



## PROGRAM SHEET

### *BACHELOR OF SCIENCE IN COMPUTER SCIENCE*

*(BSCS)*

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OFFICE OF THE REGISTRAR  
AL AKHAWAYN UNIVERSITY  
ENROLLMENT SERVICES

<b>UNIVERSITY CORE CURRICULUM</b>	<b>52 – 53 SCH</b>
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SSK 1201	Study Skills I: Skills for Learning and Research	2 SCH
SSK 1202	Study Skills II : Critical Reading and Problem Solving ( <i>Pre-requisite: SSK 1201, SSK 1203; co-requisites: AWT 1002 and ARD1002</i> )	2 SCH
SSK 1203	Computer Skills for Independent Learning	2 SCH
SSK 1204	Applied Independent Learning Methods ( <i>Pre-requisite: SSK 1201; SSK 1203; co-requisites AWT 1002 and ARD1002</i> )	2 SCH
SSK 1205	Inter-personal skills and Social interaction in an Academic Context ( <i>co-requisite: ALS 1002</i> )	2 SCH
ARB 13xx series	Appropriate placement to be determined by student's entry level	3 SCH
FRN 12xx series	Appropriate placement to be determined by student's entry level	2 SCH
FRN or ARB	Appropriate placement to be determined by student's entry level	2-3 SCH
BIO 1401 or BIO 1402 or CHE 1401	Principles of Biology , or Environmental Biology, or General Chemistry I	4 SCH
CSC 1401	Computer Programming	4 SCH
COM 1301	Communication through Speaking ( <i>Pre-requisite : ENG 1301 and SSK1202</i> )	3 SCH
ENG 1301	English Composition I ( <i>Pre-requisite: AWT 1002</i> )	3 SCH
ENG 1302	English Composition II ( <i>Pre-requisite : ENG 1301 and SSK1204</i> )	3 SCH
HIS 1301 or HIS 2301 or PSC2301	History of the Arab World ( <i>Pre-requisite : ENG 1301 and SSK1202</i> ) or Contemporary World History or Comparative Political System ( <i>Pre-requisite : ENG 1302</i> )	3 SCH
HUM 3301 or HUM 3302 or HUM 3306 or LIT 2301, or PHI 2301	Introduction to Islamic Art and Architecture or Introduction to the Study of Islamic Civilization or Comparative Religion ( <i>Pre-requisite: Junior standing</i> ), Major Works in World Literature ( <i>Pre-requisite: Sophomore classification and ENG 1302</i> ) or Philosophical Thought ( <i>Pre-requisite: ENG 1302</i> )	3 SCH
MTH 1304	Discrete Mathematics for Engineers	3 SCH
PED 1201	Physical Education: Fitness for Living	2 SCH
PHY 1401	Physics I ( <i>Pre-requisite: MTH 1303</i> )	4 SCH
SOC1301 or PSY 1301 or SSC1310	Introduction to Sociology, or Introduction to Psychology or Introduction to Antropology	3 SCH

<b>SCHOOL CORE</b>	<b>26 SCH</b>
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EGR 4300	Internship ( <i>Pre-requisite : Senior standing</i> )	3 SCH
EGR 4402	Capstone Design ( <i>To be taken during the last regular semester of enrollment</i> )	4 SCH
EGR 2302	Engineering Economics ( <i>Pre-requisite : MTH 1303</i> )	3 SCH
EGR 3331	Digital Design ( <i>Pre-or- co-requisite : PHY 1402</i> )	3 SCH
MTH1303	Differential & Integral Calculus	3 SCH
MTH 2301	Multivariable Calculus ( <i>Pre-requisite : MTH 1303</i> )	3 SCH
MTH 3301	Probability & Statistics fo Engineers ( <i>Pre-requisite : MTH 2301</i> )	3 SCH
PHY 1402	Physics II ( <i>Pre-requisite : PHY1401</i> )	4 SCH

<b>COMPUTER SCIENCE MAJOR</b>	<b>36 SCH</b>
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**1. REQUIRED COURSES: 27 SCH**

