

Kingdom of Saudi Arabia Ministry of Higher Education King Abdulaziz University

GRADUATE CATALOG

Faculty of Computing and Information Technology

Academic Year

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Faculty Academic Administration

Dean
Vice Dean
Vice Dean – Girls Campus
Vice Dean of Graduate Studies and Research
Vice Dean of Development

Department of Information Systems

Head of Department Supervisor – Girls Campus Dr. Abdulla S. Almalaise Dr. Muhammad A. Al-Hashimi

Dr. Abdulrahman H. Altalhi

Dr. Lamia F. Daghestani

Dr. Iyad A. Katib

Dr. Naif R. Al-Johani Dr. Sanaa A. Sharaf

Dr. Fouad G. Bajaber

Department of Information Technology

Head of Department Supervisor – Girls Campus

Department of Computer Science

Head of Department Supervisor – Girls Campus Dr. Aiiad A. Albeshri

Dr. Maysoon F. Abolkhair

Dr. Mai A. Fadel

P.O. Box: 80221 Jeddah 21589 Kingdom of Saudi Arabia Tel. (02) 695-1603 Fax (02) 695-1605 <u>fcit.dean@kau.edu.sa</u> <u>http://computing.kau.edu</u>

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About the Faculty

Initially a part of the Mathematics Department, the computer group was transformed into the Department of Computer Science under the Faculty of Sciences at the beginning of academic year 1405/06 A.H (1985/86) offering a classic 4-year computer science program. For many years the Computer Science Department contributed to the preparation of computing specialists producing many generations of technical professionals who actively participated in disseminating e-culture in the society. Department graduates played an important role in national economic development in both government and private sector through involvement in major information technology projects.

Twenty years later, a Royal Decree in 1425 A.H (late 2004) founded the Faculty of Computing and Information Technology, or FCIT for short. A building located in the north side of the university was renovated to enable the college to launch in the academic year 2006/07. The new college started through the old Department of Computer Science as its first department. Soon two new departments followed, and FCIT started admitting students to its new programs including a modernized computer science program. In the academic year 1432/33 (2011/12), the girls moved to a new building. Now the college offers its programs through three departments operating in both boys and girls campuses. They are:

- Department of Computer Science
- Department of Information Technology
- Department of Information Systems

FCIT provides modern laboratories, smart class rooms, and other facilities. Students and faculty are encouraged to check the FCIT Safety Guide, and the FCIT Labs and Facilities Guide for their campus. Students are exposed to a variety of activities both academic and extracurricular. The college works to attract talented staff both national and international to participate in advancing education and research in the college.

With new well-equipped buildings, programs such as international collaboration with highly-cited researchers, and prestigious academic accreditation for its bachelor programs, FCIT is well on the way to become a regionally prominent school of computing.

FCIT Strategy

Vision

To become a leading regional institution, offering educational, research and consultation programs in computing and information technology.

Mission

FCIT is an academic institute of higher learning specialized in computing, that strives to deliver high-quality educational, research and consultation programs.

Goals

To serve the development plans of the nation by preparing qualified professional human resources who fulfill society's needs for computing specialists. Additionally, to contribute to development of human knowledge in the field of Informatics, and to adopt cutting-edge research programs that effectively contribute to serving society through consultations and solutions that address domestic technology problems.

Student Activity

FCIT offers a range of extra-curricular activities through its own student competitions, clubs and activity committees. Students can participate in activities related to computing, Islamic awareness, culture and arts, sports, and social activities of their choice. FCIT encourages its students to participate in various student events and competitions inside and outside the university.

Alumni

FCIT, through its Graduates Affairs Unit, works to keep in touch with its former students so that its current students can highly benefit from their experiences and achievements. Alumni can help the college review and assess educational objectives for its programs offering valuable insights from their own experiences.

Faculty Development

The college has a dedicated faculty development program with a focused mission and adequate resources. A two- year development plan was formalized to approve the master degree, and another three- year plan to approve the Ph. D. degree. While development efforts focus primarily on faculty members, they do also include supporting staff such as lab instructors and administrators who are involved in academic operations. Development activities are expected to cover teaching and learning, research skills, and professional improvement.

Graduate Programs and Degrees

The faculty offers two programs; master and Ph. D. programs leading to degrees as follows:

Program	Awarded Degree
Computer Science	Master of Science in Computer Science Ph. D. in Computer Science
Information Systems	Master of Science in Information Systems Ph. D. in Information Systems
Information Technology	Master of Science in Information Technology

Objectives of Graduate Studies

Graduate Studies program aims to¹:

- 1. Promote research and publication of computing and information technologies studies.
- 2. Contribute to the enrichment of human knowledge in all fields through specialized studies and research in order to make new scientific and applied contributions and create innovative discoveries.
- 3. Provide opportunities for graduate students to pursue their graduate studies locally.
- 4. Develop qualified scientific and professional human resources in the field of computing and information technology.
- 5. Encourage qualified scientists to keep pace with the rapid developments in computer science and information technology in order to direct their research towards the solution of problems in Saudi society.
- 6. Continue with the improvement of undergraduate programs in order to interface efficiently with graduate studies/programs.

Outline of Masters and Ph. D. Programs

The Department concerned has to prepare the proposal of the new program according to the six points mentioned in Article 8, taking the following into consideration²:

- 1. To identify and point out the major and main courses and minor fields of the new program.
- 2. To identify and pinpoint the academic requirements of the Degree, courses of the program, number of Credits approved for each course, the distribution of courses into obligatory and elective courses, and the dissertation or the research project in both Arabic and English.
- 3. The program should include at least, two academic units which aim to enable students to acquire the methods of scientific research and to use its techniques and tools.
- 4. The dissertation for (a master's degree) should not exceed ten credits (units).
- 5. The weight of dissertation for (Ph.D. Degree) by course work and dissertation should not exceed 12 credits (units), whilst the weight of dissertation for (Ph.D. De-

¹Web site: <u>http://graduatestudies.kau.edu.sa/content.aspx?Site_ID=306&lng=EN&cid=3248</u>

² Web site: <u>http://graduatestudies.kau.edu.sa/content.aspx?Site_ID=306&lng=EN&cid=1523</u>

gree) by dissertation and some courses should not exceed 30 credits, but not less than 20.

- 6. To itemize each course in the program in both Arabic and English.
- 7. To assign a symbol and a number for each course in the program in both Arabic and English, according to the system carried out in all graduate studies courses, which has been approved by Deanship of Graduate Studies Council (DGSC).
- 8. After the Department Council's approval, the proposal of the new program is submitted to the College Council which submits it to the Deanship of Graduate Studies Council after approving it.
- 9. The proposal of the new program is to be presented through a form (Application for establishing a graduate study program) which is available on the website of DGSC. The form contains all information needed to prepare the new program.
- 10. The department should fulfill a comparative study between the new program and other similar programs at several universities, to benefit from positives and avoid negatives, and to point out how the new program is outstanding compared with other similar programs in Saudi universities.
- 11. Before presenting the new program to the Deanship of Graduate Studies, and according to the decision of Deanship of Graduate Studies Council, the Department has to send the new program to some institutes or experts inside the Kingdom or abroad for further study and examination, so as to get recommendation for approval. After that the program is to be submitted to the Deanship of Graduate Studies Council, together with the external report attached to the approval Application. In this regard, there must be a good coordination with the Vice-Presidency for Graduate Studies and Scientific Research about the matter of fees (if any) for the assessment procedure, and this should be done before any step in contacting external institutes or experts.

Admission and Registration

The University Board determines the number of students to be admitted each year for the graduate studies as per the recommendations of the Deanship of Graduate Studies Council, and suggestions of Department and College Councils³.

For Admission to the Graduate Studies, the following general requirements should be satisfied:

- 1. The applicant must be a Saudi national or must have an official scholarship to the Graduate Studies (for non-Saudis).
- 2. The applicant must have a university degree from a Saudi university or from another recognized university.
- 3. He/she must have a record of good behavior and be medically fit.
- 4. Recommendation letters should be submitted from two of his/her former professors; a no-objection letter from his/her employer is required, if the applicant is willing.
- 5. Applicants for doctoral programs must enroll on a full-time basis.

³ Web site: <u>http://graduatestudies.kau.edu.sa/content.aspx?Site_ID=306&lng=EN&cid=1523</u>

6. The basis in Ph.D. programs is that the student should be a full-time student. However, the University Board can decide exception from this requirement whenever it is inevitable.

The Board of each university can add any other general requirements as necessary.

Article (15)⁴: Master Degree

Admission to a master's degree program requires a minimum overall undergraduate performance of 'very good' (B). However, the Deanship of Graduate Studies Council can waive this condition for 'upper good (C+). Also, the Deanship of Graduate Studies Council can waive this condition for Good (C) as per recommendation of the Department Council and the support of the College Council in some programs which are nominated and identified by the University Board, given that the graduate major GPA is not less than 'very good' (B).

The Deanship of Graduate Studies Council can add other requirements as per the recommendations of the Department Council and the support of the College Council.

Article (16)⁵: Doctoral Degree

Admission to a Doctoral degree program requires a minimum overall performance of at least 'very good' (B) in the master's degree program if this degree is from a university with a letter-grading system. The Deanship of Graduate Studies Council may add other necessary admission requirements as per the recommendation of the Department Council and the support of the College Council.

Admission Requirements

- 1) The Applicant's age doesn't exceed (35) years for Ph. D., and (30) years for Masters.
- 2) The Applicant must have a university degree from any recognized university with a minimum overall performance of 'very good' (B).
- 3) If your First language is not English, you will need to reach a suitable standard in an approved test of English to enter a graduate program. The required test scores are as follows:

Please note that language certificates should not be more than two years old.

- 4) He must have a certificate of good Conduct and must be medically fit.
- 5) Recommendation letters should be submitted from two of his/her former professors.
- 6) He must not have been dismissed from any university in the kingdom.
- 7) Certificates must be endorsed by Saudi embassy in the country where the student gets his degree.

Required Documents

Recommendation letters should be submitted from two of his/her former professors.

⁴ Web site (Article no 14): <u>http://graduatestudies.kau.edu.sa/content.aspx?Site_ID=306&lng=EN&cid=1525</u> ⁵ Web site (Article no 14): <u>http://graduatestudies.kau.edu.sa/content.aspx?Site_ID=306&lng=EN&cid=1525</u>

Scholarship Privilege⁶

- 1. A monthly bursary according to the university regular rules.
- 2. A preparation allowance when coming for the first time according to the university regular rules, as illustrated in the web site (6).
- 3. The candidate will enjoy free health care.
- 4. Providing an accommodation and facilities.
- 5. Subsidized meals can be provided for the candidate.
- 6. A total sum of SR 4,000 allowance for printing the thesis (for Ph. D.) and SR 3000 (for Master).
- 7. An allowance for shipping books (when graduated) (6).
- 8. Providing the candidate with a two way ticket annually.

Tasks and Duties of Graduate scholarship student⁷

Graduate scholarship students are expected to fulfill their research obligations to the best of their knowledge, training, and ability; to carry out their responsibilities and perform their duties in accordance with all relevant KAU rules and regulations. They should devote a sufficient amount of time and energy towards achieving their degree.

Applying for Admission⁸

International students must fill out the online application. They should read the instructions, admission requirements, documents and transcripts, deadlines and more for program choices before filling out the application. More detailed information is available on this website: <u>http://dgsscholarship.kau.edu.sa</u> . If you cannot find the information students need online, please feel free to contact us at <u>dgs.scholarship@kau.edu.sa</u>.

⁶ The web site of Deanship of Graduate Studies:

http://graduatestudies.kau.edu.sa/Content.aspx?Site_ID=306&lng=EN&cid=60563

⁷ The web site of Deanship of Graduate Studies:

http://graduatestudies.kau.edu.sa/Content.aspx?Site_ID=306&lng=EN&cid=60563

⁸ The web site of Deanship of Graduate Studies:

http://graduatestudies.kau.edu.sa/Content.aspx?Site_ID=306&lng=EN&cid=60563

About the Vice-Deanship of Graduate Studies and Scientific Research

The vision, mission, and objectives of the Vice-Deanship will be introduced as follows:

Vision

To obtain distinguished professional skills and capabilities in the field of advanced theories and applied technology of computer science, information systems, information technology, scientific researches, and access to the global academic accreditation.

Mission

To provide the departments of the Faculty with vocational training for graduates; to prepare specialists in the field of technology research through their deanship in the stages of graduate studies, lectures and workshops to contribute to the advancement of society; and to keep abreast of global developments in the technical field.

Objectives

- 1. Providing students with knowledge about the nature of Computing and Information Technology Sciences.
- 2. Developing technology and technical skills among graduate students at the Faculty of Computing and Information Technology.
- 3. Supporting the development of academic study plans in the post-graduate college.
- 4. Acquainting the workers in the field of computer science and engineering with modern trends in the field of new knowledge and latest technology.
- 5. Strengthening scientific and cultural ties with the corresponding departments in universities, and with local, regional and global bodies.
- 6. Providing consultancy in the field of computing and information technology for all sectors of society.
- 7. Research collaboration and technical preparation for the graduates of various faculties of the University.
- 8. Forming distinguished research groups to support various academic areas, which contribute to solving some of the societal problems.



