

Information Security Engineering Technology

SPECIALIZATION: SSD - Applied Bachelor (AB) -2020 - v1.9

Total Credits Hours = 142 C.H.

Year 1																							
1st Semester						2nd Semester						Summer											
Description (Math and Sciences, Humanities, Engineering Technologyetc.)						Description (Math and Sciences, Humanities, Engineering Technologyetc.)						Description (Math and Sciences, Humanitiesetc.)											
No.	Course	Pre-requisite	L	B	T	CH	CR	No.	Course	Pre-requisite	L	B	T	CH	CR	No.	Course	Pre-requisite	L	B	T	CH	CR
MATH1001	Precalculus (W.B.)*	-	3	0	2	5	3	ICT1201	Object Oriented Programming in Java	ICT1011	2	2	1	6	3	ICT1301	Fundamentals of Information Security	ICT1202	2	2	0	4	3
ICT1011	Introduction to Programming & Problem Solving (W.B.)	-	2	2	2	6	3	ICT1202	Intro to Computer Networks	ICT1011	2	2	1	6	3	ENGL1012	Academic English 2	ENGL1011	3	0	2	5	3
ENGL1001	English Skills	-	3	0	2	5	0	MATH1010	Calculus I (W.B.)	MATH1001	2	2	2	6	3								
HUM1011	Islamic Culture (W.B.)	-	3	0	2	5	3	ENGL1011	Academic English 1	-	3	0	2	5	3								
HUM1012	Emirates Society & Culture (W.B.)	-	3	0	2	5	3	ENGL1011	Intro to Computer Electronics	PHYS1011, PHYS1012	2	2	2	6	3								
PHYS1011	Physics I (W.B.)	co-req: MATH1001	3	0	2	5	3																
PHYS1012	Physics I Lab	co-req: PHYS1011	0	2	0	2	1																
Total			17	4	#	33	13	Total			11	8	8	29	15	Total			5	2	2	9	6

Year 2																							
1st Semester						2nd Semester						Summer											
Description						Description						Description											
No.	Course	Pre-requisite	L	B	T	CH	CR	No.	Course	Pre-requisite	L	B	T	CH	CR	No.	Course	Pre-requisite	L	B	T	CH	CR
ICT2101	Discrete Mathematics	MATH1010	3	0	2	5	3	ICT2201	Data Structure and Algorithms	ICT1201, ICT2101	2	2	1	5	3	SSD2301	Secure Web Applications Development - OCT I	SSD2201	0	5	0	5	1
NCS2101	Network Security	ICT1202	2	2	0	4	3	ICT2202	Operating Systems Security	ICT2103, ICT1301	2	2	0	4	3	SSD2302	Secure Software design & implementation - OCT I	ICT2203	0	5	0	5	1
ICT2102	Intro to Database Systems	ICT1201	2	2	0	4	3	SSD2201	Web Programming and Security	ICT1301, ICT2102	2	2	0	4	3	SSD2303	Web Application Security - OCT I	SSD2201	0	5	0	5	1
ENGL2011	Public Speaking (Blended L.)	ENGL1012	1	0	2	3	1	NCS2201	Ethical Hacking and Pen. Testing	NCS2101	2	2	0	4	3	SSD2304	Ethical Hacking and Pen. Testing - OCT I	NCS2201	0	5	0	5	1
ENGL2012	Literature Review (Blended L.)	ENGL1012	1	0	2	3	1	ISE12201	Applied Cryptography	ICT1301	2	2	0	4	3	SSD2305	Secure Windows/Linux OS - OCT I	ICT2202	0	5	0	5	1
ENGL2013	Report Writing (Blended L.)	ENGL1012	1	0	2	3	1	ICT2203	Introduction to Software Security	ICT1201, ICT1301	2	2	0	4	3	SSD2306	Client/Server Security Admin - OCT I	ICT2202	0	5	0	5	1
ICT2103	Logic Design & Computer Organization	ENGL1011	2	2	1	5	3																
Total			12	6	9	27	15	Total			12	12	1	25	18	Total			0	30	0	30	6

