

## GRADUATION CHECKLIST

To graduate, students must pass all the stated courses in the course menu including the 5 compulsory Professional Skills Certificate Courses. It is the responsibility of the students to ensure that all courses are taken and passed. Students who do not complete any of the course are not eligible to graduate.

NO.	CODE	COURSE	CREDIT EARNED (JKD)	CREDIT COUNT-ED (JKK)	TICK (✓) IF PASSED
<b>COMPUTER SCIENCE COURSES</b>					
<b>CORE COURSES (74 CREDITS)</b>					
1	SECI1013	Discrete Structure	3	3	
2	SECJ1013	Programming Technique I	3	3	
3	SECR1013	Digital Logic	3	3	
4	SECP1513	Technology & Information System	3	3	
5	SECI1113	Computational Mathematics	3	3	
6	SECI2143	Probability & Statistical Data Analysis	3	3	
7	SECJ1023	Programming Technique II	3	3	
8	SECR2033	Computer Organisation and Architecture	3	3	
9	SECD2523	Database	3	3	
10	SECD2613	System Analysis and Design	3	3	
11	SECJ2013	Data Structure and Algorithm	3	3	
12	SECR1213	Network Communications	3	3	
13	SECV2113	Human Computer Interaction	3	3	
14	SECJ2203	Software Engineering	3	3	
15	SECV1223	Web Programming	3	3	
16	SECR2043	Operating Systems	3	3	
17	SECJ2154	Object Oriented Programming	4	4	
18	SECR3032	Computer Networks and Security Project I	2	2	
19	SECJ3203	Theory of Computer Science	3	3	
20	SECR4118	Industrial Training	8	HW	
21	SECR4114	Industrial Training Report	4	4	
22	SECR4134	Computer Networks and Security Project II	4	4	
23	SCSD3761	Technopreneurship Seminar	1	1	
<b>ELECTIVES COURSES (CHOOSE 34 CREDITS)</b>					
24	SECV3104	Applications Development	4	4	
25	SECJ3553	Artificial Intelligence	3	3	
26	SECR2242	Computer Networks	2	3	

27	SECR2941	Computer Networks Lab	1	3	
28	SECR3241	Internetworking Technology	2	4	
29	SECR3941	Internetworking Technology Lab	1	3	
30	SECR3413	Computer Security	3	3	
31	SECR3443	Cryptography	3	3	
32	SECR3223	High Performance & Parallel Computing	3	3	
33	SECR3253	Network Programming	3	3	
34	SECR3263	Wireless Sensor Network	3	3	
35	SECR4283	Network Analysis & Design Simulation	3	3	
36	SECR4443	Penetration Testing	3	3	
37	SECR4453	Network Security	3	3	
38	SCSR4483	Security Management	3	3	
39	SECR4483	Secure Programming	3	3	
40	SECR4493	Computer Forensic	3	3	
41	SECR4973	Special Topics on Computer Network & Security	3	3	
<b>TOTAL CREDIT OF COMPUTER SCIENCE COURSES</b>			<b>108</b>	<b>100</b>	
<b>(a)</b>					
<b>UNIVERSITY GENERAL COURSES</b>					
<b>Kluster 1: Penghayatan Falsafah, Nilai &amp; Sejarah</b>					
<b>(Faculty of Social Sciences and Humanities)</b>					
1	UHIS1022	Falsafah dan Isu Semasa	2	2	
2	UHMS1182	Penghayatan Etika dan Peradaban	2	2	
3	UHLM1012	Malaysia Language for Communication (for International Students only)	2	2	
<b>Kluster 2: Kemahiran Insaniah (Soft Skills)</b>					
1	UHMT1012	Graduate Success Attributes	2	2	
<b>Kluster 3: Perluasan Ilmu</b>					
1	UHIT2302	The Thought of Science and Technology	2	2	
2	UHMS1172	Malaysia Dynamic (for Malaysian Students only)	2	2	
	UHMS1022	Malaysian Studies 3			
<b>Kluster 4: Kokurikulum Pembelajaran Servis</b>					
1	UKQF2xx2	Service Learning Co-curriculum Elective	2	2	
2	UKQT3001	Extracurricular Experiential Learning	1	1	
<b>Kluster 5: Kemahiran Bahasa (Language Skill)</b>					
<b>(Language Academy, Faculty of Social Sciences and Humanities)</b>					
1	UHLB1122	English Communication Skills	2	2	
2	UHLB2122	Academic Communication Skills	2	2	

3	UHLB3132	Professional Communication Skills	2	2	
4	UHLx1112	Foreign Language Elective	2	2	
<b>Kluster 6: Keusahawanan</b>					
1	UBSS1032	Introduction to Entrepreneurship	2	2	
<b>TOTAL CREDIT of UNIVERSITY GENERAL COURSES (c)</b>			23	23	
<b>TOTAL CREDIT TO GRADUATE (a + b + c)</b>			131	123	
<b>OTHER COMPULSORY COURSES</b>					
<b>Professional Skills Certificate (PSC) (UTMSPACE/ School)</b>					
1	GLL 1001	How to Get Your Self Employed			
2	GLL 1029	ISO 9001:2008 Quality Management System Requirement			
3	GLL 1040	Occupational Safety, Health and Environment			
4	GLL 1041	How to Manage Your Personal Finance			
<b>Test of English Communication Skill (TECS) (Language Academy, Faculty of Social Sciences and Humanities)</b>					
1	TECS 1001	Oral Interaction			
2	TECS 1002	Writing			

## COURSE SYNOPSIS

### CORE COURSES

#### **SECI1013 Discrete Structure**

This course introduces students to the principles and applications of discrete structure in the field of computer science. The topics that are covered in this course are set theory, proof techniques, relations, functions, recurrence relations, counting methods, graph theory, trees and finite automata. At the end of the course, the students should be able to use set theory, relations and functions to solve computer science problems, analyse and solve problems using recurrence relations and counting methods, apply graph theory and trees in real world problems and use deterministic finite automata finite state machines to model electronic devices and problems.

#### **SECI1113 Computational Mathematics**

This course is a combination of linear algebra and numerical methods as preparation for computer science student to apply mathematics knowledge in core knowledge of computer science. The first part of this course is an introduction to linear algebra. The topics that are covered in linear algebra are linear equations, linear combinations, linear independence, linear transformation, and vector spaces. The second part of this course covers numerical methods that can be used to solve non-linear equation, linear systems, eigenvalue problems, interpolation, differentiation and integration. At the end of the course, students should be able to apply mathematics knowledge to solve mathematical problems. Implementation of engineering tools such as MATLAB, would enhance student to use simple programming technique for solving mathematical problems.

#### **SECJ1013 Programming Technique I**