



## PROGRAM SHEET

### *BACHELOR OF SCIENCE IN COMPUTER SCIENCE*

### *(BSCS)*

Catalog 2010-2012



**UNIVERSITY CORE CURRICULUM**
**44 SCH**

SSK 1211	Strategic Learning for University Success ( <i>Pre-requisite: Successful completion of at least three Language Center level I courses</i> )	2 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
SSK 1212	Information Literacy Skills ( <i>Pre-requisite: Successful completion of SSK1211 and all Language Center level II courses</i> )	2 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
SSK 1213	Critical Thinking and Analysis ( <i>Pre-requisite: SSK 1212 &amp; ENG1301</i> )	2 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
*ARB 1310 or ARB 1320	Arabic for Academic Purposes Arabic for Communication Purposes	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
*FRN 2310 or FRN 3310	French for Academic Purposes II Advanced French Writing and Speaking Skills	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
CSC 1401	Computer Programming	4 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
COM 1301	Communication Through Speaking ( <i>Pre-requisite: ENG 1301</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
ENG 1301	English Composition I ( <i>Pre-requisite: Pass all Language Center Modules</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
ENG 2303	Technical Writing ( <i>Pre-requisites: Successful completion of all SSK courses, ENG 1301 and COM 1301</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
HIS 1301 or **HIS1302(Arb)or HIS 2301 or PSC 2301	History of the Arab World in <i>or</i> History of the Arab World in <b>Arabic</b> , ( <i>equivalent to HIS 1301</i> ), <i>or</i>  Contemporary World History ( <i>Pre-requisite: ENG 1301</i> ) <i>or</i> Comparative Political Systems ( <i>Pre-requisite : ENG 1301</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
HUM 3302 or **HUM 3303 or  LIT2301or  **LIT 2304 or LIT 2305	Introduction to the Study of Islamic Civilization in <b>English</b> ( <i>Pre-requisite: Junior Classification</i> ) <i>or</i> Introduction to the Study of Islamic Civilization in <b>Arabic</b> , ( <i>Pre-requisite: Junior Classification</i> ) <i>or</i> Major Works of World Literature ( <i>equivalent to ARB 2305/LIT 2305</i> ) ( <i>Pre-requisite: Sophomore Classification and ENG 130</i> ), <i>or</i> Introduction to Arabic Literature( <i>equivalent to ARB 2304</i> ), <i>or</i> Introduction to World Literature <b>in Arabic</b> ( <i>equivalent to ARB 2305/LIT 2301</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
HUM 3305 or HUM 3306 or PHI 2301 or PHI 2302	Science and Society ( <i>Pre-requisite: Junior Classification</i> ) <i>or</i> Comparative Religion ( <i>Pre-requisite: Junior Classification</i> ) <i>or</i> Philosophical Thought ( <i>Pre-requisite: ENG 1301</i> ), <i>or</i> History of Ideas	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
MTH 1303	Differential and Integral Calculus ( <i>Pre-requisites: Working knowledge of algebra, trigonometry and analytical geometry</i> ).	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
CHE 1401 or BIO 1401 or BIO 1402	General Chemistry I, <i>or</i> Principles of Biology <i>or</i> Environmental Biology	4 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
SOC1301 or SSC1310 or GEO 1301 or PSY 1301	Introduction to Sociology, <i>or</i> Introduction to Anthropology, <i>or</i> Introduction to Geography, <i>or</i> Introduction to Psychology	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>

**Notes :**

**(\*) 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 ( <i>Pre-requisites: CSC1401 &amp; Pre or Co-requisites MTH 1304</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
CSC 3324	Software Engineering I ( <i>Pre-requisites: CSC2302</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
CSC 3326	Database Systems ( <i>Pre-requisites: CSC3324</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
EGR 2302	Engineering Economics ( <i>Pre-requisites: MTH1303</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
EGR 3331	Digital Design ( <i>Co-requisites: PHY1402</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
EGR 4300	Internship ( <i>Pre-requisites: May be combined with EGR 4402 for 7 SCH.</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
EGR 4402*	Capstone Design ( <i>Pre-requisites : To be taken during the last regular semester of enrollment.</i> )	4 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
MTH 2301	Multivariable Calculus ( <i>Pre-requisites: MTH1303</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
MTH 3301	Engineering Probability and Statistics ( <i>Pre-requisites: MTH2301 and Junior Standing )</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
PHY 1401	Physics I ( <i>Pre-requisites: MTH1303</i> )	4 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
PHY 1402	Physics II ( <i>Pre-requisites: PHY1401</i> )	4 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>

\* May be combined with internship 7 SCH

<b>COMPUTER SCIENCE MAJOR</b>	<b>33 SCH</b>
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**Required courses:**