The leftmost digit indicates the level of the course while the middle digit indicates the topic area. The rightmost digit indicates the sequence of the course within the topic area. The course code of the department is added to designate its courses as follows:

Department	Course Code
Computer Science	CS
Information Technology	IT
Information Systems	IS

Computer Science Department

About the Department

The Department of Computer Science (CS) was established in 1985 to advance research, knowledge, and innovation in computing. It was inaugurated again in 1427 A.H. (2006) as a part of the faculty with a more specialized role that spans the range from theoretical algorithmic foundations to scientifically-grounded application areas in computing systems, network computing, programming systems, intelligent systems, computer graphics, high performance computing, and software engineering. The department offers a modern accredited bachelor's degree program, a mature, second-generation research-based master's program, and a Ph.D. program. These programs are supported by experienced faculty members and state-of-the-art specialized labs, including robotics and brain-computer interface labs.

Vision

To be recognized nationally and internationally as a strong research and teaching center in the field of computer science.

Mission

- To provide superior educational experiences in areas related to computer science at both graduate and graduate levels.
- To provide distinguished research in theoretical and applied computing.
- To address and serve the needs of the community.

Objectives

- To produce highly qualified CS specialists and researchers.
- To effectively participate in the scientific proceedings that takes place in the Kingdom of Saudi Arabia and abroad.
- To constantly update the department's educational programs in order to keep pace with international standards.
- To keep in touch with local community in order to find out their technical needs and difficulties.

Program Courses

It is worth noting that course codes consist of two parts: the first two letters (CS) represent the department code, and the second part consists of 3 digits.

Master Degree

To obtain a master's degree, a student must satisfy the following:

- 1. Have a minimum Grade Point Average (GPA) of 3.75.
- 2. Complete 34 credits according to the following tables:

Requirements	Credits
4 Obligatory Courses (General Courses)	13
6 Elective courses	18
Thesis	9
Total Credit Hours	40

Obligatory Courses (General Courses)					
CREDIT HOURS			COURSE NAME		Code/
CR.	LAB.	Тн.	COUKSE NAME		NO
3	-	3	DESIGN AND ANALYSIS OF ALGORITHMS	DESIGN AND ANALYSIS OF ALGORITHMS	
3	-	3	SOFTWARE DESIGN AND IMPLEMENTATION		CS 141
3	_	3	DISTRIBUTED OPERATING SYSTEMS		CS 652
1	-	1	SEMINAR	Seminar	
3	-	3	MATHEMATICAL TOOLS		матн 610
3	-	3	STOCHASTIC PROCESSES		STAT 612
3	-	3	SIMULATION & MODELING		STAT 642
13	-	13	TOTAL CREDIT HOURS		

Elective Courses (Students select 3 Courses)					
CREDIT HOURS		URS	Course Name	Code/	
Cr.	Lab.	Тн.		NO	
3	-	3	Advanced Programming Language	CS 601	
3	-	3	Advanced Computer Graphics	CS 602	
3	-	3	Advanced Theory of Computation	CS 621	
3	-	3	Advanced Computer Architecture	CS 631	
3	-	3	ADVANCED COMPUTER NETWORKS	CS 642	
3	-	3	FAULT TOLERANCE	CS 643	
3	-	3	ADVANCED DATABASE	CS 651	
3	-	3	Advanced Artificial Intelligence	CS 661	
3	-	3	Expert System	CS 662	
3	-	3	PATTERN RECOGNITION	CS 663	
3	-	3	COMPUTER VISION	CS 664	
3	-	3	INTERNET TECHNOLOGY	CS 665	
3	-	3	SELECTED TOPICS	CS 681	
18	- 18 TOTAL CREDIT HOURS				

			Thesis	
CREDIT HOURS			COURSE NAME	Code/
CR.	LAB.	Тн.	COOKSE WARE	NO
9	-	9	THESIS	CS 699

Common Degree Plan

All students admitted to computer science department take the following courses in their planning.

	CREDIT HOURS		JRS				TER
CR. HRS.	Тот	Lab	Тн	COURSE NAME		COURSE CODE	SEMEST
	3	-	3	DESIGN AND ANALYSIS OF ALGORI	THMS	CS 611	
	3	-	3	SOFTWARE DESIGN AND IMPLEMENT	NTATION	CS 141	Т
10 UNITS	3	-	3	DISTRIBUTED OPERATING SYST	ΓEMS	CS 652	FIRS
	1	-	1	Seminar		CS 691	
	3	-	3		SE	матн 610	
	3	-	3		COUR	STAT 612	
12 UNITS	3	-	3		ONE	STAT 642	QN
12 01113		-		-	ш	CS-6XX	SECC
				-	LECTIV	CS-6XX	
				-	Ш	CS-6XX	
	9	-	9	THESIS		CS 699	
19 UNITE	3	-	3		Ð	CS-6XX	IRD
18 UNITS	3	-	3		LECTIV	CS-6XX	Тн
	3	-	3		Щ	CS-6XX	
9 Units	9	-	9	THESIS		CS 699	Fourth
40 UNITS		TOTAL CREDIT HOURS					

Courses Description

COURS E CODE	COURSE TITLE	CREDITS	Prerequisite
CS 601	Advanced Programming Tools	3 Units	CS 204
Course Description	Study of desirable features and sp data types, control structures, dat generation tools. Fourth generation	becification of programming languages by inv a flow, and run time behavior of several lang on languages.	vestigation of uages. Program

Course Code	Course Title	Credits	Prerequisite
CS 602	Advanced Computer Graphics	3 Units	CS 406
Course Description	Overview of display technology. gramming interactive devices. Sco procedurally defined objects, volu rithms, smooth shading and color	Graphic software, high-level languages for grap ene presentation: parametric surfaces, stochastic imetric objects. Image rending: scaling and trac ing.	phics, pro- c modeling, ping algo-

Course Code	Course Title	Credits	Prerequisite
CS 611	Advanced Analysis of Algorithms	3 Units	CS 312
Course Description	Design, analysis and complexity of algovide and concurrent backtracking, greed completeness.	prithms. General techniques for solving p ly, etc.) Sorting algorithms, graph algorit	roblems (di- hms, and NP

Course Code	Course Title	Credits	Prerequisite
CS 621	Advanced Theory of Computation	3 Units	CS 323
Course Description	Chomsky hierarchy of granular. Finite s Push-down automata and linear bounded	tate acceptors, transducers and regular ex l automata. Turing machine and halting j	xpressions. problem.

Course Code	Course Title	Credits	Prerequisite
CS 631	Advanced Computer Architecture	3 Units	CS 232, CS 333
Course Description	Computer system design problems such tic and non-arithmetic processing, cont ic examples of various solution to com- computer organization	h as processor memory switch. Or rol, addressing and input output. puter system design problems, an	rganization, arithme- Comparison of specif- d , selected topics of

Course Code	Course Title	Credits	Prerequisite
CS 642	Advanced Topics in Computer Network	3 Units	CS 441
Course Description	Design and analysis problem relating to capplied to different networks topologies. I trol techniques.	omputer networks. Ca Network design algori	pacity assignment techniques ithms, routing, and flow con-

Course Code	Course Title	Credits	Prerequisite
CS 642	Advanced Topics in Computer Network	3 Units	CS 441
Course Description	Design and analysis problem rela niques applied to different netwo flow control techniques	ating to computer networks. rks topologies. Network desi	Capacity assignment tech- gn algorithms, routing, and

Course Code	Course Title	Credits	Prerequisite
CS 643	Fault Tolerant Computing	3 Units	CS 441
Course Description	Faults in digital circuits, fault detection and ery. Design for testability, self-checkir tem level fault-diagnosis, and fault tole	location, system reconfiguration or r ng circuits, fault tolerant interconne erant software.	epair, system recov- ection networks, sys-

Course Code	Course Title	Credits	Prerequisite
CS 651	Advanced Database System	3 Units	CS 451
Course Description	Different models of database (relation, optimization, Distributed database system)	, etc.) Functional dependency, Quer tem. DB security. Object Oriented l	y systems, Query Database.

Course Code	Course Title	Credits	Prerequisite
CS 652	Software Engineering	3 Units	CS 453
Course Description	Principles and techniques for methodical c specification, program paradigms, mod procedures, proof of program correctne	construction of quality software. Softule specification techniques, testi ess. Emphasis on term project.	tware requirement ng and validation

Course Code	Course Title	Credits	Prerequisite
CS 661	Advanced Artificial Intelligence	3 Units	CS 461
Course Description	Study of topics related to AI includ sentation and management, intelligen processing, natural language proces knowledge acquisition and learning	ing goal-directed problem solvi nt search strategies and AI appli- sing and understanding. Machir systems. Intelligent Agent.	ng, knowledge repre- cations such as image the translation, games,

Course Code	Course Title	Credits	Prerequisite
CS 662	Expert Systems	3 Units	CS 461
Course Description	Expert system architecture. Knowled tems: production rules, pattern recog	dge Engineering. Inference mecha gnition. Automatic theorem provin	nism for expert sys- g, fuzzy logic.

Course Code	Course Title	Credits	Prerequisite
CS 663	Pattern Recognition	3 Units	CS 461
Course Description	An introduction of the problem, potent parative presentation of different methors similarity measure, and statistical class decision, Applications include image a	ial and method of pattern recognit odologies and practical examples ification. Minimax procedure, ma nd character recognition.	tion through a com- . Feature extraction, aximum likelihood

Course Code	Course Title	Credits	Prerequisite
CS 664	Computer Vision	3 Units	consent of instructor
Course Description	Presenting the theoretical fundamenta puter vision systems. Computer vision cessing techniques. Mathematical and as contour, size, texture, color and oth	ls of hardware and software conce n application, environment, and real statistical methods for visual attri her physical properties.	pts underlying com- quirement. Image pro- bute recognition such

Course Code	Course Title	Credits	Prerequisite
CS 665	Internet Technologies	3 Units	consent of instruc- tor
Course Description	Internet Technologies introduction, Scr. Multimedia: audio, video, speech proce CGI, XML.	ipting, Control Structures, Functio ssing, Security, SQL and ADO, A	ons, Arrays, Objects, ctive Server Pages,

Course Code	Course Title	Credits	Prerequisite
CS 681	Reading and Special Problems	3 Units	consent of instruc- tor
Course Description	Discussion of topics by a member of g fields such as distributed database cessing, translation systems,etc.	graduate faculty related to new con systems, parallel processing, mul	cepts in the computer timedia, speech pro-

Course Code	Course Title	Credits	Prerequisite
CS 691	Seminar	3 Units	consent of instructor
Course Description	Preparation for a solid background rela	ited to the research issued by a	a faculty member.

Course Code	Course Title	Credits	Prerequisite
CS 692	Thesis	3 Units	consent of instructor
Course Description	Preparation for thesis and total credit he	ours awarded for writing the m	aster's thesis.

Course Code	Course Title	Credits	Prerequisite
MATH 610	Mathematical Tools	3 Units	consent of instructor
Course Description	Vector spaces: Subspaces, Linear indemations: Matrix "representations, simil subspaces, inner product spaces, Gram vectors, diagonalization, quadratic forms	ependence. Basis and dim larity, change of bases. O -Schmidt orthogonalization s, positive definite matrices	nension. Linear Transfor- rthogonality:" Orthogonal n Eigen-values and eigen-

Course Code	Course Title	Credits	Prerequisite	
STAT 612	Stochastic Process	3 Units	consent of instructor	
Course Description	Markov chains: transition matrix. Dete tion of chains and states of chains. Fir es: Poisson process, birth-death proces rov's forward and backward differentia ing processes. Stationary process. Gen	ermination of n-step transitiest passage time. Simple rand ss and applications to queue al equations and their solution eral random walk.	on probabilities. Classifica- lom walk. Markov process- s. Polya process. Kolmogo- on in simple cases. Branch-	

Course Code	Course Title	Credits	Prerequisite
STAT 642	Modeling and Simulation	3 Units	consent of instructor
Course Description	- Generating Uniform random variable Methods for non-uniform random varia	es. Methods for non-uniform bles. Testing random numbe	random variables. General rs, and Normal variables

Ph. D. Degree

To obtain a doctoral degree, a student must satisfy the following:

- 1. Have a minimum Grade Point Average (GPA) of 3.75 in his master.
- 2. Complete 38 credits according to the following tables:

Requirements	Credits
4 Obligatory Courses (General Courses)	12
2 Elective courses for each track	6
Thesis	20
Total Credit Hours	38

	Obligatory Courses					
CREDIT HOURS		URS	COURSE NAME	Code/		
Cr.	LAB.	Тн.	COURSE NAME	NO		
3	2	2	ADVANCED TOPICS IN NETWORKING	CS-701		
3	2	2	SOFTWARE ARCHITECTURE AND DESIGN	CS-702		
3	2	2	Advanced Database Systems	CS-703		
3	2	2	Advanced Computer Architecture	CS 704		
20	-	-	THESIS	CS 799		
32	8	8	TOTAL CREDIT HOURS			

Elective Courses (Students select two courses)				
CREDIT HOURS		URS	Counter Nave	Code/
Cr.	LAB.	Тн.	COUKSE NAME	NO
3	2	2	Advanced algorithms	CS-705
3	2	2	EXPERIMENTAL DESIGN	CS-706
3	2	2	OBJECT-ORIENTED DATABASE SYSTEMS	CS-720
3	2	2	DISTRIBUTED DATABASES SYSTEMS	CS-721
3	2	2	COMPUTER VISION	CS-730
3	2	2	ADVANCED IMAGE PROCESSING	CS-731
3	2	2	VIRTUAL REALITY	CS-732
3	2	2	SECURE COMPUTER SYSTEMS	CS-740
3	2	2	APPLIED CRYPTOGRAPHY	CS-741
3	2	2	NETWORK SECURITY	CS-742
3	2	2	MACHINE LEARNING	CS-750
3	2	2	INTRODUCTION TO COGNITIVE SCIENCES	CS-751
3	2	2	COMPUTATIONAL PERCEPTION	CS-752
3	2	2	COMMUNICATION NETWORKS EVALUATION	CS-760
3	2	2	NETWORKED APPLICATIONS AND SERVICES	CS-761
3	2	2	BROADBAND NETWORKING SYSTEMS	CS-762
3	2	2	LARGE – SCALE SOFTWARE DESIGN	CS-770
3	2	2	SOFTWARE TESTING, AND MAINTENANCE	CS-771
3	2	2	MODELING OF COMPUTING SYSTEMS	CS-772
3	2	2	BIOINFORMATIC-1	CS-780
3	2	2	BIOINFORMATIC-2	CS-782
6	6 4 4 TOTAL CREDIT HOURS (SELECT TWO COURSE)) COURSE)

	Thesis					
CREDIT HOURS		URS	COURSE NAME	Code/		
Cr.	Lab.	Тн.	COURSE INAME	NO		
20	-	-	THESIS	CS 799		

Common Degree Plan

All students admitted to computer science department take the following courses in their planning.

