



Degree and Study Plan

College: Science
 Department: Computer Science¹
 Cohorts: 2017
 Degree: Bachelor of Science
 Major: Computer Science
 Specialization:

Summary of Credits:	
University Requirements (UR)	6
Foundation Program	NC ⁺
Arabic (or Arabic for Non-Arabic Speakers)	3
Contemporary Omani Society (or Omani Contemporary Society – 2cr)	1
Oman & Islamic Civilization or Islamic Culture	2
University Electives (UE)	6
See List A	
College Requirements (CR)	3
See list B	
College Electives (CE)	16
See list C	
Departmental Requirements (DR)	12
See list D	
Departmental Electives (DE)	12
See list E	
Major Requirements (AR)	43
See list F	
Major Electives (AE)	24
See list G	
Specialization Requirements (SR)⁺⁺	0
See list H	
Specialization Electives (SE)⁺⁺	0
See list I	
Minor Requirements (IR)⁺⁺⁺	0
See list J	
Minor Electives (IE) ⁺⁺⁺	0
See list K	
TOTAL	122

⁺ Not credited.

⁺⁺ Minor is optional: minimum total credits to earn a Minor are 18. Courses counting towards an approved Minor may substitute courses listed as Major Electives (List G) but no more than 8 credits counting towards the Major degree (lists C, D, E, F) may count towards a Minor.

For reference contact: **Prof. Khaled Day**

Ext. 2231

HOD: **Prof. Abderezak Touzene**

Date: 12 December 2023

Dean: **Dr. Talal Al-Hosni**

Date:

Date: 11.03.2024

Admission and Registration:



¹ Accredited by the Computing Accreditation Commission of ABET, <http://www.abet.org>



Department of Computer Science - Study Plan for Cohort 2017

	Course Code	Course Title	Cr.	Pre-Requisite/Co-Requisite*	Cat.
Semester 1 Fall	ARAB1001 or ARAB1019	Arabic Arabic for Non-Arabic Speakers	3		UR
	COMP2101	Introduction to Computer Science	4	(FPEL0560 or FPEL0600 or FPEL0601 or FPEL0602 or FPEL0603 or FPEL0604) and (FPCS0101 or FPCS0102)	CE
	LANC2058	Communication in Science	3	FPEL0560 or FPEL0600 or FPEL0601 or FPEL0602 or FPEL0603 or FPEL0604	CR
	MATH2107	Calculus I	4	(FPEL0560 or FPEL0600 or FPEL0601 or FPEL0602 or FPEL0603 or FPEL0604) and (FPMT0105 or FPMT0109)	CE
	SOCY1001 or SOCY1007*	Contemporary Omani Society Omani Contemporary Society (2 Cr)	1		UR
	Total		15		

*For non-Omani citizens only

	Course Code	Course Title	Cr.	Pre-Requisite/Co-Requisite*	Cat.
Semester 2 Spring	COMP2202	Fundamentals of Object Oriented Programming	3	COMP2101	DR
	ECCE3206	Digital Logic Design	3		AR
	MATH2108 or MATH2109	Calculus II	3	MATH2107	AR
	MATH3340	Discrete Mathematics for Computer Science	3	MATH2107 and COMP2101 and LANC2058	AR
		College Elective	4		CE
	Total		16		

	Course Code	Course Title	Cr.	Pre-Requisite/Co-Requisite*	Cat.
Semester 3 Fall	COMP3203	Introduction to Data Structures & Algorithms	3	COMP2202 and MATH3340 and LANC2058	DR
	COMP3501	Computer Organization & Assembly Language	3	COMP2101 and ECCE3206 and LANC2058	AR
	STAT2101	Introduction to Statistics	4	(FPEL0560 or FPEL0600 or FPEL0601 or FPEL0602 or FPEL0603 or FPEL0604) and (FPMT0105 or FPMT0109)	CE
		Major Elective 1	3		AE
		University Elective 1	2		UE
	Total		15		

