SCH	Met ☐	not Met ☐
GBU 3401	Advanced Quantitative Methods in Business *(Pre-requisite : junior Standing and GBU 3301; or MTH 3301)*	4 SCH	Met ☐	not Met ☐
MGT 3301	Principles of Management *(Pre-requisites: ACC 2301 & EGR 2302)*	3 SCH	Met ☐	not Met ☐
MGT 3303	Operations Management *(Pre-requisites: MGT 3301 and either GBU 3401 or MTH 3301)*	3 SCH	Met ☐	not Met ☐

MINOR IN SOFTWARE ENGINEERING   6 SCH

CSC 2303	Advanced Programming/Object-Oriented Programming *Pre-requisite: CSC 2302)*	3 SCH	Met ☐	not Met ☐
CSC 3323 or CSC 3325	Analysis of Algorithms *(Pre-requisite: CSC 2303)* or Software Engineering II *(Pre-requisite: CSC 3324)*	3 SCH	Met ☐	not Met ☐

In addition to the three courses CSC2302, CSC 2324 & CSC2326 from the School Core

ELECTIVES		6 SCH	Met ☐ not Met ☐

Two free electives will be chosen from university undergraduate courses in collaboration with, and with approval of, the Academic Advisor and Academic Coordinator. The following courses are not acceptable as BSEMS electives: CHE1400, CSC1400, GBU3301, MTH1388, MTH 1301, and PHY1400. Graduate courses in the major may be taken as electives after special permission from the Dean.
Students can customize their coursework by selecting their electives in a given area of expertise.

When electives are chosen in the area of **Business Administration**, the following are recommended:

GBU 3302	Legal Environment (*Pre-requisite Junior standing*)	3 SCH	Met ☐ not Met ☐
MGT 3302	Entrepreneurship (*Pre-requisites: MGT 3301, MKT 3301, FIN 3301*)	3 SCH	Met ☐ not Met ☐
MGT 4304	Organizational Behavior *(Pre-requisite: MGT 3301)*	3 SCH	Met ☐ not Met ☐
MGT 4309	Logistics and Supply Chain Management (*Pre-requisite: MGT 3303*)	3 SCH	Met ☐ not Met ☐
MKT 3301	Principles of Marketing (*Pre-requisites: ACC 2301 & EGR 2302*)	3 SCH	Met ☐ not Met ☐
MIS 3302	Managing the Information Resource (*Pre-requisite: MGT 3301 and MIS 3301 or special permission*)	3 SCH	Met ☐ not Met ☐
MKT 3302	Advertising and Promotion Management (*Pre-requisite: MKT 3301*)	3 SCH	Met ☐ not Met ☐
MKT 3303	Consumer Behavior (*Pre-requisite: MKT 3301*)	3 SCH	Met ☐ not Met ☐
MKT 4304	Marketing Research (*Pre-requisite: MKT 3301 and one of: GBU 3401, SSC2401, MTH 3301*)	3 SCH	Met ☐ not Met ☐
MKT 4305	Marketing Management (*Pre-requisites: MGT 3301 and one of the following: MKT 3302 or MKT 3303*)	3 SCH	Met ☐ not Met ☐

Total		135 SCH

NB. The combined BS/MS program allows qualified EMS students to pass directly from the BS to the MS in Software Engineering and Management Science (for more details refer to the catalog). They may also go on to do a Master in Business Administration or to do a Master of Science in Software Engineering, as long as they meet prerequisite requirements for all Masters Courses taken.