**24 SCH**

MTH1304	Discrete Mathematics for Engineers	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
MTH 2303	Linear Algebra and Matrix Theory ( <i>Pre-requisite: MTH 2301</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
CSC 2303	Advanced Programming/Object-Oriented Programming ( <i>Pre-requisite: CSC 2302</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
CSC 2304	Computer Architecture ( <i>Pre-requisite: CSC 2302 and EGR 3331</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
CSC 3315	Languages and Compilers ( <i>Pre-requisite: CSC 2303</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
CSC 3323	Analysis of Algorithm ( <i>Pre-requisite: CSC 2303</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
CSC 3351	Operating Systems ( <i>Pre-requisites: CSC 2303 and CSC 2304</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
CSC 3352	Computer Communications ( <i>Pre-requisite: CSC 2303 and CSC 2304</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>

**In addition choose three from the following:**

**9 SCH**

CSC 3309	Artificial Intelligence ( <i>Pre-requisites: CSC 2303 and Junior Classification</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
CSC 3325	Software Engineering II ( <i>Pre-requisite: CSC 3324</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
CSC 3327	Internet Technologies ( <i>Pre-requisite : CSC 3326</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
CSC 3328	Embedded Systems ( <i>Pre-requisite : CSC 3351</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
CSC 3341	Computer Graphics ( <i>Pre-requisite : CSC 2302</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
CSC 3353	Computer Networks ( <i>Pre-requisite: CSC 3352</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
CSC 3354	Distributed Systems ( <i>Pre-requisites: CSC 3351 and CSC 3352</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
CSC 3355	Computer Security ( <i>Pre-requisites: CSC 2303 and Senior Classification</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>

<b>MINORS</b>	<b>15-19 SCH</b>
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**GENERAL ENGINEERING**

**17-18 SCH**

**Required courses:**

**8 SCH**

CHE 1402	General Chemistry II ( <i>Pre-requisite : CHE 1401</i> )	4 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
EGR 2402	Electrical Circuits ( <i>Pre-requisite :PHY 1402 &amp; MTH 2304 as pre or co-requisite</i> )	4 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>

**In addition, select three courses of the following:**

**9-10 SCH**

EGR 3304	Materials Science ( <i>Pre-requisite :CHE 1402 and PHY 1402</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
EGR 3306	Engineering Instrumentation ( <i>Pre-requisite : EGR 2402</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
EGR 3308	Thermal Engineering ( <i>Pre-requisite : PHY 1402</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>

EGR 3402	Statics and Dynamics ( <i>Pre-requisite : MTH 2301 and PHY 1401</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
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## BUSINESS ADMINISTRATION

**15 -16 SCH**

### Required Courses :

**9 SCH**

ACC 2301	Accounting Principles I I ( <i>Pre-requisite: MTH 1303, or MTH 1304</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
FIN 3301	Business and Corporate Finance ( <i>Pre-requisite : ACC 2301 and EGR 2302</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
MGT 3301	Principles of Management ( <i>Pre-requisite : ACC 2301 and EGR 2302</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>

### In addition, students must choose two out of the following courses:

**6-7 SCH**

ACC 2302	Accounting Principles II( <i>Pre-requisite: ACC 2301</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
MGT 3303	Operations Management ( <i>Pre-requisite: MGT 3301 and either GBU 3401 or MTH 3301</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
GBU4308	Net-Economics and E-Business ( <i>Pre-requisite: Senior standing</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
GBU 3401	Advanced Quantitative Methods in Business( <i>Pre-requisite : junior Standing and GBU 3301; or MTH 3301</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
MGT 3302	Entrepreneurship ( <i>Pre-requisite : MGT 3301 &amp; MKT 3301 &amp; FIN 3301</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
MKT 3301	Principles of Marketing ( <i>Pre-requisite : ACC 2301 and EGR 2302</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
MKT 4304	Marketing Research( <i>Pre-requisite : MKT 3301 and one of the following: GBU 3401, SSC 2401, MTH3301</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
MIS 3302	Managing the Information Resource( <i>Pre-requisite : MGT 3301 and MIS 3301 or Special Permission</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
MKT4305	Marketing Management ( <i>Pre-requisite : MGT 3301 &amp; MKT 3302 or MKT 3303</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
MGT 4311	E-Marketing ( <i>Pre-requisite : senior standing</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>

## HUMAN RESOURCE DEVELOPMENT

**18 SCH**

### Required courses:

**9 SCH**

HRD 2300	Introduction to Human Resources Development	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
HRD 2301 or HRD 3302 *	Business Environment and Ethics for HRD or Ethics in Professional Contexts ( <i>Pre-requisite: Junior Classification</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
HRD 3401	Human Capital Management	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>