	Course Code	Course Title	Cr.	Pre-Requisite/Co-Requisite*	Cat.
Semester 4 Spring	COMP3401	Introduction to Software Engineering	4	COMP3203	DR
	COMP3700	Introduction to Web Computing	3	COMP2202 and LANC2058 / COMP3205*	AR
	COMP4201 or COMP3205	Database Systems	3	COMP3203 and LANC2058	AR
	STAT2102	Introduction to Probability	3	STAT2101 / (MATH2108 or MATH2109)*	AR
		Major Elective 2	3		AE
	Total		15		

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	Course Code	Course Title	Cr.	Pre-Requisite/Co-Requisite*	Cat.
Semester 5 Fall	COMP4100	Ethics and Skills for Computing Professionals	2	COMP3401	DR
	COMP4501	Fundamentals of Operating Systems	3	COMP3203 and COMP3501	AR
	HIST1010 or ISLM1010	Oman & Islamic Civilization or Islamic Culture	2		UR
	MATH2202 or MATH2201	Linear Algebra I	3	LANC2058	AR
		Departmental Elective 1	3		DE
		University Elective 2	2		UE
	Total		15		

	Course Code	Course Title	Cr.	Pre-Requisite/Co-Requisite*	Cat.
Semester 6 Spring	COMP4204	Advanced Data Structures and Alg.	3	COMP3203	AR
	COMP4502 or COMP3502	Computer Networks	3	COMP3203	AR
		Departmental Elective 2	3		DE
		Major Elective 3	3		AE
		Major Elective 4	3		AE
	Total		15		

	Course Code	Course Title	Cr.	Pre-Requisite/Co-Requisite*	Cat.
Summer	COMP4445	Summer Training	0	COMP4100	AR
	Total		0		

	Course Code	Course Title	Cr.	Pre-Requisite/Co-Requisite*	Cat.
Semester 7 Fall	COMP4601 or COMP3600	Intelligent Systems	3	(COMP3203 or COMP3603) and LANC2058	AR
	COMP5101	Comparative Programming Languages	3	COMP3203 and COMP3501	AR
		Departmental Elective 3	3		DE
		Major Elective 5	3		AE
		Major Elective 6	3		AE
	Total		15		

	Course Code	Course Title	Cr.	Pre-Requisite/Co-Requisite*	Cat.
Semester 8 Spring	COMP5900	Project in Computer Science	4	COMP4100 + Completion of 90 credits	AR
		Departmental Elective 4	3		DE
		Major Elective 7	3		AE
		Major Elective 8	3		AE
		University Elective 3	2		UE
	Total		15		

Department of Computer Science – Degree Plan for Cohort 2017

Degree Plan : 122 credits			
Course code	Cr	Course Title	Prerequisites (Co-Requisite)
University Requirements: 12 Credits			
ARAB1001 or ARAB1019	3	Arabic Arabic for Non-Arabic Speakers	
HIST1010 or ISLM1010	2	Oman & Islamic Civilization or Islamic Culture	
SOCY1001 or SOCY1007 *	1	Omani Contemporary Society Omani Contemporary Society (2 Cr)	
	6	University Electives	

* For non-Omani citizens only

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LIST A: University Electives (6 Credits)

See SQU Deanship of Admission and Registration website for the list of University Electives

Available at: <https://sis.squ.edu.om/sis/webreg/3s/electiveTimeTable.jsp>

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LIST B: College REQUIRMENTS (3 Credits)

Code	Title	Credits	Pre-Requisite / Co-Requisite*
LANC2058	Communication in Science	3	FPEL0560 or FPEL0600 or FPEL0601 or FPEL0602 or FPEL0603 or FPEL0604
Total		3	

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LIST C: College Electives (16 Credits)

