جامعة الحسين التقنية
Al Hussein Technical University

School of Computing and Informatics

Department of Computer Science

Bachelor Degree – Computer Science: (135) Credit Hours

Specialization Pathways:

- General Computing
- Application Development
- Software Engineering
- Network Engineering

T: Theoretical Class
P: Practical Class
C: Contact Hours

Summary:

Classification	**Credit Hours**		
	Compulsory	**Elective**	**Total**
University Requirements	24	3	27
Faculty Requirements	42	6	48
Specialization Requirements	9	6	15
Placement in Industry Requirements	18	0	18
Top-up Requirements	21	6	27
Total (bachelor's degree)	**114**	**21**	**135**

0. English Language Prerequisites:

Depending on the results of the English language Placement Test

Course No.	Course Title	Cr. Hr.	Lecture	Lab.	Prerequisite
10301099	Pre-Foundation English Intensive + Lab	4	8	1	Placement Test 0-29

1. University Requirements: (27 Credit Hours)

Practical Hours: Labs, Workshops, Studios, Seminars, Tutorials, Training, Fieldwork, Boot Camps & Excursions.

1 Practical Hour = 2-3 contact hours

University Requirements (Bachelor Degree): 27 Credit Hours (Mandatory: 24, Elective: 3)

Mandatory: 24 Credit hours

Course No.	Course Title	Cr. Hr.	Lecture	Practical	Contact Hours	Prerequisite
10301100	Foundation English Pre-Intermediate Intensive + Lab	4	8	1	10	Placement Test 30-42 or 10301099
OR 10301110	Foundation English Intermediate Intensive + Lab				10	Placement Test 43-58
10301120	English Intermediate + Lab	3	4	1	6	Placement Test 10301100
OR 10301130	English Upper-Intermediate + Lab	3			6	Placement Test 59-66 or 10301110 /10301120
10303140	English Advanced	3	4	1	6	Placement Test 67-75 or 10301130
10301101	Soft Skills I	2	0	2	3	-
10301102	Soft Skills II	2	0	2	3	10301101
10303202	Entrepreneurship Boot Camp	6	3	3	12	-
10303201	Leadership Camp*	1	1	1	3	10301101
	Total	**24**				

* the course includes a 10-day intensive training boot camp held off-campus.

Electives: 3 Credit Hours

Course No.	Course Title	Cr. Hr.	Lecture	Practical	Contact Hours	Prerequisite
10302191	Science & Society Seminar I: Arab Contributions to Science and Arts	1	0	1	2	-
10303199	Science & Society Seminar II: Philosophy of Science	1	0	1	2	-
10303196	Art Appreciation and Techniques	1	0	1	2	-
	Strategies for Industry Competitiveness: Tools & Techniques	1	0	1	2	10301101
	Civil &Professional Culture	1	0	1	2	
	Rights and responsibilities	1	0	1	2	
	Total Taken	**3**				

2. Faculty Requirements: (42 Credit Hours)

Course No.	Course Title	Cr. Hr.	Lecture	Lab	Contact Hours	Prerequisite
10303100	Functional Math	3	3	0	3	-
10303110	Functional Physics	3	3	0	3	-
10200100	Fundamentals of Computing	4	3	1	5	-
10200101	Programming	3	2	1	4	10200100
10200110	Networking	3	2	1	4	10200100
10200120	Database Design & Development	3	2	1	4	10200100
10200140	Security	3	2	1	4	
10200190	Managing a Successful Computing Project (Pearson Set)	3	2	1	4	-
10200290	Computing Research Project (Pearson set)	6	4	2	8	10200190
10200230	Business Intelligence	3	2	1	4	10200130
10200191	Professional Practice	3	2	1	4	
10200271	IT Seminar*	2	2	0	2	
10101100	Workshop I	2	0	2	2	
10303130	STEM Lab I	1	0	1	2	
	Total	**42**				

* Note: Variable credit course(1-3), must be fixed for the student at the time of registration.

3. **Faculty Electives: (6 Credit Hours from the following)**

Course No.	Course Title	Cr. Hr.	Lecture	Lab.	Contact Hours	Prerequisite
10200180	Math for Computing	3	3	0	3	
10200102	Website Design & Development	3	2	1	4	10200100
10200121	Software Development Lifecycle	3	2	1	4	10200100
10200130	Data Analytics	3	2	1	4	10200100
10200150	Strategic Information Systems	3	2	1	4	10200100
10200181	Computer Systems Architecture	3	2	1	4	10200100
	Total Taken	**6**				

4. Placement in Industry Requirements

Course No.	Course Title	Cr. Hr.	Lecture	Lab.	Contact Hours	Prerequisite
10200399	On-Job Training	18	0	40	**40**	Obtain at least one certificate
	Total	**18**				

Computer Science Specializations (15 Credit Hours):

Students should choose to study one of the following lists depending on the specialization pathway:

4.1. CS General Pathway:

Course No.	Course Title	Cr. Hr.	Lecture	Lab.	Prerequisite
10202200	Data Structure & Algorithms	3	2	1	10200101
10201200	Advanced Programming	3	2	1	10200101
10201261	Prototyping	3	2	1	10200101
10201260	Application Development	3	2	1	10200101
10201210	Network Security	3	2	1	10200110
	Total	**15**			

4.2. Application Development Pathway:

Course No.	Course Title	Cr. Hr.	Lecture	Lab.	Prerequisite
10201261	Prototyping	3	3	0	10200101
10201262	Application Program Interface.	3	2	1	10200101
10201260	Application Development	3	2	1	10200101

	Department Elective	3	2	1	
	Department Elective	3	2	1	
	Total	**15**			

4.3. Software Engineering Pathway:

Course No.	Course Title	Cr. Hr.	Lecture	Lab.	Prerequisite
10200280	Discrete Math	3	2	1	10200180
10202200	Data Structures & Algorithms	3	2	1	10200101
10201200	Advanced Programming	3	2	1	10200101
	Department Elective	3	2	1	
	Department Elective	3	2	1	
	Total	**15**			

4.4. Network Engineering Pathway:

Course No.	Course Title	Cr. Hr.	Lecture	Lab.	Prerequisite
10201211	Transport Network Design	3	2	1	10200110
10201270	Cloud Computing	3	2	1	10200110
10201210	Network Security	3	2	1	10200110
	Department Elective	3	2	1	
	Department Elective	3	2	1	
	Total	**15**			

CS Department Electives (*choose 6 hrs. except for the general pathway*):

Course No.	Course Title	Cr. Hr.	Lecture	Lab.	Prerequisite
10200280	Discrete Mathematics	3	3	0	10200180
10202200	Data Structures & Algorithms	3	2	1	10200101
10201200	Advanced Programming	3	2	1	10200101
10201261	Prototyping	3	2	1	10200101
10201260	Application Development	3	2	1	10200101
10201262	Application Program Interface.	3	2	1	10200101
10201211	Transport Network Design	3	2	1	10200110
10201270	Cloud Computing	3	2	1	10200110
10201210	Network Security	3	2	1	10200110
	Total Taken	**6**			

Top-Up Requirements (21 hours):

Course No.	Course Title	Cr. Hr.	Lecture	Lab.	Prerequisite
10201420	Operating Systems	3	2	1	
10201421	Advanced Software Engineering	3	2	1	
10201400	System Programing	3	2	1	
10201460	Compiler Design	3	2	1	
10201401	Database Programing	3	2	1	
10201480	Advanced Computer Architecture	3	2	1	
10201471	Electronic commerce	3	2	1	
	Total	**21**			

TOP up Electives (choose only 6 hours)

Course No.	Course Title	Cr. Hr.	Lecture	Lab.	Prerequisite
10201435	Real-time Systems	3	2	1	
10201421	Distributed Systems	3	2	1	
10201460	Mobile Application Development	3	2	1	
10201481	Robotics	3	2	1	
20101470	Special Topics	3	2	1	
	Total taken	**6**			

English Language Prerequisites:

Depending on the results of the English language Placement Test

Course No.	Course Title	Cr. hr.	Prerequisite
10301099	Pre-Foundation English Intensive + Lab	4	Placement Test 0-29

Study Plan Guide:

First Year - Fall Semester (for all pathways)			
Course No.	**Course Title**	**Cr. hr.**	**Prerequisite**
10301100	Foundation English Pre-Intermediate Intensive +Lab	4	Placement Test 30-42
OR 10301110	Foundation English Intermediate Intensive + Lab		Placement Test 43-58
10301100	Functional Math	3	-
10200100	Fundamentals of Computing	4	-
10303130	STEM Lab I	1	-
10301101	Soft Skills I	2	-
10101100	Workshop I	2	-
	Total	**16**	

	First Year - Spring Semester (for all pathways)			
Course No.	**Course Title**	**Cr. hr.**	**Pearson**	**Prerequisite**
10301120	English Intermediate + Lab	3		Placement Test 43-50 or
Or 10301130	English Upper-Intermediate + Lab			Placement Test 59-66 or 10301110 /10301120
10200101	Programming	3	L4 (HNC)	10200100
10200110	Networking	3	L4 (HNC)	10200100
10200180	Math for Computing	3	L4 (HNC)	10303100
10200191	Professional Practice	3	L4 (HNC)	10301101
	Total	**15**		

	First Year - Summer Semester			
Course No.	**Course Title**	**Cr. hr.**	**Pearson**	**Prerequisite**
10200190	Managing a Successful Computing Project (Pearson Set)	3	L4 (HNC)	
10200120	Database design and development	3	L4 (HNC)	10200100
10301130	ENGL 130 / or none	3/0		Placement Test 59-66 or 10301110 /10301120