CP HPS	CRE	CREDIT HOURS		COURSE NAME	Course	STER
CK. IIKS.	Тот	Lab	Тн	COURSE MAME	CODE	SEMES
	3	2	2	ADVANCED TOPICS IN NETWORKING	CS-701	
9 Units	3	2	2	SOFTWARE ARCHITECTURE AND DESIGN	CS-702	1
	3	2	2	Advanced Computer Architecture	CS 704	
	3	2	2	Advanced Database Systems	CS-703	
9 Units	3	2	2	ELECTIVE (1)	CS 7XX	2
	3	2	2	Elective (2)	CS 7XX	
5 Units	20	-	-	Thesis	CS 799	3
5 Units	20	-	-	THESIS	CS 799	4
5 Units	20	-	-	THESIS	CS 799	5
5 Units	20	-	-	Thesis	CS 799	6
38 UNITS		TOTAL CREDIT HOURS				

Courses Description

Course	Code	Course Title	Credits	Prerequisite
CS-701		Advanced topics in networking	3	-
The purpose of this course is to help stud and broadband communications issues as course introduces advanced concepts of n as new technologies for TCP/IP, MPLS, M protocols. In addition, advanced topics su agement issues will be introduced in terms ing performance analysis.		of this course is to help stud d communications issues as v uces advanced concepts of m ologies for TCP/IP, MPLS, Mo addition, advanced topics su es will be introduced in terms ace analysis.	ents be up to date with the new network well as traffic characteristics and QOS pro- odern computer and telecommunication obile IP, and Next Generation Internet: and ch as Internetworking architectures and of user mobility, service continuity, and t	ks technologies ovisioning. This networks such rchitecture and mobility man- he correspond-

Course	Code	purse Title	redits	rerequisite
CS-702		Software Architecture and Design		
Course Description	odeling and de chitecture. Ob atterns. Desigr propriate use liability, reusa re definition l udies. Introduc	esign of software at the architectural level. Architect ject-oriented design and analysis. Iterative develop by contract. Component based design. Product f of metrics in design. Designing for qualities such bility, etc. Analysis and evaluation of software arch anguages. Basics of software evolution, reengineer ction to distributed system software.	cural styles. Basics of oment and unified p amilies. Measureme as performance, sa itectures. Introductioning, and reverse eng	f model-driven rocess. Design nt theory and afety, security, on to architec- gineering. Case

Course	Code	Course Title	Credits	Prerequisite
CS-703		Advanced Database Systems	3	_
Course Description	Current and techniques fo and optimizat to access spat	emerging issues in advanced database systems ar r various DB topics are studied. Topics include OOD tion techniques. Properties and specialized multidin ial and temporal data. Querying unstructured and se	e introduced. The s BMS, and ORDBMS. mensional indexing emi structured data.	tate-of-the-art Deductive DB, methods used

Course Code		Course Title	Credits	Prerequisite
CS-704		Advanced Computer Architecture	3	-
Course Description	This course architecture Energy Effic Parallel me tiprocessor Structured Systems, Ch	helps students to be up to date with new e as Coarse-Grained Adaptable Architecture cient Computing, Brain Architecture, new mo mories. In addition such topics as programn and multicore systems are covered. Shared-Memory Communication, simultaneousters, Grids and interconnects will be introduced.	research trends es, Quantum Archito odels of computat nability and reliat	in computer ectures, Ultra ion, and oility of mul- Dependable

Course	Code	Course Title	Credits	Prerequisite
CS-705		Advanced algorithms	3	-
Course Description	This course l learned in th sign, analysis Geometric, P plementation	builds on the Design and Analysis of Algorithms co e Design and Analysis of Algorithms course. The m and optimization for more advance problem areas. arallel, Distributed and evolutionary computing wi of the algorithms will also be done using a suitable p	urse and will extend ain focus will be on In particular design a ll be discussed in th programming enviro	d the concepts algorithm de- and analysis of nis course. Im- onment.

Course Code		Course Title	Credits	Prerequisite
CS-706		Experimental Design	3	-
Course Description	This course p science. Topic acterization, f tion models, pothesis testi	rovides an integrated treatment to the models and p es covered include scientific evaluation methods app orecasting of performance and quality metrics of sy design of experiments, interpretation and present ng, and statistical analyses of data.	practices of experime blied to computing, v stems, uses of analyt ation of experiment	ental computer vorkload char- tic and simula- cal results, hy-

Course	Code	Course Title	Credits	Prerequisite
CS-720		Object-Oriented Database Systems	3	-
Course Description	The objective database desi ment. The con Basic concept some exposur	of this course is to give a thorough understanding ign, and a new generation of applications that are urse emphasizes the object-oriented modeling appr is, research papers, prototypes and approaches will re to commercial implementations.	of the advances in o a challenge for data oach to support suc be discussed. The c	data modeling, abase manage- h applications. ourse includes

Course	Code	Course Title	Credits	Prerequisite
(CS-721	Distributed Database Systems	3	-
Course Description	This course s and then go o distributed d partitioning o ponent of a re- tion and optin rency control centralized da tion of transa ity and durab the four funda- lel database s parallel DB sy data mining.	tarts by presenting an architectural model for dist on to study four fundamental topics of DDBS. The f atabases. It examines the different issues and algo of relations in a DDBS. The second topic is concerne- elational DDBS. The three major tasks of query will b nization. The third topic deals with transaction man . Here, course will focus on how lock-based and tim atabase systems can be enhanced for a DDBS. The las ctions. It discuss a number of distributed reliability p ility of distributed transactions that execute over a r amental areas of distributed database systems, the o ystems and how it has emerged from the DDBS area restems. Finally, the course shows how parallel proce	ributed database sy irst topic, deals with rithms for horizonta ed with the query pro- be looked: decompose agement and in part nestamp-based technologies topic involves the protocols that mainta- number of databases course will cover the and discuss the basis	stems (DDBS) in the design of al and vertical cocessing com- sition, localiza- ticular concur- niques used in reliable execu- ain the atomic- . In addition to e area of paral- ic principles of d to the area of

Course	Code	Course Title	Credits	Prerequisite
CS-730		Computer Vision	3	-
Course Description	Principles, teo Includes In addition t used to create Graphics).	chniques, and practice in data, information, multiv visualization methods, data structures o mathematical/physical/perceptual principles an e, represent, display, and animate models of 3D shap	rariate, and scientific , examples, d modeling/renderi pes and their propert	e visualization. and tools. ng techniques ties (Computer

Course	Code	Course Title	Credits	Prerequisite
CS-731		Advanced Image Processing	3	-
Course Description	A study of methods for enhancing, analyzing, interpreting, and and three-dimensional data obtained from a variety of medical vanced techniques in realistic image synthesis based on the pl surface reflectance, distribution ray tracing, volume rendering ing (Advance Image Synthesis) including multi-resolution, com ity, and computational geometry techniques in engineering, s applications.		visualizing informat mage modalities. In a sics of light. Anti-alia adiosity, and image- ression, collision, mo entific, business, or	ion from two- addition to ad- asing, textures, ·based render- rphing, visibil- entertainment

Course Code		Course Title	Credits	Prerequisite
CS-732		Virtual Reality	3	-
Course Description	An introducti gy, software trends in the a	on to virtual reality and virtual environments. Issue design, 3D human-computer interaction, and appli- area of Virtual Reality.	s covered will includ cations for VR. In ad	e VR technolo- ldition to New

Course Code		Course Title	Credits	Prerequisite
CS-740		Secure Computer Systems	3	-
Course Description	This course explores problems such as authentication and acces dled at the system level. It gives in depth introduction to the im address these problems and security policies that can be suppo issues in distributed systems will be covered as well.		control that are trac plementations of me ted by them. System	ditionally han- chanisms that level security

Course Code		Course Title	Credits	Prerequisite
CS-741		Applied Cryptography	3	-
Course Description	This course p early systems cryptosystem will also stud tosystems so design of syst	rovides an intensive overview of the field of crypto and the theoretic foundations of modern day cryp s are designed, and to match cryptosystems to the y basic cryptanalysis and will be presented with r that they better understand the dangers that lurk ems that rely on cryptography.	graphy, a historical p tosystems. Students needs of an applica eal life breaches of in cryptosystem des	perspective on will learn how ation. Students common cryp- sign and in the

Course Code		Course Title	Credits	Prerequisite
CS-742		Network Security	3	-
This course p them. Topics service (DoS) tion; worm at ing the source advanced tec		rovides an in-depth study of network attack techniq include firewalls and virtual private networks; netw and distributed denial-of-service (DDoS) attacks; and virus propagation; tracing the source of attacks; e or destination of network traffic; secure routing iniques for reacting to network attacks.	ues and methods to work intrusion detec DoS and DDoS detec traffic analysis; tech protocols; protocol s	defend against ction; denial of ction and reac- niques for hid- scrubbing; and

Course Code		Course Title	Credits	Prerequisite
CS-750		Machine Learning	3	-
Course Description	This course gives thorough grounding in the methods, theo needed to do research and applications in machine learning. T from machine learning, classical statistics, data mining, Bayesia theory.		ory, mathematics an he topics of the cou an statistics, and fro	nd algorithms rse are drawn m information

Course Code		Course Title	Credits	Prerequisite
CS-751		Introduction to Cognitive Science	3	-
This course d mental repres question in co human intelli possible? Thi chology cours		describes different methodologies and theoretical of sentation, the nature of expertise, and consciousn ognitive science research: What kind of representa igence or to develop computer intelligence? Is a is course is truly interdisciplinary and is not like ses.	contributions to que less. It focuses on a tion must be postula scientific understar conventional philo	stions such as a fundamental ated to explain ading of mind sophy or psy-

Course	Code	Course Title	Credits	Prerequisite
CS-752		Computational Perception	3	-
Course Description	This course t ditory modal complex envi- lems and issu erties of thos and computa provide very The course w to ecological	eaches advanced aspects of perception and scene a ities, concentrating on those aspects that allow us ironments. In this course, student will learn how to les in perception and scene analysis, how to extract e abstract ideas, and finally how to convert these tional algorithms. In the process, student will cov different perspectives on problems and properties of ill consider both classical and modern theories that context and behavioral function. Readings will be ethology, computational theory, psychophysics and	inalysis in both the and animals to beha reason scientifical the essential compu- into explicit mathen yer a wide range of of natural perception t relate biological se drawn from systen	visual and au- ave in natural, ly about prob- utational prop- natical models literature that n. ensory systems ns neurophysi- gy

Course Code		Course Title	Credits	Prerequisite
CS-760		Communication Networks Evaluation	3	-
Course Description	Methods for evaluating the performance of communication ne mathematical analysis, computer simulation, and measuremen protocols, multiplexing and multiple-access, switching, routing. works, packet networks, Broadcasting network, satellite and ter		vorks with emphasis Error, flow and cong elected case studies estrial radio network	s on modeling, gestion control on Access net- ss.

Course Code		Course Title	Credits	Prerequisite
CS-761		Networked Applications and Services	3	-
Course Description	End-to-end functional building blocks and their use in adaptive cluding multimedia: coding, compression, security, directory se sonal communications and Cellular systems.		and non-adaptive ap vices Underlying pri	oplications, in- nciples of per-

Course Code		Course Title	Credits	Prerequisite
CS-762		Broadband Networking Systems	3	-
Course Description	Focus on the SONTET, fibe band techno 802.15, and 8	e data link layer and its relationship to layers be r channel; media including wireless, satellite, xDSL logies. In Wireless & Multimedia Networks: Stan 02.16, etc. QoS, wireless & multimedia networks new	elow and above. Gig cable. In addition to dards: 802.11, 802 v trends and applicat	gabit Ethernet, o latest broad- .11e, 802.11n, tions.