### In addition students must complete any three courses from the list below

**9 SCH**

HRD 3303	Training & Development ( <i>Pre-requisite: HRD2300</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
HRD 3304	Strategic HRD ( <i>Pre-requisites: HRD 2300 and HRD 3401</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
HRD 3305	Issues in the Human and Social Development ( <i>Pre-requisites: HRD 2300</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
HRD 3399	Special Topics in HRD ( <i>Pre-requisite: Junior Classification</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
HRD 4301	Program and Project Management ( <i>Pre-requisite: HRD 2300</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
HRD 4302	Needs Assessment and Org Effectiveness ( <i>Pre-requisite: HRD 2300 and 3301</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
HRD 4303	Leadership and Management Development ( <i>Pre-requisites: PSY 3302 or MGT4304</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
HRD 4304	Consulting for HRD( <i>Pre-requisites: HRD 2300 and HRD 3302 or permission of the instructor</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
HRD 4305	Human Resources Development in Public Administration( <i>Pre-requisites: HRD 2300 and HRD 3401</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
HRD 4306	Organizational Development and Change ( <i>Pre-requisites: HRD 2300 and HRD 3401</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>

## COMMUNICATION STUDIES

**18-19 SCH**

Students selecting the Minor in Communication Studies must complete 18 - 19 SCH from the following courses.

### Required courses:

**12 SCH**

COM 1302	Introduction to Mass Communication ( <i>Pre-requisite: ENG 1301</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
COM 2301	Professional Communication( <i>Pre-requisite: COM 1301</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
COM 3301 or COM 2303 or COM 3321	Public Relations Communication ( <i>Pre-requisite: COM1302 , Junior Standing, COM 2301 or International Communication (Pre-requisite: COM 1302)or Media and Society International Communication (Pre-requisite: COM 1302)</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
COM 2326	Visual Communication ( <i>Pre-requisite: COM 1302</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>

### In addition, students must complete any two of the following courses:

**6 -7 SCH**

COM 2304	Video and Film Production( <i>Pre-requisites: COM1302</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
COM 3301	Public Relations ( <i>Pre-requisite : Junior classification, COM1302 and COM2301</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
COM 3310	Promotional Communication ( <i>Pre-requisite : Junior classification, COM1302 and COM2301</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
COM 2320	Communication Theories ( <i>Pre-requisite COM 1302</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
COM 3321	Media and Society ( <i>Pre-requisite: Junior classification &amp; COM 1302</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
COM 3322	Writing for the Media in English ( <i>Pre-requisite: Junior classification, ENG 1301, COM 1302</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
COM 3323	Writing for the Media in French ( <i>Pre-requisite: Junior classification, COM 1302, FRN 3310 or equivalent</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
COM 3324	Writing for the Media in Arabic ( <i>Pre-requisite: Junior classification, COM 1302, ARB 1320 or equivalent</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
COM 2425	Print and Online Production <i>Pre-requisite: COM 1302</i> )	4 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
COM 3327	Persuasion ( <i>Pre-requisite: Junior classification</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
COM 3328	Mass Media Text Analysis ( <i>Pre-requisite: Junior classification &amp; COM 2320</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
COM 3330	Organizational Communication ( <i>Pre-requisite: Junior classification or COM 2301</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
COM 3399	Special Topics in Communication ( <i>Pre-requisite: Junior classification</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
COM 4301	Political Communication ( <i>Pre-requisite: Junior Classification and PSC 2301</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
COM 4302	Electronic Media Production ( <i>Pre-requisite: Junior classification and, COM 2304</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
COM 4304	Communication and Development ( <i>Pre-requisites: Senior Classification</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>

## INTERNATIONAL STUDIES

**18 SCH**

### 1- Required courses:

**6 SCH**

INS 3301	Theories & Models of International Relations ( <i>Pre-requisite : PSC 2301</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
PSC 2301*	Comparative Political Systems ( <i>Pre-requisite: ENG 1301</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>

### In addition students may choose three courses from the following:

**9 SCH**

GEO 1301	Introduction to Geography	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
ECO 2310 **	Introduction to International Economics	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
HIS 3301	Twentieth Century International History ( <i>Pre-requisite : HIS 1301 or HIS 2301 or HIS1302</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
INS 3302	International Law & Organizations ( <i>Pre-requisite : INS 3301</i> )	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>

**\*\*NOTE:** ECO 2310 is only open to students who are not taking ECO 2301 and ECO 2302 in fulfillment of some other degree requirement

### 2-

**3 SCH**

One optional course from within the International Studies field or area concentrations	3 SCH	Met <input type="checkbox"/> not Met <input type="checkbox"/>
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**\*NOTE:** Students minoring in International Studies must take PSC 2301 as part of the minor. They may take HIS 1301, HIS 1302, or HIS 2301 to fulfill the UCC requirement.

BSCSC 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.

<b>ELECTIVES</b>	<b>6 SCH</b>	Met <input type="checkbox"/> not Met <input type="checkbox"/>
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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, MTH1388, GBU 3301, MTH1301, and PHY1400. Graduate courses in the major may be taken as electives after special permission from the Dean.

<b>TOTAL</b>	<b>134-138 SCH</b>
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**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 refer to the catalog).