Year 3																							
1st Semester						2nd Semester						Summer											
Description						Description						Description											
No.	Course	Pre-requisite	L	B	T	CH	CR	No.	Course	Pre-requisite	L	B	T	CH	CR	No.	Course	Pre-requisite	L	B	T	CH	CR
SSD3101	Object Oriented Analysis and Design	ICT2203	2	2	0	4	3	SSD3201	Malware Analysis/Tools and Techniques	SSD2304, SSD2201	2	2	0	4	3	SSD3301	Software Verification and Validation - OCT II	SSD3101	0	5	0	5	1
SSD3102	Mobile Programming and Security	ICT1201, ICT1301	2	2	0	4	3	SSD3202	Multi-Language Secure Coding and Testing	SSD3101	2	2	0	4	3	SSD3302	Database Programming and Security - OCT II	SSD3203	0	5	0	5	1
SSD3104	Embedded Systems Secure Devlp	ICT1201, ICT2103	2	2	0	4	3	SSD3203	Secure Database Development	ICT2102	2	2	0	4	3	SSD3303	Software Vulnerability Assessment - OCT II	SSD3202	0	5	0	5	1
NCS3104	Cloud Security	NCS2101	2	2	1	4	3	MATH12012	Probability and statistics	MATH1001	3	0	2	5	3	SSD3304	Practical Requirements Engineering - OCT II	ICT2203	0	5	0	5	1
ISE13101	InfoSec Project Management (Blended L.)	ICT1301	2	0	2	2	2	NCS3203	Fundamentals of Digital Forensics	NCS2101	2	2	0	4	3	SSD3305	Secure Mobile Applications Development - OCT II	SSD3102	0	5	0	5	1
Total			10	8	1	18	14	Total			11	8	2	21	15	Total			0	30	0	30	6

Year 4																							
1st Semester						2nd Semester						Summer											
Description						Description						Description											
No.	Course	Pre-requisite	L	B	T	CH	CR	No.	Course	Pre-requisite	L	B	T	CH	CR	No.	Course	Pre-requisite	L	B	T	CH	CR
HUM2011	Psychology	ENGL1012	3	0	2	5	3	ISE14201	Incident Handling and Response	ISE14101	2	2	0	4	3	SSD4301	On Job Training (Internship)						
HUM1013	Arabic Communication Skills (W.B.)	None	3	0	2	5	3	HUM3011	Creativity, Innovation and Entrepreneurship	ENGL2013 or completion of 60 credit	3	0	0	3	3								
ISE14101	Risk and Security Management	ICT1301	2	0	0	2	2	ISE14202	Ethics, Law & Policy in Cyberspace (Blended L.)	ICT1301	2	0	0	2	2								
SSD4101	Graduation Project I	See Notes below	1	4	0	5	3	SSD4201	Graduation Project II	SSD4101	1	4	0	5	3								
SSDxxxx	Technical Elective I	See Major SSD Table					3	SSDxxxx	Technical Elective II	See Major SSD Table					3								
Total			9	4	#	17	14	Total			8	6	0	14	14	Total			0	0	1	0	6

NOTES:
 SSDxxxx | Software Security Elective to be taken from ISET advanced courses after consultation with the advisor
 Pre-requisite for Calculus I (MATH1010): placement exam > 70%, or precalculus MATH1001
 * MATH1001 - Number of credits (3) is not counted for Graduation requirements
 Students can select their specialization at end of 2nd Semester of 2nd year
 Pre-requisites for SSD4101 are: Completion of 100 credits and cGPA ≥ 2.0
 Pre-requisites for SSD4301: Completion of at least 110 credits

Major SSD-xxx Technical Electives (6 credits)				
Code	Course Title	PREREQ	L,B,T	CR
ISE14001	Homeland Security	NCS2201	2,2,0	3
ISE14002	Advanced Cryptography	ISE12201	2,2,0	3
ISE14003	Security Governance & Compliance	ICT1301	2,2,0	3
ISE14004	Security Architectures & Models	ICT1301	2,2,0	3
ISE14005	Privacy in a networked world	ICT1301	2,2,0	3
ISE14006	BlockChain Technology & Security	ISE12201	2,2,0	3
NCS4001	Hardware based Security	ICT1301	2,2,0	3
NCS4004	Advanced Network Security	NCS2101	2,2,0	3

Major SSD-xxx Technical Electives (6 credits)				
Code	Course Title	PREREQ	L,B,T	CR
SSD4001	Data Artificial Intelligence	SSD3101	2,2,0	3
SSD4002	Reverse Engineering	SSD3201	2,2,0	3
SSD4003	Software Security Trends	SSD3202	2,2,0	3
SSD4004	Human Computer Int.Design	SSD3305	2,2,0	3
SSD4005	Advanced Web Security	SSD2201	2,2,0	3
SSD4006	Critical SW Sec.Cont.&Strndrs	SSD3101	2,2,0	3
SSD4007	Advanced Mobile Appl.Develop.	SSD3102	2,2,0	3