Course	Code	Course Title	Credits	Prerequisite
CS	5-770	Large scale Software design	3	-
Course Description	Designing connector data distri distributio ware archi chitectures oriented an	architectures: architectural conception, styles and a types, connector dimensions, event-based data d bution connectors, client-server-based data distrik n connectors. Deployment and mobility: software a tecture and mobility. Applied architectures and sty s, architectures for network-based applications, de rchitectures and web services, agent-based architect	architectural pattern istribution connector oution connectors, P architecture and dep les: distributed and ecentralized architec cures.	is. Connectors: ors, grid-based 2P-based data oloyment, soft- networked ar- ctures, service-

Course Code		Course Title	Credits	Prerequisite
CS-771		Software Testing, and Maintenance	3	-
Course Description	Concepts and clude softwar matic and ma designing and change; and v	techniques for testing and modifying software in re testing at the unit, module, subsystem, and syste nual techniques for generating test data; testing con implementing software to increase maintainability alidating software changes.	evolving environme em levels; developer ncurrent and distrib and reuse; evaluatir	nts. Topics in- • testing; auto- uted software; ng software for

Course Code		Course Title	Credits	Prerequisite
CS-772		Modeling of Computing Systems	3	-
Course Description	This course w a focus on ap classical logic logic, model o software, har theorem prov domains. We promising res ful techniques	vill cover the techniques for modeling and formally a plications in software, hardware, and security. Stud- c, induction and recursion, program semantics, rew checking, and abstraction. We will examine how th dware, and security protocols. Students will learn h ving and model checking tools, and will work in gr will discuss the limitations of current techniques search directions including building more useful sys s.	analyzing computing ents will learn the fu vriting, reactive syst- ese methods can be now to use various to oups to apply the to and systems and we stems and developing	; systems, with ndamentals of ems, temporal used to verify ools, including ools to various e will examine g more power-

Course Code		Course Title	Credits	Prerequisite			
CS-780		Bioinformatic-1	3	-			
Course Description	Introduction to biological databases and bioinformatics software. Sequence comparison algorithms and tools. Sequence analysis and molecular phylogenetics. Biomolecular 3D structure and modeling. Bioinformatics theory, tools, and techniques						

Course Code		Course Title	Credits	Prerequisite			
CS-781		Bioinformatic-2	3	-			
Course Description	This course studies computational biology problems along both algorithmic and statistical approaches. It covers different methods for multiple sequence alignment, genome sequencing, comparative analysis of genome information, gene prediction, finding signals in DNA, phylogenetic analysis, protein structure prediction. Other topics covered include microarray gene expression analysis and computational proteomics.						

Course Code		Course Title	Credits	Prerequisite
CS-799		Thesis	20	-
Course Description	A thesis/dissertation is a requirement for all Doctor of Philosophy (Ph.D.) studen considered as primary evidence of the student's capacity for research, independent t and of his ability to write professionally in the language of instruction.			

Department Faculty

Boys Campus - Sulimania

Prof. Fadi F. Fouz, Professor, Ph.D. in Computer Science, Parallel Microprocessor, University of Sheffield, UK, 1981.

Prof. Fathi A. Isa, Professor, Ph.D. in Computer Science, Software Engineering, Al-Azhar University, Egypt, 1989.

Prof. Kamal M. Jambi, Professor, Ph.D. in Computer Science, Artificial Intelligence, Illinois institute of Technology, USA, 1991.

Prof. Osama A. Abolnaja, Professor, Ph.D. in Computer Science, Systems Programming and Fault-tolerance, University of Wisconsin, USA, 1997.

Dr. Ameen Y. Noaman, Associate Professor, Ph.D. in Computer Science, Data Warehousing, University of Manitoba, CA, 1999.

Dr. Anas M. Fattouh, Associate Professor, Ph.D. in Computer Science, Automatic Control, Automatic Laboratory of Grenoble, France, 2000.

Dr. Maher A. Khemakhem, Associate Professor, Ph.D. in Digital Electronics and Computer Science, Arabic OCR & Distributed Systems, Université Paris Sud, France, 1987.

Dr. Aiiad A. Albeshri, Assistant Professor, Ph.D. in Information Technology, Security in Cloud Computing, Queensland University of Technology, Australia, 2013.

Dr. Abdulla A. Basuhail, Assistant Professor, Ph.D. in Computer Science, Digital Image Processing (Wavelet Transform), Florida Institute of Technology, USA, 1998.

Dr. Ahmad S. Alzahrani, Assistant Professor, Ph.D. in Computer Science, Computer Networks, University of Bradford, UK, 2009.

Dr. Imtiaz H. Khan, Assistant Professor, Ph.D. in Computer Science, Artificial Intelligence, University of Aberdeen, UK, 2009.

Dr. Iyad A. Katib, Assistant Professor, Ph.D. in Computer Science, Telecommunications and Computer Networking, University of Missouri-Kansas City, USA, 2011.

Dr. Jonathan Cazalas, Assistant Professor, Ph.D. in Computer Science, Mobile Computing, University of Central Florida, USA, 2012.

Dr. Khaled O. Thabit, Assistant Professor, Ph.D. in Computer Science, Memory Management, Rice University, USA, 1981.

Dr. Muhammad A. Al-Hashimi, Assistant Professor, Ph.D. in Computer Science, Fault-Tolerant Architectures, Texas A&M University, USA, 2000.

Dr. Muhammad A. Ameen, Assistant Professor, Ph.D. in Computer Science, Artificial intelligence and Image Analysis, George Washington University, USA, 2002.

Dr. Muhammad Y. Dahab, Assistant Professor, Ph.D. in Computer Science, Text Mining, Cairo University, Egypt, 2007.
Dr. Riaz A. Shaikh, Assistant Professor, Ph.D. in Computer Engineering, Computer and Network Security, Kyung Hee University, South Korea, 2009.

Dr. Vijey Thayananthan, Assistant Professor, Ph.D. in Engineering, Communication Systems, University of Lancaster, UK, 1998.

Dr. Wadee Alhalabi, Assistant Professor, Ph.D. in Computer Science, Machine Learning, University of Miami, USA, 2008.

Dr. Wajdi H. Al-Jedaibi, Assistant Professor, Ph.D. in Computer Engineering, Software Engineering and Concurrent Systems, George Mason University, USA, 2001.

Girls Campus - Sulimania

Dr. Arwa Y. Al-Aama, Associate Professor, Ph.D. in Computer Science, Multimedia Systems, George Washington University, USA, 2003.

Dr. Hana A. Alnuaim, Associate Professor, Ph.D. in Computer Science, Multimedia Systems, George Washington University, USA, 2000.

Dr. Laila N. A. Mohamed, Associate Professor, Ph.D. in Computer Engineering, Computer Networks, Anglia Polytechnic University, UK, 1997.

Dr. Lamyaa F. Hassan, Associate Professor, Ph.D. in Engineering, Planning Computer Networks, Cairo University, Egypt, 1999.

Dr. Omaima O. Bamasak, Associate Professor, Ph.D. in Computer Science, Electronic Information Security, University of Manchester, UK, 2006.

Dr. Areej A. A. Malibari, Assistant Professor, Ph.D. in Computer Science, Artificial Intelligence and E-Commerce, University of Essex, UK, 2010.

Dr. Arwa A. Jamjoom, Assistant Professor, Ph.D. in Computer Science, Data Warehousing (Healthcare), University of Surrey, UK, 2011.

Dr. Etimad A. Fadel, Assistant Professor, Ph.D. in Computer Science, Distributed Systems, De Montfort, UK, 2006.

Dr. Ghada A. H. Aldabbagh, Assistant Professor, Ph.D. in Computer Science, Communications and Information Systems, University College London, UK, 2011.

Dr. Lamiaa A. A. Elrefaei, Assistant Professor, Ph.D. in Electrical Engineering, Signal Processing, Benha University, Egypt, 2008.

Dr. Lamya Daghestani, Assistant Professor Ph.D. in Computer Science, Computer Graphics, University of Huddersfield, UK, 2012.

Dr. Mai A. Fadel, Assistant Professor, Ph.D. in Computer Science, Software Engineering, Exeter University, UK, 2007.

Dr. Manal A. A. Abdulla, Assistant Professor, Ph.D. in Computer and System Engineering, Computer Networks, Ain Shams University, Egypt, 2002.

Dr. Manar S. Salamah, Assistant Professor, Ph.D. in Computer Science, Software Engineering, University of Leicester, UK, 2012.

Dr. Nadine T. K. Akkari, Assistant Professor, Ph.D. in Computer Science, Computer Networks, National Superior School of Telecommunications (<u>École Nationale Supérieure Des</u> <u>Télécommunications</u>), France, 2006.

Dr. Sahar S. Shabana, Assistant Professor, Ph.D. in Computer Science, Graphics and Computer Games, George Masson, USA, 2010.

Dr. Sanaa A. Sharaf, Assistant Professor, Ph.D. in Computer Science, Grid Computing, University of Leeds, UK, 2012.

Dr. Zainab A. E. Mahmoud, Assistant Professor, Ph.D. in Electrical and Computer Engineering, Interactive Computer Graphics, Alexandria University, Egypt, 1991

Information Systems Department

About the Department

The Department of Information Systems (IS) was established as one of three departments of FCIT in the year 2006 with an objective to produce specialists in the integration of Information Systems solutions with business operations to serve organizations with their requirements of information technologies, enable them to accomplish their goals and support them in the process of decision-making. The philosophy of IS Department is based upon providing students with a strong theoretical foundation in information systems complemented with an understanding of business principles and practices which are then enhanced through practical application focused on identifying and solving real-world business problems. The primary strength of the IS Department is found in the diversity and academic depth of faculty who are committed to providing robust instruction, quality student support, and opportunities for majors. The department offers quality bachelor's and master's study programs based on sound scientific foundation applicable to real-life business environments, while a Ph.D. program is in the pipeline.

Vision

To be recognized as the preeminent information systems department in the region, known for its scientific and practical innovations, and commitment in delivering high-quality education and market-responsive research and services.

Mission

To provide students with superior, cutting-edge educational experiences, and essential practical skills required to excel in all areas related to information systems.

Objectives

• Equipping the students of the Dept. with the required skills to analyze, design, utilize, develop, and deploy information systems in all government and private sectors taking into account the social and ethical aspects of the application of technology in these sectors.

- Giving the students of the Dept. the ability to work individually and in teams (team spirit) to plan, design, document, implement, test, configure, and maintain the various information systems.
- Providing the students of the Dept. with the ability to analyze customers' requirements, and the ability to develop application programs to implement these requirements.
- Providing the students of the Dept. with the capacity to lead, manage and plan information systems, beginning with the identification of needs and gathering requirements, and ending with the implementation of integrated solutions for information systems.
- Providing the students of the Dept. with the ability to evaluate, criticize the different trends in the field of information systems and technologies, and the ability to select the best techniques to accomplish the ambitious goals.
- Working in the fields of business services, developing and designing new systems with advanced technologies.

Program Courses

It is worth noting that course codes consist of two parts: the first two letters (CP) represent the faculty code, and the second two letters represent the department code (IS).

Master Degree

To obtain a master's degree, all students must satisfy the following:

- 1. Have a minimum Grade Point Average (GPA) of 3.75.
- 2. Complete 34 credits according to the following tables:

Requirements	Credits
7 Obligatory Courses (General Courses)	20
2 Elective courses	6
Thesis	8
Total Credit Hours	34

	Obligatory Courses (General Courses)				
Cf	redit Ho	URS	COURSE NAME	Code/	
Cr.	LAB.	Тн.	COURSE NAME	NO	
3	-	3	Information Technology Infrastructure	CPIS601	
3	-	3	Information Systems Development	CPIS602	
3	-	3	Enterprise Models	CPIS603	
3	-	3	Emerging Technologies in Business	CPIS604	
3	-	3	Total Quality Management	CPIS605	
3	-	3	Information Systems Strategies	CPIS606	
2	-	2	Research Methods CPIS694		
20	-	20	TOTAL CREDIT HOURS		

	Elective Courses (Students select two courses from this list)				
Cf	REDIT HO	URS	Coudse Name	Code/	
CR.	LAB.	Тн.	GOURSE IVAMIE	NO	
3	-	3	Advanced Decision Support Systems 1	CPIS620	
3	-	3	Advanced Decision Support Systems 2	CPIS621	
3	-	3	Advanced Information Systems Security 1	CPIS630	
3	-	3	Advanced Information Systems Security 2	CPIS631	
3	-	3	Advanced E-Systems Development 1	CPIS640	
3	-	3	Advanced E-Systems Development 2	CPIS641	
3	-	3	Selected Topics in Information Systems 1	CPIS696	
3	-	3	Selected Topics in Information Systems 2	CPIS697	
6	-	6	TOTAL CREDIT HOURS		

			Thesis	
Cf	REDIT HO	URS	Course Name	Code/
Cr.	LAB.	Тн.	COURSE IMME	NO
8	-	8	THESIS	CPIS 699

Common Degree Plan

All students admitted to information systems department take the following courses in their planning.