10200140	Security	3	L4 (HNC)	10200100
	Total	**/12**		

General Computing Pathway in CS

	Second Year - Fall Semester			
Course No.	**Course Title**	**Cr. hr.**	**Pearson**	**Prerequisite**
10200102/ 10200121	Faculty Elective	3	L4 (HNC)	10200100
10202200	Data Structures and Algorithms	3	L5 (HND)	10200101
10201261	Prototyping	3	L5 (HND)	10200101
10201200	Advanced Programming	3	L5 (HND)	10200101
10303110	Functional Physics	3		-
	University Elective	1		
	Total	**16**		

	Second Year - Spring Semester			
Course No.	**Course Title**	**Cr. hr.**	**Pearson**	**Prerequisite**
10200290	Computing Research Project (Pearson set)	**6**	L5 (HND)	10200190
10200230	Business Intelligence	3	L5 (HND)	10200130
10201260	Application Development	3	L5 (HND)	10200101
10201210	Network Security	3	L5 (HND)	10200110
	Total	**15**		

Application Development Pathway

	Second Year - Fall Semester			
Course No.	**Course Title**	**Cr. hr.**	**Pearson**	**Prerequisite**
	Faculty Elective	3	L4 (HNC)	
10201261	Prototyping	3	L5 (HND)	10200101
10201260	Application Development	3	L5 (HND)	10200101
10303110	Functional Physics	3		
	Department Elective	3		
	University Elective	1		
	Total	**16**		

	Second Year - Spring Semester			
Course No.	**Course Title**	**Cr. hr.**	**Pearson**	**Prerequisite**
10200290	Computing Research Project (Pearson set)	6	L5 (HND)	10200190
10200230	Business Intelligence	3	L5 (HND)	10200130
10201262	Application Program Interface	3	L5 (HND)	10200101
	Department Elective	3		
	Total	**15**		

Software Engineering Pathway in CS

	Second Year - Fall Semester			
Course No.	**Course Title**	**Cr. hr.**	**Pearson**	**Prerequisite**
	Faculty Elective	3	L4 (HNC)	
10202200	Data Structures and Algorithms	3	L5 (HND)	10200101
10201200	Advanced Programming	3	L5 (HND)	10200101
10303110	Functional Physics	3		
	Department Elective	3		
	University Elective	1		
	Total	**16**		

	Second Year - Spring Semester			
Course No.	**Course Title**	**Cr. hr.**	**Pearson**	**Prerequisite**
10200290	Computing Research Project (Pearson set)	6	L5 (HND)	10200190
10200280	Discrete Math	3	L5 (HND)	10200180
10200230	Business Intelligence	3	L5 (HND)	10200130
	Department Elective	3		
	Total	**15**		

Network Engineering Pathway in CS

	Second Year - Fall Semester			
Course No.	**Course Title**	**Cr. hr.**	**Pearson**	**Prerequisite**
	Faculty Elective	3	L4 (HNC)	
10201211	Transport Network Design	3	L5 (HND)	10200110
10201270	Cloud Computing	3	L5 (HND)	10200110
10303110	Functional Physics	3		
	Department Elective	3		
	University Elective	1		
	Total	**16**		

	Second Year - Spring Semester			
Course No.	**Course Title**	**Cr. hr.**	**Pearson**	**Prerequisite**
10200290	Computing Research Project (Pearson set)	6	L5 (HND)	10200190
10201210	Network Security	3	L5 (HND)	10200110/10200140
10200230	Business Intelligence	3	L5 (HND)	10200130
	Department Elective	3		
	Total	**15**		

For all pathways:

Second Year – Summer Semester			
Course No.	**Course Title**	**Cr. Hr.**	**Prerequisite**
10301102	Soft Skills II	2	
10303201	Leadership Camp	1	
10200271	IT Seminar	2	
	University Elective	1	
	University Elective	1	
	Total	**7**	

Third Year - Fall and Spring Semesters			
Course No.	**Course Title**	**Cr. hr.**	**Prerequisite**
10200399	On-Job Training	18	Obtain at least one certificate
	Total	**18**	

Third Year - Summer Semester			
Course No.	**Course Title**	**Cr. hr.**	**Prerequisite**
10303202	Entrepreneurship Bootcamp	6	
	Total	**6**	

Fourth Year - Fall Semester			
Course No.	**Course Title**	**Cr. hr.**	**Prerequisite**
10201420	Operating Systems	3	
10201421	Advanced Software Engineering	3	10200101
10201401	Database Programing	3	
10303140	English Advanced	3	Placement Test 67-75 or 10301130
	Top-up Elective	3	
	Total	**15**	

Fourth Year - Spring Semester			
Course No.	**Course Title**	**Cr. hr.**	**Prerequisite**
10201400	System Programing	3	
10201460	Compiler Design	3	
10201480	Advanced Computer Architecture	3	
10201471	Electronic commerce	3	-
	Top-up Elective	3	
	Total	**15**	