CSC 2302	Data Structures ( <i>Pre-requisite : CSC 1401; co-requisite MTH 1304</i> )	3 SCH
CSC 2303	Advanced Programming/Object-Oriented programming ( <i>Pre-requisite : CSC 2302</i> )	3 SCH
CSC 2304	Computer Architecture ( <i>Pre-requisite : CSC 2302 and EG R3331</i> )	3 SCH
CSC 3315	Languages and Compilers ( <i>Pre-requisite : CSC 2303</i> )	3 SCH
CSC 3323	Algorithm Analysis ( <i>Pre-requisite : CSC 2303</i> )	3 SCH
CSC 3324	Software Engineering I ( <i>Pre-requisite : CSC 2303</i> )	3 SCH
CSC 3326	Database Systems ( <i>Pre-requisite : CSC 3324</i> )	3 SCH
CSC 3351	Operating Systems ( <i>Pre-requisite : CSC 2303 and CSC 2304</i> )	3 SCH
CSC 3352	Computer Communication ( <i>Pre-requisite : CSC 2303 and CSC 2304</i> )	3 SCH

**2. ADVANCED COURSES: (SELECT THREE (3) ONLY) 9 SCH**

CSC 3309	Artificial Intelligence ( <i>Pre-requisite : CSC 2303 and Junior Standing</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 2303 and Junior Standing</i> )	3 SCH
CSC 3353	Computer Networks ( <i>Pre-requisite : CSC 3352</i> )	3 SCH
CSC 3354	Distributed Systems ( <i>Pre-requisite : CSC 3351 and CSC 3352</i> )	3 SCH
CSC 3355	Computer Security ( <i>Pre-requisite : CSC 2303 and senior standing</i> )	3 SCH

<b>MINORS</b>	<b>17-18 SCH</b>
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**GENERAL ENGINEERING 15-18 SCH**

CHE 1402	General Chemistry II ( <i>Pre-requisite : CHE 1401</i> )	4 SCH
EGR 2402	Electrical Circuits ( <i>Pre-requisite :PHY 1402</i> )	4 SCH
<b>and select 3 courses of the following:</b>		
EGR 3304	Materials Science ( <i>Pre-requisite : 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-requisite : MTH 2301 and PHY 1401</i> )	4 SCH

**BUSINESS ADMINISTRATION 15 SCH**

Students should take ECO 2301 Microeconomics and ECO 2302 Macroeconomics, that maybe counted as electives, in addition to the **five** required minor courses listed below.

ACC 2301	Accounting Principles I ( <i>Pre-requisite : MTH 1300 or MTH 1303, or MTH 1304</i> )	3 SCH
FIN 3301	Business and Corporate Finance ( <i>Pre-requisite : ACC 2302 and ECO 2302; or ACC 2301 and EGR 2302</i> )	3 SCH
MGT 3301	Principles of Management ( <i>Pre-requisite : ACC 2302 and ECO 2302; or ACC 2301 and EGR 2302</i> )	3 SCH
<b>In addition, students must choose any two (2) out of the following:</b>		
MKT 3301	Principles of Marketing ( <i>Pre-requisite: ACC 2302 and ECO 2302; or ACC 2301 and EGR 2302</i> )	3 SCH
ACC 2302	Accounting Principles ( <i>Pre-requisite: ACC 2301</i> )	3 SCH
MGT 3303	Operations Management ( <i>Pre-requisite: MGT 3301 and either GBU 3301 or MTH 3301</i> )	3 SCH
GBU 4308	Net-Economics and E-Business ( <i>Pre-requisite: Senior standing</i> )	3 SCH
GBU 4401	Advanced Quantitative Methods In Business ( <i>Pre-requisite: Senior standing and GBU 3301; or MTH 3301</i> )	3 SCH
MGT 3302	Entrepreneurship ( <i>Pre-requisite : MGT 3301</i> )	3 SCH
MIS 3302	Managing the Information Resource ( <i>Pre-requisite : MGT 3301 and MIS 3301 or special permission</i> )	3 SCH
MKT 3301	Principles of Marketing ( <i>Pre-requisite : ACC 2302 and ECO 2302; or ACC 2301 and EGR 2302</i> )	3 SCH
MKT 4304	Marketing Research ( <i>Pre-requisite : MKT 3301 and one of the following: GBU, SSC 2401, MTH 3301</i> )	3 SCH
MKT 4305	Marketing Management ( <i>Pre-requisite : MKT 3301, GBU 3301 and MGT 3301</i> )	3 SCH
MGT 4309	Logistics and Supply Chain Management ( <i>Pre-requisite : MGT 3303</i> )	3 SCH

**INTERNATIONAL STUDIES 18 SCH**

**1. REQUIRED COURSES: 3 SCH**

INS 3301	Theories & Models of International Relations ( <i>Pre-requisite : PSC 2301</i> )	3 SCH
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**2. AT LEAST THREE (3) COURSES FROM THE FOLLOWING:**