	CREDIT HOURS		URS				rer
CR. HRS.	Тот	Lab	Тн	Course Name	COURSE NAME		SEMES
	3	-	3	Information Technology In	Information Technology Infrastructure		
9 Units	3	-	3	Information Systems De	velopment	CPIS602	⁷ IRST
	3	-	3	Enterprise Mode	els	CPIS603	H
	3	-	3	Emerging Technologies i	Emerging Technologies in Business		
11 Units	3	-	3	Total Quality Management		CPIS605	DNC
	3	-	3	Information Systems Strategies		CPIS606	SECC
	2	-	2	Research Methods		CPIS694	
							الثا ذ،
7 Units	4		4	Thesis		CPIS 699	ß
	3	-	3	-	Elective	CPIS 6XX	THII
7 Units	4	-	4	Thesis		CS 699	JRTH
	3	-	3		Elective	CPIS 6XX	Fot
34 UNITS	TOTAL CREDIT HOURS						

Courses Description

CODE	COURSE TITLE	CREDITS	PREREQUISITE
CPIS601	INFORMATION TECHNOLOGY INFRA- STRUCTURE	3 Units	
COURSE DESCRIPTION	This course covers the telecommunication video. The concepts, models, architectures, implementation, and management of digital ter computing, and grid computing. Storage center design and implementation. Develop ware, software, networks, and data) to serv petitive and technological environment. Net application integration, XML. Web Services	ons fundamentals including data, v, protocols, standards, and security networks. Server architectures, set area networks and network attach pment of an integrated technical are re organizational needs in a rapidly twork, data and application architects.	oice, image, and 7 for the design, rver farms, clus- ed storage, Data chitecture (hard- 7 changing com- tures. Enterprise

CPIS602	INFORMATION SYSTEM DEVELOPMENT	3 Units
COURSE DESCRIPTION	This course covers the systems development life cyc formation systems planning and project identification and structuring, process modeling, conceptual and logic tion and data management, design of the human compu- tion and operation, system maintenance, and change man Students will use current methods and tools such as oriented analysis and design, prototyping, and visual dev	cle; analysis and design techniques; in- and selection, requirements collection al data modeling, database implementa- tarer interface (HCI) System implementa- nagement implications of systems. rapid application development, object- velopment.

CODE	COURSE TITLE	CREDITS	PREREQUISITE
CPIS603	ENTERPRISE MODELS	3 Units	
COURSE DESCRIPTION	This course provides a process-oriented view of the organization; processes as vehi and transforming the organization; process analysis, design toring; processes as a means of achieving compliance; i resource planning (ERP), supply chain management (So agement (CRM) systems. The process continuum: from Impact on work practices. The role of systems in transglobal perspectives.	organization and its recles for achieving stragn, implementation, compact on work; the r CM), and customer recomplication organization	elationships with ategic objectives ontrol and moni- ole of enterprise elationship man- ctured processes. ns and markets;

CODE	COURSE TITLE	CREDITS	PREREQUISITE
CPIS604	Emerging Technologies in Business	3 Units	
COURSE DESCRIPTION	This course addresses emerging technologies them and the effect of international, political, soc them. Topics covered in the course include accura to improve them, international perspectives on em tional and customer trends, and forecasting metho opinion, trend analysis and scenario construction.	s, how they evolve, h cial, economic and cult acy of past technology nerging technologies, f dologies including mor	ow to identify cural factors on forecasts, how uture organiza- nitoring, expert

CODE	COURSE TITLE	CREDITS	PREREQUISITE
CPIS605	TOTAL QUALITY MANAGEMENT	3 Units	
COURSE DESCRIPTION	This course discusses managing projects of processes related to initiating, planning, execut Project integration, scope, time, cost, quality c cost estimation. Assigning work to programme control. Managing the organizational change p with user teams, training, and documentation. T The use of sourcing and external procurement;	within an organizational contexing, controlling, reporting, and control, and risk management. S r and other teams. Monitoring process. Identifying project char the change management role of contracts and managing partner	at, including the closing a project. oftware size and rogress. Version npions, working the IS specialist. relationships.

CODE	COURSE TITLE	CREDITS	PREREQUISITE
CPIS606	INFORMATION SYSTEMS STRATEGIES	3 UNITS	
COURSE DESCRIPTION	This course discusses the top managem petitive strategy, core competencies, and i implementation of policies and plans to ach tems that support the operational, administ tion, its business units, and individual emp mation systems function in organizations, in of effectively controlling the use of well-operation experimenting with selected emerging techn	ent, strategic perspective for nformation systems. The de nieve organizational goals. De rative, and strategic needs o oloyees. Approaches to mana ncluding examination of the established information technologies. Role of the CIO.	aligning com- velopment and efining the sys- f the organiza- ging the infor- dual challenges nologies, while

CODE	COURSE TITLE	CREDITS	Prerequisite
CPIS694	RESEARCH METHODS	2 UNITS	-
COURSE DESCRIPTION	This course includes subjects in differ include the basics of scientific research ar cation of research problem and how to se the Provisions of the hypotheses and vari- erature, theory and previous studies relate the Provisions of the samples and tools f analyze the data. With addressing the patter cal and descriptive research and experimen- tion of the samples in scientific research, mentation of information sources and how	rent ways and methods of scient and the steps and procedures from lect and evaluate the research ables and the importance of re- ed with the research methodol for data collection And statistic erns of research such as search ental and qualitative with a de tools and means of data collect to write a research report.	entific research om the identifi- plan, including esearch and lit- logy, including cal methods to ing the histori- tailed explana- ction and docu-

CODE	COURSE TITLE	CREDITS	PREREQUISITE
CPIS620	ADVANCED DECISION SUPPORT SYSTEMS 1	3 Units	CPIS606
COURSE DESCRIPTION	This course discusses the theoretical aspect of analysis for the models as well as related applicati making and help.	f the process of decisi on software packages i	on-making and in the decision-

CODE	COURSE TITLE	CREDITS	PREREQUISITE
CPIS621	ADVANCED DECISION SUPPORT SYSTEMS 2	3 Units	CPIS620
COURSE DESCRIPTION	This course is based on a number of seminars the field of Decision-Support Systems. * It is required that the student should have after getting an approval to be published in one nals or conferences.	s that address the latest d published at least one p of the peer-reviewed we	evelopments in aper or at least ell-known jour-

CODE	COURSE TITLE	CREDITS	PREREQUISITE
CPIS 630	Advanced Information Systems Security 1	3 Units	CPIS 606
COURSE DESCRIPTION	This course focuses on the basics and challenges of the importance of its protection to be as strategy asset of	modern information the organization.	on security and

CODE	COURSE TITLE	CREDITS	PREREQUISITE
CPIS 631	Advanced Information Systems Security 2	3 Units	CPIS630
COURSE DESCRIPTION	This course is based on a number of seminars that addre the field of Information Systems Security. It is required that the student should have published at la getting an approval to be published in one of the peer-revi conferences.	ess the latest de east one paper dewed well-kno	evelopments in or at least after wn journals or

CODE	COURSE TITLE	CREDITS	PREREQUISITE
CPIS 640	Advanced E-Systems Development 1	3 Units	CPIS 606
COURSE DESCRIPTION	This course discusses the advanced electronic sy gredients and techniques used in modern structure a modern and electronic commerce strategies.	ystems in terms of comp as well as the most impo	ponents and in- ortant factors of

CODE	COURSE TITLE	CREDITS	Prerequisite
CPIS 641	ADVANCED E-SYSTEMS DEVELOPMENT 2	3 UNITS	CPIS 640
ESCRIPTION	This course is based on a number of semina the field of Electronic Systems.	rs that address the latest de	evelopments in
COURSE DE	* It is required that the student should have p getting an approval to be published in one of t conferences.	ublished at least one paper he peer-reviewed well-kno	or at least after wn journals or

CODE	COURSE TITLE	CREDITS	PREREQUISITE
CPIS 696	SELECTED TOPICS 1	3 Units	CPIS 606
COURSE DESCRIPTION	 This course emphasizes on the recent mation Systems. The course has to be appr An student should choose one of the follow Management Information Systems Geographic Information Systems Library Information Systems Medical Information Systems 	technologies and trends in any roved of by the Department before ving topic:	field of Infor- being opened.

CODE	COURSE TITLE	CREDITS	PREREQUISITE
CPIS 697	SELECTED TOPICS 2	3 Units	CPIT 696
COURSE DESCRIPTION	This course emphasizes on the advanced reco mation Systems fields in any of the selected topic * It is required that the student should have pu getting an approval to be published in one of th conferences.	ent technologies and trend in CPIS696. Iblished at least one paper ie peer-reviewed well-kno	ls in any Infor- or at least after wn journals or

CODE	COURSE TITLE	CREDITS	PREREQUISITE
CPIS 699	THESIS	8 UNITS	
COURSE DESCRIPTION	The student chooses subject in coord partment. The student should prepare a proved forms, and discuss it in the preser * It is required that the student should getting an approval to be published in a conferences before the defense.	dination with the academic supervi proposal for the thesis in accordan- ice of the academic committee. I have published at least one paper one of the peer-reviewed well-kno	isor in the De- ce with the ap- or at least after wn journals or

Department Faculty

Boys Campus - Sulimania

Prof. Khaled A. Fakeeh, Professor, Ph.D. in Computing and Information Systems, Simulation of Disaster Recovery, George Washington University, USA, 1993.

Prof. Shihab A. Gamaleldin, Professor, Ph.D. in Computer Science, Software Engineering, University of Colorado, USA, 1989.

Prof. Syed F. Haider, Professor, Ph.D. in Computer Science, Parallel Programming, Canterbury University, UK, 1998.

Prof. Syed H. Hasan, Professor, Ph.D. in Computer Science, Information Security, JMI, India, 1994.

Dr. Abdulla S. Almalaise, Associate Professor, Ph.D. in Computer Science, Software Engineering, George Washington University, USA, 2003.

Dr. Ayman G. Fayoumi, Associate Professor, Ph.D. in Computer Engineering, Computer Networks, Colorado State University, USA, 2005.

Dr. Daniyal M. Alghazzawi, Associate Professor, Ph.D. in Computer Science, Intelligent Information Security, University of Kansas, USA, 2007.

Dr. Hussain F. Sindi, Associate Professor, Ph.D. in Computer Science, Computer Networks, George Washington University, USA, 1991.

Dr. Ibrahim A. Albidewi, Associate Professor, Ph.D. in Computer Engineering, Computer Vision, University of Swansea, UK, 1993.

Dr. Jibrael Alameen Abosamra, Associate Professor, Ph.D. in Electronics and Communication Engineering, Pattern Recognition, Cairo University, Egypt, 1992.

Dr. Mostafa A. Saleh, Associate Professor, Ph.D. in Computer Engineering, Data Analysis and Knowledge Engineering, Mansoura University, Egypt, 2000.

Dr. Usman A. Khan, Associate Professor, Ph.D. in Information Technology, Software Engineering, Integral University, India, 2007.

Dr. Saleh M. Alshomrani, Associate Professor, Ph.D. in Computer Science, Web and Internet Computing, Kent State University, USA, 2008.

Dr. Habeeb Fordoun-Fordoun, Associate Professor, Ph.D. in Computer Engineering, Human-Computer Interaction, University of Castilla-La Mancha, Spain, 2011.

Dr. Aasim Zafar, Assistant Professor, Ph.D. in Computer Science, Information Retrieval, AMU, India, 2010.

Dr. Abdulalla A. Albarakati, Assistant Professor Ph.D. in Computer Science, Software Engineering, University of Sussex, UK, 2012.

Dr. Adnan M. Albar, Assistant Professor, Ph.D. in Computer Science, Mobile Computing and Adaptive Applications, University of Sussex, UK, 2004.

Dr. Bassam Zafar, Assistant Professor, Ph.D. in Computer Science, Web Services, De Montfort University, UK, 2008.

Dr. Farrukh Nadeem, Assistant Professor, Ph.D. in Computer Science, Grid and Distributed Systems, University of Innsbruck, Austria, 2009.

Dr. Jaya Prakash kar, Assistant Professor, Ph.D. in Computer Science, Cryptographic Protocols, Utkal University, India, 2011.

Dr. Khalid H. Alomar, Assistant Professor, Ph.D. in Computer Science, Software Engineering, University of Bradford, UK, 2010.

Dr. Mahmoud I. Kamel, Assistant Professor, Ph.D. in Systems and Computer Engineering, Control Engineering, Al-Azhar University, Egypt, 1991.

Dr. Muazzam Siddiqui, Assistant Professor, Ph.D. in Modeling and Simulation, Data Mining, University of Central Florida, USA, 2008.

Dr. Muhammad Ahtisham Aslam, Assistant Professor, Ph.D. in Computer Science, Software Engineering, University of Leipzig, Germany, 2007.

Dr. Naif Radi Aljohani, Assistant Professor, Ph.D in Computer Science, Learning and knowledge Analytics, University of Southampton, UK, 2014.

Girls Campus - Sulimania

Prof. Hanene Ben-Abdallah, Professor, Computer and Information Science, Computer and Information Science, University of Philadelphia, USA, 1996.

