



## PROGRAM SHEET

### *BACHELOR OF SCIENCE IN GENERAL ENGINEERING*

**(BSGE)**

Catalog 2008-2010

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OFFICE OF THE REGISTRAR  
AL AKHAWAYN UNIVERSITY  
ENROLLMENT SERVICES

<b>UNIVERSITY CORE CURRICULUM</b>	<b>44 SCH</b>
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SSK 1211	Strategic Learning for University Success ( <i>Pre-requisite: Successful completion of at least three Language Center level I courses</i> )	2 SCH
SSK 1212	Research and Communication Skills ( <i>Pre-requisite: Successful completion of SSK1211 and all Language Center level II courses</i> )	2 SCH
SSK 1213	Critical Thinking and Analysis ( <i>Pre-requisite: SSK 1212 &amp; ENG1301</i> )	2 SCH
ARB 1310 / ARB 1320	Arabic for Academic Purposes / Arabic for Communication Purposes (NOT FOR STUDENTS WITH MOROCCAN BACCALAUREAT)	3 SCH
FRN 2310 / FRN 3310	French for Academic Purposes II / Advanced French Writing and Speaking Skills	3 SCH
CSC 1401	Computer Programming	4 SCH
COM 1301	Communication Through Speaking ( <i>Pre-requisite or Co-requisite: SSK 1213, ENG 1301</i> )	3 SCH
ENG 1301	English Composition I ( <i>Pre-requisite: Pass all Language Center Modules</i> )	3 SCH
ENG 2303	Technical Writing ( <i>Pre-requisites: Successful completion of all SSK courses, ENG 1301 and COM 1301</i> )	3 SCH
HIS 1301/ HIS1302(Arb/Frn) or HIS 2301 or PSC2301	History of the Arab World in <b>English</b> ( <i>Pre-requisite: ENG 1301, SSK 1212</i> ) or History of the Arab World in <b>Arabic</b> , equivalent to HIS 1301, ( <i>Pre-requisite: SSK1213</i> ) or Contemporary World History ( <i>Pre-requisite: ENG 1301</i> ) or Comparative Political Systems ( <i>Pre-requisite: ENG 1301</i> )	3 SCH
HUM 3302 / HUM 3303 LIT 2301 or LIT 2304 or LIT 2305	Introduction to the Study of Islamic Civilization in <b>English</b> ( <i>Pre-requisite: Junior Classification</i> ) or Introduction to the Study of Islamic Civilization in <b>Arabic</b> , ( <i>Pre-requisite: Junior Classification</i> ) or Major Works of World Literature (equivalent to ARB 2305/LIT 2305) ( <i>Pre-requisite: Sophomore Classification and ENG 1301</i> ), or Introduction to Arabic Literature (equivalent to ARB 2304), or Introduction to World Literature in Arabic (equivalent to ARB 2305/LIT 2301) ( <i>Pre-requisite: Sophomore Classification</i> )	3 SCH
HUM 3305 or HUM 3306 or PHI 2301 or PHI 2302	Science and Society ( <i>Pre-requisite: Junior Classification</i> ) or Comparative Religion ( <i>Pre-requisite: Junior Classification</i> ) or Philosophical Thought ( <i>Pre-requisite: ENG 1301</i> ), or Philosophical Thought ( <i>Pre-requisite: ENG 1301</i> ) or History of Ideas	3 SCH
MTH 1303	Differential and Integral Calculus ( <i>Pre-requisites: Working knowledge of algebra, trigonometry and analytical geometry.</i> )	3 SCH
CHE 1401, BIO1401/1402	General Chemistry I, Principles of Biology or Environmental Biology	4 SCH
GEO 1301 or PSY 1301 or SOC 1301 or SSC 1310	Introduction to Sociology, Or Introduction to Anthropology, Or Introduction to Geography, Or Introduction to Psychology	3 SCH

\* BSGE majors must choose CHE 1401.