Code	Title	Credits	Pre-Requisite / Co-Requisite*
BIOL2101	General Biology 1	4	FPEL0560 or FPEL0600 or FPEL0601 or FPEL0602 or FPEL0603 or FPEL0604
CHEM2101	General Chemistry 1	4	(FPEL0560 or FPEL0600 or FPEL0601 or FPEL0602 or FPEL0603 or FPEL0604) and (FPMT 0105 or FPMT0109)
COMP2101 [†]	Introduction to Computer Science	4	(FPEL0560 or FPEL0600 or FPEL0601 or FPEL0602 or FPEL0603 or FPEL0604) and (FPCS0101 or FPCS0102)
ERSC2101	Introduction to Geology	4	FPEL0560 or FPEL0600 or FPEL0601 or FPEL0602 or FPEL0603 or FPEL0604
MATH2107 [†]	Calculus I	4	(FPEL0560 or FPEL0600 or FPEL0601 or FPEL0602 or FPEL0603 or FPEL0604) and (FPMT0105 or FPMT0109)
PHYS2101	General Physics I	4	(FPEL0560 or FPEL0600 or FPEL0601 or FPEL0602 or FPEL0603 or FPEL0604) and (FPMT 0105 or FPMT0109)
STAT2101 [†]	Introduction to Statistics	4	(FPE0560 or FPEL0600 or FPEL0601 or FPEL0602 or FPEL0603 or FPEL0604) and (FPMT0105 or PMT0109)

[†] COMP2101, MATH2107, and STAT2101 are key Pre-Requisite courses for Computer Science Major Requirements.
Credits taken in excess of 16 can be counted as Major Electives (List G)

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LIST D: Departmental REQUIREMENTS (12 Credits)

Code	Title	Credits	Pre-Requisite / Co-Requisite*
COMP2202	Fundamentals of Object Oriented Programming	3	COMP2101
COMP3203	Introduction to Data Structures and Algorithms	3	COMP2202 and MATH3340 and LANC2058
COMP3401	Introduction to Software Engineering	4	COMP3203
COMP4100	Ethics and Skills for Computing Professionals	2	COMP3401
Total		12	

LIST E: DEPARTMENTAL ELECTIVES (12 Credits)

Code	Title	Credits	Pre-Requisite / Co-Requisite*
COMP2102	Problem Solving and Programming	3	COMP2101
COMP2105	Introduction to Problem Solving with Visual Basic	3	COMP2101
COMP2206	Introduction to Java	3	COMP2202
COMP3204	Advanced Java Programming	3	COMP2202 and LANC2058
COMP3302	Introduction to Multimedia	3	COMP2202
COMP3601	Bioinformatics Algorithms	3	BIOL2101 and COMP2101
COMP3602	Data Analysis and Visualization with Python	3	COMP2101
COMP3702	Principles of Web Applications	3	COMP3700 and LANC2058
COMP4202	Database Development	3	COMP3205 or COMP4201
COMP4205	Competitive Programming	3	COMP3203
COMP4206	Mobile Applications Development	3	COMP3203
COMP4212	Introduction to Information Retrieval	3	COMP3203
COMP4300	Computer Graphics I	3	COMP3203 and (MATH2202 or MATH2201)
COMP4402	Software Testing	3	COMP3401
COMP4404	Software Project Management (1)	3	COMP3401
COMP4471	Computational Methods	3	COMP2101 and (MATH2108 or MATH2109) and (MATH2202 or MATH2201)
COMP4504	Wireless Networks	3	(COMP3502 or COMP4502)
COMP4506	Systems and Networks Programming	3	COMP4501 and (COMP3502 or COMP4502)
COMP4515	Mobile Networks	3	COMP3502 or COMP4502
COMP4603	Machine Learning	3	(COMP3203 or COMP3603) and (MATH2202 or MATH2201)
COMP4604	Digital Image Processing	3	COMP3600 or COMP4601