Dr. Fatima A. O. Baothman, Assistant Professor, PhD. in Computer Science, Artificial Intelligence, University of Huddersfield, UK, 2003.

Dr. Norchen Elleuch Ben Ayed, Assistant Professor, Ph.D. in Computer Science, Software Architecture Development of Real Time Systems: Model Driven Approach, University of Tunis, Tunisia, 2013.

Dr. Salha Binti Abdullah, Assistant Professor, Ph. D. in Information Systems, Process and Information Modeling, Universiti Teknologi Malaysia, Malaysia, 2006.

Dr. Sanaa Abdullah Sharaf, Assistant Professor, Ph. D. in Grid Computing, University of Leeds, UK, 2012.

Dr. Maram Abdulrahman Meccaway, Assistant Professor, Ph. D in Computer Science, Adaptive Webbased Educational Systems, University of Nottingham, UK, 2009.

Dr. Nahla Mohamed Aljojo, Assistant Professor, Ph. D in Computing and Information Technology, University of Portsmouth, 2012.

Dr. Manal Abdullah, Assistant Professor, Ph. D in Computer Networks, Computer and System Engineering, Ain shams university, Egypt, 2002.

Information Technology Department

About the Department

The Department of Information Technology (IT) was established as one of three departments of FCIT in the year 2006. It was established to keep pace with the scientific, research and practical developments in the field of information technology especially in computer networks, databases, human-computer interaction, Web-page design and other subfields. With the multi-disciplinary nature of the work of today's IT Professional, the IT Department promotes multi-disciplinary research and activities, infusing its faculty with expertise coming from various allied and related fields. The IT department supports its faculty members through development programs for professional training and development, and through recognition of their consultancies and project involvements inside and outside of the university.

Vision

Providing high quality, and cutting-edge degree programs, research and specialized consultations in the field of information technology with highly qualified faculty members to serve the community using up-to-date technology.

Mission

- Providing the society with high quality graduates, having strong academic basis, and excellent practical expertise to work effectively in different areas of information technology.
- Providing superior education to our graduates in cutting-edge information technology areas that make them eligible to pursue graduate studies in leading national and international institutions, and be able to adapt to future technology.
- Attracting academically qualified faculty to conduct high quality research and provide consultation services to the local and regional community to solve information technology problems.

Objectives

- Review the study plans periodically to accommodate all of the emerging technologies in the area of IT specialization.
- Expansion in the field of technical cooperation with technical sectors in the society.
- Attract outstanding scientists in the areas of specialization to deliver lectures and conduct joint research with members of the department in order to exchange technical and scientific expertise, and be acquainted with all-new in the area of specialization.
- Urging the faculty to conduct outstanding scientific research and publish in distinguished scientific journals. Moreover, urging the faculty to attend conferences and seminars for various scientific collaboration with other scientific schools.
- Providing laboratories with equipment and software packages required for experiments and scientific research.

- Relying on distinguished scientific references in teaching courses of different programs in the department.
- Encouraging research groups within the department in various fields of specialization.
- Encouraging inter-cooperation between the department and other scientific departments inside and outside the faculty for multidisciplinary projects.

Program Courses

It is worth noting that course codes consist of two parts: the first two letters (CP) represent the faculty code, and the second two letters represent the department code (IT). To obtain a master's degree, a student must satisfy the following:

- Have a minimum Grade Point Average (GPA) of 3.75.
 Complete 33 credits according to the following tables:

Requirements	Credits
6 Obligatory Courses (General Courses)	13
One Obligatory course for each track	3
3 Elective courses for each track	9
Thesis	8
Total Credit Hours	33

	Obligatory Courses (General Courses) for all Tracks			
CREDIT HOURS		URS	Course Name	Code/
CR.	LAB.	Тн.	COOKSETAML	NO
3	-	3	INTERNETWORKING	CPIT 600
3	-	3	OBJECT ORIENTED SOFTWARE ENG.	CPIT 601
3	-	3	DATABASE SYSTEMS ADMINISTRATION	CPIT 602
2	-	2	QUANTITATIVE ANALYSIS	CPIT 603
1	-	1	RESEARCH METHODS	CPIT 694
1	-	1	SEMINAR	CPIT 695
8	-	8	THESIS	CPIT 699
21	-	21	TOTAL CREDIT HOURS	

	First Track: Internet Technologies				
CREDIT HOURS		URS	COURSENANC	Code/	
CR.	LAB.	Тн.	COURSE NAME	NO	
3	-	3	TCP/IP PROGRAMMING	CPIT 630	
3	-	3	TOTAL CREDIT HOURS		

	First Track: Elective for Internet Technologies (Select 3)			
Cf	redit Ho	URS	Course Name	Code/
CR.	LAB.	Тн.	COURSE IVAME	NO
3	-	3	WEB ENGINEERING	CPIT 631
3	-	3	CLOUD COMPUTING ARCHITECTURE	CPIT 632
3	-	3	E-Commerce	CPIT 633
3	-	3	INTERNET COMPUTING	CPIT 634
3	-	3	E-Security	CPIT 645
3	-	3	Selected Topics on Internet Tech.	CPIT 697
9	-	9	TOTAL CREDIT HOURS	

	Thesis				
Cf	redit Ho	URS	Course Name	Code/	
Cr.	LAB.	Тн.	COOKSE NAME	NO	
8	-	8	THESIS	CS 699	

Common Degree Plan

All students admitted to information technology department take the following courses in their planning.

	CRE	edit Hou	JRS			EK	
CR. HRS.	Тот	Lab	Тн	COURSE NAME		COURSE CODE	SEMEST
3		-	3	INTERNETWORKING		CPIT 600	
11 Units	3	-	3	OBJECT ORIENTED SOFTWAR	e Eng.	CPIT 601	ST
11 01012	3	-	3	DATABASE SYSTEMS ADMINIS	FRATION	CPIT 602	FIR
	2	-	2	QUANTITATIVE ANALYS	QUANTITATIVE ANALYSIS		
	3	-	3	Obligatory Track		CPIT 6XX	
	1	-	1	RESEARCH METHODS		CPIT 694	
11 Units	1	-	1	Seminar		CPIT 695	GCOND
	3	-	3	-	IVE CK	CPIT 6XX	Sı
	3	-	3		ELECT TRA	CPIT 6XX	
7 Units	4	-	4	THESIS		CPIT 699	RD
	3	-	3	Elective Track		CPIT 6XX	Тні
4	4	-	4	THESIS		CPIT 699	Fourth
33 Units	TOTAL CREDIT HOURS						

Courses Description

CODE	COURSE TITLE	CREDITS	Prerequisite
CPIT 600	Internetworking	3 Units	
COURSE DESCRIPTION	This course covers advanced topic protocols. Topics include internetwor protocol, classfull and classless addres cols. This course also includes routin within an autonomous system, mobile and auto-configuration, domain name s	s on internetworking, Internet king concept, Internet architec ses, and transport and applicating algorithms, routing between IP, private network interconne system, and network manageme	architecture and ctural model, IP ton layers proto- n peers, routing ection, bootstrap nt.

CODE	COURSE TITLE	CREDITS	Prerequisite
CPIT 601	OBJECT ORIENTED SOFTWARE EN- GINEERING	3 Units	
COURSE DESCRIPTION	Building on large-scale and comp the goal of increasing return on inves quality and reliability. The course c overview of advanced topics on softw engineering from research and practic	blex software systems from avai stment, decreasing time to mark covers the basic software comp vare components and component e.	ilable parts with tet, and assuring conent concepts, t-based software

CODE	COURSE TITLE	CREDITS	Prerequisite
CPIT 602	DATABASE SYSTEMS ADMINISTRA- TION	3 Units	
COURSE DESCRIPTION	This course is intended for student ment systems or wish to practice the ac data storage, database design and que physical storage and access methods, q currency control, distributed databases Creating Database, Optimal Flexible A base administration.	s who wish to specialize in da dvanced techniques involved in ries. This course covers adva uery optimization, transaction and object oriented databases rchitecture and other advanced	atabase manage- optimization of nced topics like processing, con- b. Designing and topics in Data-

CODE	COURSE TITLE	CREDITS	PREREQUISITE
CPIT 603	QUANTITATIVE ANALYSIS	2 Units	
COURSE DESCRIPTION	This course introduces the grad inquiry in the social sciences. The hypotheses, empirically fit models, pacts are based upon some form course will provide a basic introdu- entists and policy analysts. The cou- tical inference, enabling the studen statistical research.	luate student to basic method overwhelming majorities of s produce predictions, or estin of quantitative or statistical ction to statistical methods for arse will provide a solid found at to become a competent pro	Is of empirical studies that test nate policy im- analysis. This or political sci- dation in statis- oducer of basic

CODE	COURSE TITLE	CREDITS	PREREQUISITE
CPIT 620	ENTERPRISE IT ARCHITECTURE	3 UNITS	CPIT 601
COURSE DESCRIPTION	Planning for business transformation and balanced scorecard, identifying str mation, real-world case studies for busin enterprise architecture, The course is a p Concepts, analyzing various existing an through case studies, explaining how to a ness, technology and organization. Signi- the area are also covered.	using IT, strategy analysis for rategic opportunities for bu- ess transformation, managin practical extension of Enterpu- nd new business models an achieve a balanced relationsh ficant problems of EA practi	or business plans usiness transfor- g and sustaining rise Architecture and master plans ip between busi- ce and trends of

CODE	COURSE TITLE	CREDITS	Prerequisite
CPIT 630	TCP/IP PROGRAMMING	3 Units	CPIT 600
COURSE DESCRIPTION	TCP/IP is a very large protocol suit puting. This course emphasizes on the protocol suite and other practical issue tocols and standards that are common systems will be covered. The course c specific application protocols, and also lected advanced topics on current and IP multicasting, differentiated services networks, and IPv6, will also be studied	te for internet computing orough high-level undersi s concerning TCP/IP toda ily used in developing su overs networking applica the management protocol evolving Internet protocol s and quality of service, d.	and web com- tanding of this ay.TCP/IP Pro- uch distributed tions and their of (SNMP). Se- ls, in particular virtual private

CODE	COURSE TITLE	CREDITS	Prerequisite
CPIT 631	WEB ENGINEERING	3 Units	CPIT 630
COURSE DESCRIPTION	Web applications are complex syste ty to a large number of users, and also terms of performance, scalability, usab emerging and multidisciplinary process cations. Web Engineering introduce software engineering to Web developm limits of current web technologies, the and software engineering, design, infor management, and testing disciplines.	ems that deliver a plethora exhibit unique behaviors a fility, and security. Web en s that is used to create qua s a structured methodolo nent projects. This course similarities and difference rmation and service archite	of functionali- ind demands in igineering is an ility web appli- ogy utilized in will discuss the es between web ectures, content

CODE	COURSE TITLE	CREDITS	PREREQUISITE
CPIT 632	CLOUD COMPUTING ARCHITECTURE	3 Units	CPIT 630
COURSE DESCRIPTION	The course examines basic APIs us for building, deploying, and maintaining existing SaaS offerings into new serv source implementation of MapReduce build very powerful and efficient appli- not trivial issues in the Cloud: load bal and identity and authorization manager	ed in the Cloud, including ng applications. We learn vices and how to use Hac framework and RestFul W ications. We also learn ho ancing, caching, distribute nent.	the techniques how to weave loop, the open /eb services, to w to deal with ed transactions,

CODE	COURSE TITLE	CREDITS	Prerequisite
CPIT 633	E-COMMERCE	3 Units	CPIT 630
COURSE DESCRIPTION	This course is designed to provi- merce concepts. The learner will part to provide familiarity with the tools a commercial enterprise. The learner w vironments designed to meet secure re	de in-depth coverage of e ticipate in a variety of acti nd issues associated with a ill plan, design, develop ar etail and organizational nee	lectronic com- vities designed web-delivered id test web en- ds.