<b>GENERAL ENGINEERING CORE</b>	<b>36 SCH</b>
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CSC 2302	Data Structures ( <i>Pre-requisites: CSC1401 &amp; MTH 1304 (required for BCSC program &amp; recommended for the other programs)</i> )	3 SCH
CSC 3324	Software Engineering I ( <i>Pre-requisite: CSC2302</i> )	3 SCH
CSC 3326	Database Systems ( <i>Pre-requisite: CSC3324</i> )	3 SCH
EGR 2302	Engineering Economics ( <i>Pre-requisite: MTH1303</i> )	3 SCH
EGR 3331	Digital Design ( <i>Co-requisite: PHY1402</i> )	3 SCH
EGR 4300	Internship (May be combined with EGR 4402 for 7 SCH.)	3 SCH
EGR 4402*	Capstone Design ( <i>Pre-requisite: To be taken during the last regular semester of enrollment.</i> )	4 SCH
MTH 2301	Multivariable Calculus ( <i>Pre-requisite: MTH1303</i> )	3 SCH
MTH 3301	Engineering Probability and Statistics ( <i>Pre-requisite: MTH2301</i> )	3 SCH
PHY 1401	Physics I ( <i>Pre-requisite: MTH1303</i> )	4 SCH
PHY 1402	Physics II ( <i>Pre-requisite: PHY1401</i> )	4 SCH

\* May be combined with internship 7 SCH

<b>GENERAL ENGINEERING MAJOR</b>	<b>31 SCH</b>
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BIO 1401 or BIO 1402	Principles of Biology or Environmental Biology	4 SCH
CSC 2303	Advanced Programming/Object-Oriented Programming ( <i>Pre-requisite: CSC 2302</i> )	3 SCH
CSC 2304	Computer Architecture ( <i>Pre-requisites: CSC 2302 and EGR 3331</i> )	3 SCH

### ENGINEERING CORE

CHE 1402	General Chemistry II ( <i>Pre-requisite: CHE 1401</i> )	4 SCH
EGR 2402	Electrical Circuits 1 ( <i>Pre-requisites: PHY 1402 and MTH 2304</i> )	4 SCH
EGR 3304	Materials Science ( <i>Pre-requisites: CHE 1402 and PHY 1402</i> )	3 SCH

EGR 3306	Engineering Instrumentation ( <i>Pre-requisite: EGR 2402</i> )	3 SCH
EGR 3308	Thermal Engineering ( <i>Pre-requisite: PHY 1402</i> )	3 SCH
EGR 3402	Statics and Dynamics ( <i>Pre-requisites: MTH 2301; PHY 1401</i> )	4 SCH

<b>CONCENTRATIONS</b>	<b>12 SCH</b>
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### COMPUTER SCIENCE

CSC 3351	Operating Systems ( <i>Pre-requisites : CSC 2303 and CSC 2304</i> )	3 SCH
CSC 3352	Computer Communication ( <i>Pre-requisites: CSC 2303 and CSC 2304</i> )	3 SCH
<b>In addition: 2 advanced courses in computer science*</b>		6 SCH

\*The two advanced courses in computer science can be chosen from:

CSC 3309	Artificial Intelligence ( <i>Pre-requisites: CSC 2303 and Junior Classification</i> )	3 SCH
CSC 3325	Software Engineering II ( <i>Pre-requisite: CSC 3324</i> )	3 SCH
CSC 3327	Internet Technologies ( <i>Pre-requisite: CSC 3326</i> )	3 SCH
CSC 3328	Embedded Systems ( <i>Pre-requisite: CSC 3351</i> )	3 SCH
CSC 3341	Computer Graphics ( <i>Pre-requisite: CSC 2302</i> )	3 SCH
CSC 3353	Computer Networks ( <i>Pre-requisite: CSC 3352</i> )	3 SCH
CSC 3354	Distributed Systems ( <i>Pre-requisites: CSC 3351 and CSC 3352</i> )	3 SCH
CSC 3355	Computer Security ( <i>Pre-requisites: CSC 2303 and Senior Classification</i> )	3 SCH

<b>MINOR</b>	<b>9 SCH</b>
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MTH 1304	Discrete Mathematics for Engineers	3 SCH
MTH 2303	Linear Algebra ( <i>Pre-requisite : MTH 2301</i> )	3 SCH
MTH 2304	Differential Equations ( <i>Pre-requisite : MTH 2303</i> )	3 SCH

**Note:** To these are added MTH 2301 and MTH 3301 from the school core to give a total of 15 SCH.

<b>ELECTIVES</b>	<b>3 SCH</b>
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One elective 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 BSGE electives: CHE1400, CSC1400, GBU 3301, MTH1388, MTH1301, and PHY1400. Graduate courses in the major may be taken as electives after special permission from the Dean.

<b>TOTAL</b>	<b>135 SCH</b>
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**NB.** The combined BS/MS program allows qualified GE students to pass directly from the BS to the MS in Computer Science/ Computer Networks/ Software Engineering (for more details refer to the catalog).