COMP4701	Web Application Development	3	COMP3700 and (COMP3205 or COMP4201)
COMP4703	Web Data Mining and Social Networking	3	COMP3700 and (STAT2102 or STAT2103)
COMP5204	Computer Science Special Topics (1)	3	Instructor Consent
COMP5302	Digital Image Processing	3	COMP3203
COMP5400	Software Architecture and Design	3	COMP3401
COMP5402	Requirement Engineering	3	COMP3401
COMP5504	Distributed Systems	3	COMP4506
COMP5506	Wireless Networks and Mobile Computing		COMP4501 and (COMP3502 or COMP4502)
COMP5507	Cryptography and Network Security	3	COMP3203 and (COMP4502 or COMP3502)
COMP5508	Interconnection Networks for Multiprocessor and	3	COMP3502 or COMP4502
COMP5509	Penetration Testing and Ethical Hacking	3	COMP4509 or COMP5507
COMP5511	Computer Forensics	3	COMP4509
COMP5521	Finite Automata & Formal Languages	3	COMP3203
COMP5522	Compiler Construction	3	COMP3501 and COMP5521
COMP5595	Special Topics in Computer Science	3	Instructor Consent
COMP5603 or COMP4605	Computer Vision	3	COMP4603
COMP5605	Mobile Robotics	3	COMP3600 or COMP4601
COMP5701	Web Services	3	COMP3401 and COMP3700
COMP5702	Semantic Web	3	COMP4701
COMP5704	Web Data Mining and Knowledge Discovery	3	(COMP4701 or COMP3702) and (STAT2102 or STAT2103)
Total (minimum)		12	

Credits taken in excess of 12 can be counted as Major Electives (List G)

LIST F: MAJOR REQUIREMENTS (43 CREDITS)

Code	Title	Credits	Pre-Requisite / Co-Requisite*
Computer Science: 31 credits			
COMP4201 or COMP3205	Database Systems	3	COMP3203 and LANC2058
COMP3501	Computer Organization & Assembly Language	3	COMP2101 and ECCE3206 and LANC2058
COMP4502 or COMP3502	Computer Networks	3	COMP3203
COMP4601 or COMP3600	Intelligent Systems	3	(COMP3203 or COMP3603) and LANC2058
COMP3700	Introduction to Web Computing	3	COMP2202 and LANC2058 / (COMP4201 or COMP3205)*
COMP4204	Advanced Data Structures and Algorithms	3	COMP3203
COMP4445	Summer Training	0	COMP4100
COMP4501	Fundamentals of Operating Systems	3	COMP3203 and COMP3501
COMP5101	Comparative Programming Languages	3	COMP3203 and COMP3501
COMP5900	Project in Computer Science	4	COMP4100 + Completion of 90 credits
ECCE3206	Digital Logic Design	3	
Math: 12 credits			
MATH2108 or MATH2109	Calculus II	3	MATH2107
MATH2202 or MATH2201	Linear Algebra I	3	LANC2058
MATH3340	Discrete Mathematics for Computer Science	3	MATH2107 and COMP2101 and LANC2058
STAT2102	Introduction to Probability	3	STAT2101 / (MATH2108 or MATH2109)*
Total		43	

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LIST G: MAJOR ELECTIVES (AR) (24 CREDITS)

Student should take at least 6 credits from other departments in the College of Science.

Student can take at most 2 courses from other colleges (CIVIL5150, ECCE2016, ECCE4227, ECCE4242, ECCE5242 and GEOG4891).

“All College of Science courses not used for required courses (Lists A, B, C, D, E, F, H and I) can be taken as major electives”.

Refer to the Major Electives Page on the College Website:

<https://www.squ.edu.om/science/Academic-Programs/Undergraduate-Programs/Major-Electives>

LISTS J & K: MINOR REQUIRMENTS AND ELECTIVES (18 Credits)

MINORS AVAILABLE TO COMPUTER SCIENCE MAJORS

Refer to the Minor page on the College Website to see the available minors and their requirements:

<https://www.squ.edu.om/science/Academic-Programs/Undergraduate-Programs>

* Students are required to complete 18 Credits in the minor courses to qualify for a minor.

* Courses counting towards an approved Minor may substitute courses listed as Major Electives (List G) but no more than 8 credits counting towards the Major degree (lists C, D, E, F) may count towards a Minor.

* Students should take a minor different from their major.

For reference contact: **Prof. Khaled Day**

Ext. 2231

Approved by Dean of Science: **Dr. Talal Al-Hosni**



Date: 11.03.2024



Office of Admissions & Registration: _____

Confirmed: _____ Date: _____