CODE	COURSE TITLE	CREDITS	Prerequisite
CPIT 634	INTERNET COMPUTING	3 Units	CPIT 630
COURSE DESCRIPTION	This course covers the basic princ ting over the Internet. It focuses on sources with Grids, distributed com oriented computing. The Internet is in network for deploying distributed app diverse areas. Application areas inclu Services, Scientific Computing and Visualization, Remote Collaboration, ing. The Internet is pandemic to mode	iples and practices of distribute internet as a domain puting with Web services creasingly used as a large i lications to solve challenginde Finance and E-busines Grids, Bioinformatics, Pf Multimedia applications, rn uses of technology.	ributed compu- for sharing re- s, and service- interconnection ng problems in s, Government nysics, Remote and File Shar-

CODE	COURSE TITLE	CREDITS	PREREQUISITE
CPIT 640	ADVANCED INFORMATION SECURITY	3 Units	CPIT 600
COURSE DESCRIPTION	This course investigates advanced private and public key cryptosystems authentication codes, basic digital sig Additional topics include digital wate phy. Students will write a term paper reporting a student's own implementa graphic scheme. Depending on the sig give a presentation to the class.	d topics in cryptography. s, cryptographic hash func gnature schemes, and user ermarking, fingerprinting, a r, either theoretical based tion or experiments with a ze of the group, some or a	Topics include tions, message authentication. nd steganogra- on literature or chosen crypto- ll students will

CODE	COURSE TITLE	CREDITS	Prerequisite
CPIT 641	INTERNET SECURITY	3 Units	CPIT 640
COURSE DESCRIPTION	The course is devoted to investig tocol levels. Topics include network tual private networks, key managem ty: SSL, TLS, and SSH protocols. A security, application-specific protoco malicious software and antivirus, int tions, and configurations.	ate the security of networks level security and the IPsec ent and distribution, transpo Additional topics include wi ols for e-mail security: PGP rusion detection, and firewal	at various pro- c protocol, vir- ort level securi- reless network and S/MIME, lls: types, loca-

CODE	COURSE TITLE	CREDITS	Prerequisite
CPIT 642	CRYPTOGRAPHIC ALGORITHMS	3 Units	CPIT 640
COURSE DESCRIPTION	The course is devoted to the review implementation and usage. Classical er Shamir-Adleman and EL Gamal will b eral others will be presented. This cou and interactive proof protocols. Studen ical based on literature or reporting a ments with a chosen cryptographic sch some or all students will give a present	y of basic cryptographic all hcryption techniques and t be seen in depth, and an over urse also presents authention the will write a term paper, student's own implementate eme. Depending on the size ation to the class.	gorithms, their hose of Rivest- verview of sev- cation schemes , either theoret- tion or experi- te of the group,

CODE	COURSE TITLE	CREDITS	PREREQUISITE
CPIT 643	COMPUTER FORENSICS	3 UNITS	CPIT 640
COURSE DESCRIPTION	This course provides students with puter forensics to know different asp to uncover, protect and exploit digit foundation for the techniques and me mation from digital devices. Studer available computer forensics tools, be use them to perform rudimentary if own tools for special needs situations	ith knowledge and understa ects of computer crime and ital evidence. It will provid tethods needed for the extra its will gain exposure to th both hardware and software, nvestigations along with des.	anding of com- ways in which le a theoretical action of infor- ne spectrum of and be able to eveloping their

CODE	COURSE TITLE	CREDITS	PREREQUISITE
CPIT 644	SECURE NETWORKS	3 Units	CPIT 640
COURSE DESCRIPTION	This course provides students wi security in a networked world. It v needed to understand the problems of form a risk analysis to ascertain the tl implement security strategies to effect fects of these attacks.	th knowledge to understand vill provide students with f wired and wireless networ hreats and cost of an attack, ctively build a defense to m	d the basics of the foundation k security, per- and design and inimize the ef-

CODE	COURSE TITLE	CREDITS	PREREQUISITE
CPIT 645	E-Security	3 Units	CPIT 640
COURSE DESCRIPTION	The course will focus on t ples that are important in the system. The course will exami It provides an in depth review security. Students satisfactorily mulate a security model for w security models and risks of e- associated with planning, desi- ing security at all levels in an e	he technology, concepts, issue e design and implementation ine technology for protecting of the theoretical and appli- y completing the course will eb environment and be able system. It focuses on concep- gning, implementing, manag- -system.	ues and princi- n of secure e- s such systems. ed topics in e- be able to for- to evaluate the ts and methods ing, and audit-

CODE	COURSE TITLE	CREDITS	Prerequisite
CPIT 697	SELECTED ADVANCE TOPICS ON INTERNET TECHNOLOGIES	3 UNITS	CPIT 630
COURSE DESCRIPTION	Topics on current research ar gies.	nd professional issues in i	nternet technolo-

CODE	COURSE TITLE	CREDITS	Prerequisite
CPIT 692	SELECTED ADVANCE TOPICS ON NETWORKS SECURITY	3 Units	CPIT 640
COURSE DESCRIPTION	Topics on current research and p	professional issues in net	work security.

CODE	COURSE TITLE	CREDITS	Prerequisite
CPIT 694	RESEARCH METHODS	1 Units	CPIT 601
COURSE DESCRIPTION	In this course, students are introduce entific Methods of Research and its Sp to select a topic for research? Theory variables, Hypothesis Testing and Cha Systematic Literature Review, Theor search Proposal, The Research Proce Concepts, Criteria for Good Measurem interviewing, Telephone interviewing, traffic areas.	d to: the Definition and Value of pecial Features, Classification of and Research, Concepts, Variab aracteristics, Review of literatur retical Framework, Problem De ss, Ethical Issues in Research, nent, Research Design, Survey re Intercept and interviews in mall	of Research, Sci- Research, How bles and types of re, Conducting a efinition and re- Measurement of search, Personal ls and other high

CODE	COURSE TITLE	CREDITS	Prerequisite
CPIT 695	SEMINAR	Y UNITS	CPIT 694
COURSE DESCRIPTION	In this course, student will prep student will produce and defend the a more detailed description of inter view and project plan. The student v	are the proposal of his/her M eir thesis outlines. The propose ided research points, a detaile will be evaluated on their repo	Sc. thesis. The sal will contain ed literature re- ort, and viva.

CODE	COURSE TITLE	CREDITS	PREREQUISITE
CPIT 699	THESIS	3 Units	CPIT 695
COURSE DESCRIPTION	The Thesis is the culmination of gained and the study methods used, to an IT related field. This will involve critical analysis of these developments of the thesis work student will also new verified using scientific reasoning such	the Masters course by applying make a detailed analysis of a pa a survey of recent development and a prognosis of future develo- ed to produce original contributi h as prototyping or simulation.	g the knowledge articular topic in ts in the field, a opments. As part on that has been

Department Faculty

Boys Campus - Sulimania

Prof. Dr. Abdulfattah S. Mashat, Professor, Ph.D. in Computer Science, Multimedia Systems, University of Leeds, UK, 1999.

Prof. Dr. Mohammed A. Madkour, Professor, Ph.D. in Computer Engineering, Computer Network, Ain Shams University, Egypt, 1981.

Prof. Dr. Hassanin M. Al-Barhamtoshy, Professor, Ph.D. in Systems and Computer Engineering, Text Understanding using NLP, Al-Azhar University, Egypt, 1992.

Dr. Abdulrahman H. M. Altalhi, Associate Professor, Ph.D. in Computer Science, Computer Networks, University of New Orleans, USA, 2004.

Dr. Ahmad M. Barnawi, Associate Professor, Ph.D. in Telecommunication Engineering, Mobile Networks, University of Bradford, UK, 2005.

Dr. Ahsan Abdullah, Associate Professor, Ph.D. in Computer Science, Data Mining, University of Stirling, UK, 2008.

Dr. Mohammed J. Alhaddad, Associate Professor, Ph.D. in Computer Science, Distributed Database Systems, University of Essex, UK, 2006.

Dr. Reda M. Salama, Associate Professor, Ph.D. in Computer Science, Operating Systems, Kassel University, Germany, 1995.

Dr. Sami M. Halawani, Associate Professor, Ph.D. in Computer Science, Multimedia Systems, George Mason University, USA, 1996.

Dr. Ahmed M. Abdulmunim, Assistant Professor, Ph.D. in Computer Science, Computer Graphics, University Malaya, Malaysia, 2009.

Dr. Fuad G. Bajaber, Assistant Professor, Ph.D. in Informatics, Computer Networks, University of Bradford, UK, 2010.

Dr. Georgios Tsaramirsis, Assistant Professor, Ph.D. in Computing, Software Engineering, King's College London, University of London, UK, 2011.

Dr. Khalid W. Magld, Assistant Professor, Ph.D. in Informatics, Computer Networks, University of Bradford, UK, 2007.

Dr. Mohamed Ismail S. M. Buhari, Assistant Professor, Ph.D. in Information Technology, Computer Networks, Multimedia University, Malaysia, 2003.

Dr. Muhammad M. A. Khamis, Assistant Professor, Ph.D. in Electrical Engineering, Fault Tolerance, Gent University, Belgium, 1996.

Dr. Muhammed M. Monowar, Assisstant Professor, Ph.D. in Computer Engineering, Wireless Networks, Kyung Hee University, South Korea, 2011.

Dr. Omar A. Batarfi, Assistant Professor, Ph.D. in Computer Science, Computer Security, University of Newcastle upon Tyne, UK, 2007.

Dr. Rizwan J. Qureshi, Assistant Professor, Ph.D. in Computer Science, Software Engineering, National College of Business Administration and Economics, Pakistan, 2009.

Dr. Saim R. R. Ahmed, Assistant Professor, Ph.D. in Computer Science, Human-Computer Interaction, University of Milan, Italy, 2011.

Girls Campus - Sulimania

Prof. Dr. Lamiaa Fatouh, Professor, Ph. D. in Computer Engineering, Artifical Intelligence and Network Planning, Cairo University, Egypt, 1999.

Dr. Fatma Bouabdallah, Assistant Professor Ph.D. in Computer Science, Networking, University de Rennes I, France, 2011.

Dr. Maysoon F. AbulKhair, Assistant Professor, Ph. D. in Computer Science, Human-Computer Interaction, University of Sheffield, UK, 2004.

Dr. Mounira M. Taileb, Assistant Professor, Ph.D. in Computer Science, Multimedia Systems, University Paris-Sud 11, France, 2008.

Dr. Rajya L. Davuluri, Professor, Ph.D. in Computer Science and Engineering, Computer Vision, Jawaharlal Nehru Technological University, India, 2000.

Dr. Sana Younes, Assisstant Professor, Ph.D. in Computer Science, Stochastic Models, University of Versailles, France, 2008.

Dr. Wafaa M. Shalash, Assistant Professor, Ph.D. in Electrical Engineering, Biometrics, Almansoura University, Egypt, 2006.

Academic Regulations and Policies

Academics are largely governed by the regulations of graduate studies and exams in the Kingdom of Saudi Arabia issued by the Ministry of Education, and rules of King Abdulaziz University published by its Deanship of Admission and Registration. Both students and faculty are encouraged to check relevant academic rules and procedures in the latest FCIT *Graduate Student Guide*. The most important information is highlighted next.

Academic Integrity

Scholastic Honesty Policy

We are serious about creating an honest and ethical learning environment. FCIT will not tolerate dishonest actions such as cheating and plagiarism, or disruptive behavior that violates its rules and conduct expectations. Offenders will be subject to punishment in accordance with student disciplinary regulations as issued by the University Council. FCIT reserves the right to use various means to detect and document dishonest conduct.

Code of Student Conduct

FCIT expects all of its students to conduct themselves in a respectful, ethical, and professional manner. In addition to guidelines outlined in KAU document of Student Rights and Obligations, students are expected to adhere to the following:

- Respect and be courteous to faculty members, staff, and fellow students.
- Respect faculty property both physical and electronic.
- Respect faculty rules and regulations.
- Attend classes regularly and punctually.
- Complete all assignments on time and honestly.
- Actively participate in faculty activities.
- Lead by example and be a good representative of KAU students.

Student Appeals

Students can appeal any decisions according to standard university process published in Arabic within the *KAU Regulations Governing Student Rights and Obligations* manual, available on KAU website under Deanship of Admissions and Registration.

Academic Advising

Academic advising is a key to success at any higher education institution. FCIT considers academic advisers a valuable resource to students as they help plan their graduate career and, ultimately, prepare them for graduation. Academic advising means guiding the students/advisees on different issues related to their academic progress and to help them find solutions to different academic problems. Academic advising is related to assisting students with educational choices, degree requirements, academic policies/procedures, as well as broader concerns such as career and graduate school options in the future.

The four stakeholders involved in the process of academic advising at FCIT are:

- 1. The advisee/student.
- 2. The advisor/faculty member.
- 3. The Head of the Academic Advising Committee or the Head of Academic Advisors.
- 4. The department/program.

Details of academic advising procedures and policies can be found in the FCIT Academic Advising Manual available by the Academic Affairs Unit.

Roles and Responsibilities

An academic advisor is a selected faculty member of the department for the process of guiding the students/advisees on different issues related to their academic progress and problems. Maximum number of students per academic advisor is twenty (20). Following are the responsibilities defined for the academic advisor:

- 1. Advise graduate students and address their academic concerns.
- 2. Follow and report student's progress via advising checklist sheet.
- 3. Participate in orientation and advising services.
- 4. Assist students in selecting suitable senior projects and supervisors.
- 5. Check fulfillment of graduation requirements.

The advisee/student has the responsibility to:

- 1. Recognize that advising is a shared responsibility and accept responsibility for all decisions.
- 2. Share personal values, abilities and goals.
- 3. Prepare for advising sessions and bring relevant materials.
- 4. Meet with the advisor when asked or when in need of assistance.
- 5. Learn policies, procedures and requirements, i.e. add/drop deadlines, graduation and general education policies.

Grade Point Average (GPA) Calculation

The minimum course passing grade is "Pass" (C), which corresponds to 70% of final marks obtained by student and a GPA of 3 out of 5. The Grade Point Average (GPA) is calculated as an average of points, obtained according to the table below, weighted by course credits. Although students are allowed to repeat any course, new grades do not cancel out old ones. Old grades are kept in the student's transcript and are counted in their GPA. The details of transforming marks into grade symbols and grade points are as follows:

Range of Marks	Grade Symbol	Grade Points
95 - 100	A +	5.0
90 - 94	А	4.75
85 – 89	B +	4.5
80 - 84	В	4.0
75 – 79	C +	3.5
70 – 74	С	3.0
65 – 69	D +	2.5
60 - 64	D	2.0
Less than 60	F	1.0

Additionally, special grades may be awarded. The following are the most common. The official transcript issued by King Abdulaziz University has a complete list.