ECO 2310*	Introduction to International Economics	3 SCH
GEO 1301	Introduction to Geography	3 SCH
HIS 3301	Twentieth Century International History ( <i>Pre-requisite : HIS 1301 or HIS 2301</i> )	3 SCH
INS 3302	International Law & Organizations ( <i>Pre-requisite : INS 3301</i> )	3 SCH
<b>In addition to two (2) other courses from within the International Studies Program</b>		6 SCH

**Note:** ECO 2310 is only open to non Business Administration students.

**HUMAN RESOURCE DEVELOPMENT 18 SCH**

HRD 2300	Introduction to Human Resource Development	3 SCH
HRD 3301	Human Capital Management	3 SCH
HRD 3302	Ethics in Professional Contexts ( <i>Pre-requisite : Junior standing</i> )	3 SCH
PSY 3302 or HRD 3303	Social/Organizational Psychology ( <i>Pre-requisite : PSY 1301 or special permission</i> ) or Training and Development ( <i>Pre-requisite : HRD 2300</i> )	3 SCH
HRD 4303	Advanced Professional Relations Skills for HRD ( <i>Pre-requisite : PSY 1301 and HRD 2300</i> )	3 SCH
HRD 4304	Consulting for HRD ( <i>Pre-requisite : HRD 2300 and HRD 3301</i> )	3 SCH

## COMMUNICATION STUDIES 18 SCH

### 1. REQUIRED COURSES: 12 SCH

COM 1302	Introduction to Mass Communication ( <i>Pre-requisite : ENG 1301 and SSK 1202</i> )	3 SCH
COM 2301or COM 3310	Advanced Speech and Multimedia ( <i>Pre-requisite : COM 1301</i> ) or Introduction to Promotional Communication ( <i>Pre-requisite : COM 2301</i> )	3 SCH
COM 2303	International Communication ( <i>Pre-requisite : COM 1302 or Dean's Approval</i> )	3 SCH
COM 3325	Technical Communication Skills ( <i>Pre-requisite : COM 2301</i> )	3 SCH

### 2. IN ADDITION, STUDENTS MUST CHOOSE ANY TWO (2) OUT OF THE FOLLOWING:

COM 3310	Introduction to Promotional Communication ( <i>Pre-requisite : COM 2301</i> )	3 SCH
COM 3321	Mass Media & Society ( <i>Pre-requisite : SOC 1301 or SSC 1310 and COM 1302</i> )	3 SCH
COM 3322 or COM 3323 or COM 3324	Writing for the Media in English ( <i>Pre-requisite : Junior Standing and ENG 1302 and COM 1302</i> ) or Writing for the Media in French ( <i>Pre-requisite : Junior Standing and ENG 1302 and COM 1302</i> ) or Writing for the Media in Arabic ( <i>Pre-requisite : Junior Standing and COM 1302 and ARB 1320</i> )	3 SCH
COM 3326	Visual Communication ( <i>Pre-requisite : COM 2301</i> )	3 SCH
COM 3327	Persuasion ( <i>Pre-requisite : ENG 2301</i> )	3 SCH
COM 3328	Mass Media Text Analysis ( <i>Pre-requisite : ENG 2301 and COM 3320</i> )	3 SCH
COM 3329	Screen Studies ( <i>Pre-requisite : Junior Standing</i> )	3 SCH
COM 3399	Special Topics in Communication ( <i>Pre-requisite : Junior Standing</i> )	3 SCH
COM 4301	Public Relations Communication ( <i>Pre-requisite : Junior Standing</i> )	3 SCH
COM 4302	Video and Film Production ( <i>Pre-requisite : Junior Standing</i> )	3 SCH
COM 4304	Media and Development ( <i>Pre-requisite : Senior standing and SOC 1301 or SSC 1310 or instructor's permission</i> )	3 SCH

Minors may require students to use elective courses to satisfy minor requirements beyond 15 SCH (including prerequisites for minor courses).

BSCS students may receive a second minor, in mathematics, by completing a total of 5 courses selected from the list: MTH 1304, 1303, 2301, 2303, 2304, 3301, 3302.

### **ELECTIVES**

**9 SCH**

Three 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 BSCSC electives: CHE1400, CSC1400, MTH1399, MTH1300, MTH1301, and PHY1400. Graduate courses in the major may be taken as electives after special permission from the Dean.

### **TOTAL**

**138-139 SCH**

**NB/** The combined BS/MS program allows qualified CSC students to pass directly from the BS to the MS in Computer Science/ Computer Networks/ Software Engineering ( for more details, catalog).

In general, students may need to take additional courses when required as pre-requisite. They can validate these courses as electives.