- The grade "Incomplete" (IC): if a student, for strong reasons, becomes unable to complete the requirements of a registered course, they can request a grade of (IC). The case should be presented to the Department Council for approval. Students have to complete the course requirements during the following semester otherwise their grade will automatically change to "Fail" (F).
- **The grade "In-Progress" (IP):** some students may need more time to complete course requirements in cases such as the senior project. They can be awarded a grade of (IP) and allowed to postpone their grade for no more than two semesters.
- **The grades "Nograde-pass/fail" (NP/NF):** these grades are awarded for courses that require demonstrating satisfactory performance such as the summer training.
- **The grade "Denied" (DN):** awarded in cases where student class absence exceeds limits set by King Abdulaziz University within national guidelines as detailed in the section *Absence from Classes*. DN corresponds to 1.0 point in GPA calculation.

Absence from Classes

Absence exceeding 25% of course classes is grounds for granting a grade of "Denied" (DN), and being denied admission to the final exam of the course. Students with absence of 25%-50% may submit an excuse request to the Faculty Council supported by proper documentation.

Transfer Policies

Transfers between colleges within King Abdulaziz University, or from other institutions are handled by the Deanship of Admission and Registration are subject to approval by FCIT. Transfers inside FCIT are handled by its Academic Affairs Unit.

Students, who want to transfer to FCIT are subject to the following:

- 1. GPA should be no less than 3 out 5 or equivalent.
- 2. No disciplinary action in academic record.
- 3. Only one-time transfer is allowed.
- 4. No more than half of completed credits may be transferred.
- 5. Application through the university electronic systems before submission deadlines specified in academic calendar.

Course transfer rules are as follows:

- 1. Course must be equivalent to similar FCIT program course based on course syllabi.
- 2. The number of credits must match corresponding FCIT program course.
- 3. Additional conditions placed by FCIT may apply.

Students may transfer from one program to another (change their major) within FCIT only once if they have not completed 50% of graduation credit hours in their original program. Transferred students should complete all the requirements of the new program. Credits from the original program will remain in the student's record and will contribute to their GPA.

Rules of Supervision⁹ of Theses/Dissertations

Definitions⁽¹⁾:

Thesis/Dissertation⁽¹⁾: An academic work introduced by the graduate students to fulfill the requirements of obtaining the Master's or PhD Degree, which its title and proposal have been approved by the board of the Department Council and Deanship of Graduate Studies as per the recommendation of both the councils of Scientific Department and College. This has to be done according to the Manual of Theses Preparation approved by the Graduate Studies Deanship.

Student⁽¹⁾: A male or female graduate student who registers for attaining the theses after getting his/her Thesis/Dissertation accredited along with appointing an academic supervisor by the Deanship of Graduate Studies Council as per the recommendation given by the meant two councils of Department and College.

Advisor: He/she is a faculty member chosen by the academic section dedicated for each graduate student at the beginning of his/her joining the program. His/her duty is to guide and assist the student in their selection of the subject required and preparing the research plan proposal.

Supervisor: He/she is a faculty member appointed by the Council of the Graduate Studies to supervise a graduate student as per the recommendation of the two councils of Department and College. He/she is the main supervisor in case of more than one supervisor is chosen to supervise the Thesis/Dissertation.

Co-supervisor: He/she is a faculty member appointed as an assistant supervisor for the student' main supervisor. He/she can also be selected to supervise a part of the The-sis/Dissertation.

Selection of the Thesis/Dissertation subject:

- 1. The student chooses the Thesis/Dissertation subject and writes the proposal of the research plan (assisted by the supervisor) in accordance with the university and academic section goals based on the specialization which has been adopted when He/she is admitted in the graduate program.
- 2. The student has to submit the proposal of the research plan to his/her direct academic supervisor in order to present it to the Department Council before the end of the next semester, to finalize 50% of the courses and after passing the comprehensive exam as part of the PhD requirements.
- 3. All the Masters' degree topics should be serious and original, while the PhD topics should be characterized with originality, and creativity. They should directly contribute to the student's knowledge development within his/her field of specialization.

⁹ Deanship of Graduate Studies (Web Site):

http://graduatestudies.kau.edu.sa/Content.aspx?Site_ID=306&Ing=EN&cid=237514

4. The research plan proposal should have a bilingual title, research introduction, research problem, research objectives, research importance, the proposed plan for implementation, time frame to accomplish the proposed research and the most important references used by the researcher.

Student' direct relation with the supervisor of the academic section¹⁰:

- 1. The graduate student should be in contact with the supervisor (or supervisors) with regard to his/her Thesis/Dissertation through regular meetings. This scientific contact should be made regularly twice every two weeks and in a scheduled manner.
- 2. He/she should be committed to attending all the courses and lectures recommended by the supervisor.
- He/she should offer a number of scientific seminars within his/her affiliated academic Department during the phase of the Thesis/Dissertation, based on the following:
 - A- Upon completion of the proposal plan, and before introducing it to the Department Council, the student displays his/her research proposal, its importance, its goal, its method of implementation and the possibilities of the research implementation and to what extent the research topic is original. It must also include the benefits of the Thesis/Dissertation.
 - B- The Ph.D. student should be committed to providing an annual scientific workshop on his/her research subject within the scientific seminars organized by the department.
 - C- Upon the final delivery of the graduate student's Thesis/Dissertation, He/she should present his/her study in a scientific workshop attended by the supervisor/supervisors, faculty members and other graduate students.
- 4. The supervisor has to assist the student in conducting a timetable for the stages of the Thesis/Dissertation (research and investigation, Thesis/Dissertation axes, Thesis/Dissertation delivery, etc.) plus the expected length of time for the Thesis/Dissertation.
- 5. If a student does not come to meet with his/her supervisor for a whole month without acceptable excuses, the supervisor shall inform the Head of the Department to take the necessary measures.

Student's responsibilities and duties¹¹:

- 1. He/she should abide by the plan agreed and approved by both councils of the Scientific Department and College and the Deanship of Graduate Studies.
- 2. He/she should show his/her seriousness and dedicated attention to all that is academically required, without any delay or negligence.
- 3. He/she must comply with the guidance directly provided by his/her supervisor.
- 4. He/she should well-prepare his/her tools and develop his/her skills, and to be fully responsible for the management of the research activities and the achievement of the various tasks needed to complete his/her Thesis/Dissertation.

¹⁰ Web site of Deanship of Graduate Studies

http://graduatestudies.kau.edu.sa/Content.aspx?Site_ID=306&lng=EN&cid=237514

¹¹ Web site of Deanship of Graduate Studies

http://graduatestudies.kau.edu.sa/Content.aspx?Site_ID=306&lng=EN&cid=237514

- 5. He/she must discuss the various ways utilized in solving the problems or dealing with the difficulties facing the research, with his/her direct supervisor, whenever these issues take place.
- 6. The student bears the responsibility of informing the Scientific Department with regard to the timetable set for the research plan, the stages that have been implemented, supervisor change follow-up or the Thesis/Dissertation subject, at a regular base. (In the event of an emergency happens to the supervisor such as sickness, retirement, termination of contract, death, etc.).
- 7. He/she should be committed to the ethics of scientific research as well as the academic norms such as documenting information that requires mentioning the names of the references owners.
- 8. The Thesis/Dissertation should contain the necessary acknowledgement for the people who supported it or those who cooperated with the researcher, either directly or indirectly, or those who provided him/her with the required material support.
- 9. The student performs all the amendments suggested by the Defense Committee on the fixed time, and He/she must take the approval of the reporter with regard to these changes, plus that this should be made under the supervision of the main supervisor.

Supervisor's responsibilities and duties¹²:

- 1. Enlightening the student about their tasks, duties, rights, importance of the academic research and the need to get committed to their ethics, responsibilities and methods.
- 2. Knowing about the university rules and regulations with regard to the Thesis/Dissertation and making sure that the student is fully conversant about them.
- 3. The supervisor starts to comply with the tasks affiliated to supervising the student's Thesis/Dissertation after finalizing all the formal procedures to register this Thesis/Dissertation.
- 4. Making sure that the Thesis/Dissertation topic is serious, authentic and fully in compliance with the Kingdom's rules and the university as well.
- 5. Directing the student to adhere to the Thesis/Dissertation writing rules, according to the scientific guidebook dealing with writing the Thesis/Dissertation for King Abdul Aziz University.
- 6. Assisting the student as much as possible to raise their level of academic attainment and to satisfy their needs whether they are training, lab experiments, computers, software, technicians or other requirements.
- 7. Providing the student with advice and assistance that enable them to reach the entities or persons who have the ability to assist them academically in order to overcome any difficulties during the preparation of the Thesis/Dissertation.
- 8. The supervisor must submit a report about the student on a regular basis since his/her appointment as a supervisor, before the end of each semester, and until the last semester where the student can defend their Thesis/Dissertation, and where the supervisor will clarify the progress made by the student in their Thesis/Dissertation.

¹² Web site of Deanship of Graduate Studies

http://graduatestudies.kau.edu.sa/Content.aspx?Site_ID=306&lng=EN&cid=237514

- 9. He/she should guide the student towards accuracy and to make sure that they use the original references as a sign of credibility in their research.
- 10. He/she should encourage the student to publish a part or parts of their Thesis/Dissertation in the form of scientific research derived from the scientific Thesis/Dissertation in prestigious scientific journals, or through the participation in conferences, scientific papers and scientific research activities.
- 11. Evaluating the scientific Thesis/Dissertation in a precise and clear manner upon receiving its draft, then notifying the student with the amendments no later than 3 months from receiving the Thesis/Dissertation draft by the supervisor.
- 12. Preparing the student for the viva. The student should offer a rehearsal presentation tackling the Thesis/Dissertation topic, its scientific buildup and results, plus their efforts to develop their performance.
- 13. The committee decision will be approved by the Council of Graduate Studies based on the recommendation of the two councils of Department and College. (IS IT RELEVANT HERE?)
- 14. Following the administrative procedures relating to the Defense Committee, and scheduling the debate time in coordination with the Defense Committee.
- 15. Following up the procedures of the corrections suggested by the members of the viva Committee. However, if the supervisor is not authorized by the committee to pursue the amendments, he/she should follow up what has been attained in the capacity of themselves as the Reporters of the Defense Committee.

Responsibilities and duties of the Co- supervisor:¹³

- 1. Attending the meetings conducted between the main supervisor and the student, at least one time every semester.
- 2. Keeping a copy of the approved Thesis/Dissertation plan that has been indorsed by both councils of the academic Department and College, and the Graduate Studies Deanship. The co-supervisor should also keep a copy of the timetable set for the completion of the scientific Thesis/Dissertation.
- 3. Working closely with the main supervisor in checking the student's Thesis/Dissertation as required by the schedule, and writing a proposal showing what can help to facilitate the completion of the scientific Thesis/Dissertation in a satisfactory manner.
- 4. Work closely with the main supervisor in providing all the needs, tools or licenses required to conduct the Thesis/Dissertation through the relevant authorities (such as training, laboratory needs, computer hardware and software, experiments, etc) and making a proposal concerning what can assist the student to complete their Thesis/Dissertation.
- 5. In the event of an emergency happens to the main supervisor (sickness, death, contract termination, retirement, etc.), the co-supervisor is committed to achieving the following:
 - To supervise the student until an alternative supervisor is appointed by the Council of the Scientific Department.
 - In case of not satisfying the legal conditions to undertake the task of supervising

¹³ Web site of Deanship of Graduate Studies

http://graduatestudies.kau.edu.sa/Content.aspx?Site_ID=306&lng=EN&cid=237514
the student, or in case of a different specialization in the Thesis/Dissertation, He/she should supervise the stages and the legal procedures concerning the appointment of a supervisor or changing the Thesis/Dissertation subject with the possibility of continuing his tasks as an assistant supervisor for the new main supervisor.

Intellectual property rights:

- 1. In case of publishing some parts derived from the Thesis/Dissertation, the following points should be taken into consideration:
 - The student has the right to publish, in coordination with the Thesis/Dissertation supervisor/supervisors.
 - When publishing the Thesis/Dissertation, the supervisor, has to mention the name of the student and the co-supervisor.
 - The arrangement of the names of the research authors should be as follows: (students and supervisors) and put as per their mutual agreement and coordination.
 - The name of King Abdul Aziz University as well as the supervisors' names in the university should be mentioned.
- 2. In case of publishing the Thesis/Dissertation or any part of it in a form of a book, the following points should be considered:
 - The rules and regulations of scientific research in this regard.
 - Names of the book's authors that include the student and the Thesis/Dissertation supervisors.
 - If the Thesis/Dissertation gets the scientific patent, this patent should be recorded under the name of the student and the Thesis/Dissertation supervisor/supervisors, with preservation of the rights of King Abdul Aziz University in accordance with the laws and regulations governing the issue of publication.

Rights:

A graduate student is entitled to apply in writing to the Head of the Department to change their supervisor, stating the reasons behind this request.

A supervisor has the right to discontinue supervising his/her student. This can be through a formal notification submitted to the head of the department, explaining the reasons behind this. However, he/she will continue supervising the Thesis/Dissertation until another supervisor is appointed.