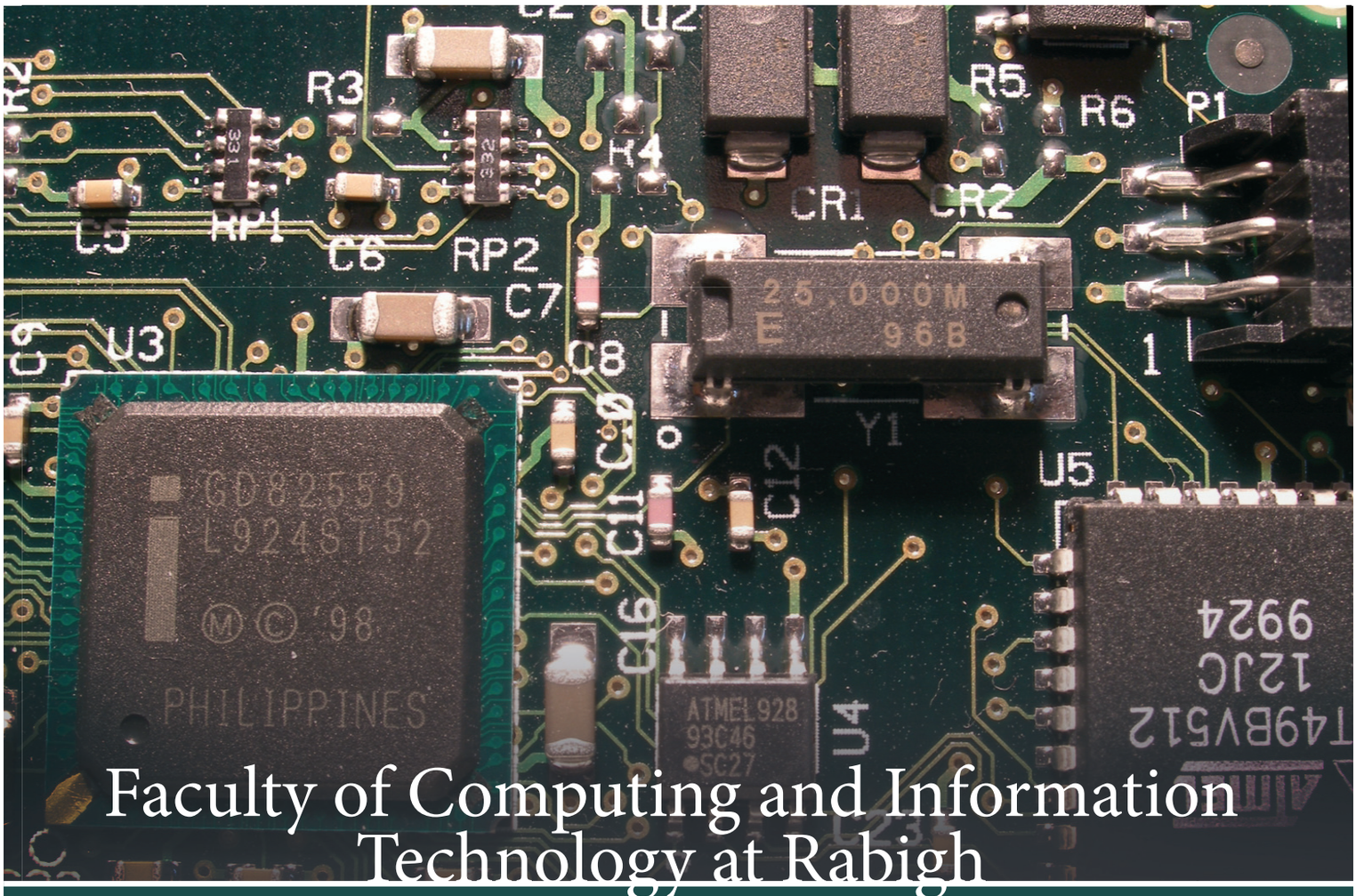

Faculty of Computing and Information Technology at Rabigh

Faculty Contact:

Dean's Office
Tel : 24234030 Ext: 103 Fax: 24234030 Ext: 101
Email : *fcitr@kau.edu.sa*
Web Site: *http://fcitr.kau.edu.sa/*

History:

The Faculty of Computers and Information Technology in Rabigh was established in 2009. It offers three specialized programs: Computer Sciences, Information Systems and Information Technology.

Vision:

To provide an attractive and distinguished learning environment by adopting modern and accredited curricula, enhancing scientific research, and providing training and advisory services to various sectors of the Saudi society.

Mission:

To graduate highly qualified students capable of meeting the labor market requirements; to conduct high level scientific research in theoretical and applied areas, and to provide training and advisory services at both national and local levels.

Departmental Requirement:

To earn a degree in Computers & Information Technology, students must complete a total of 140 credit hours distributed as follows:

- 26 credit hours of University requirements,
- 15 credit hours of preparatory year requirements,
- 24 credit hours of general faculty courses
- 9 credit hours for elective courses
- 66 credit hours of departmental courses
- 57 credit hours for mandatory courses
- 9 credit hours for elective courses

Faculty of

Computing and Information Technolgy at Rabigh

Faculty Requirements: Students must complete the following 24 credit hours of general faculty courses: Credit Hours 24

No.	Course Code:	Course No.	Course Title	Credit	HOURS			Prerequisite
					Theory	Lab	Prac	
1	STAT	210	Probability Theory	3	3	0	0	STAT 101
2	CPIT	201	Introduction To Computing	3	3	1	0	
3	CPCS	202	Programming I	3	3	1	0	
4	CPCS	203	Programming II	3	3	1	0	CPCS 202
5	CPCS	204	Data Structures I	3	3	1	0	CPCS 203
6	CPIT	221	Technical Writing	2	1	2	0	
7	CPIS	334	Introduction To Software Project Management	2	2	1	0	
8	CPIS	428	Professional Computing Issues	2	2	0	0	CPCS 323, CPIS 323, CPIT 323
9	CPCS	222	Discrete Structures I	3	3	1	0	
			Total	**24**	**23**	**8**	**0**	

Departments and Academic Degrees:

Department / Program	Academic Degree
Information Technology	B.Sc
Computer Sciences	B.Sc
Information Systems	B.Sc

Course Descriptions:

CPIT 201 : Introduction to computing
This course teaches the binary numeric systems and data representation. Topics include: the internal components of the computer and how they function, Basics of algorithms, programming and operating systems, basics of databases and networking.

PCS 202 : Programming I
The course aims at teaching students the principles and concepts of programming. How to write programs to solve simple problems. How to use programming to solve problems and scientific issues and process.

CPCS 203: Programming II
The course aims at teaching students the principles and concepts of object-oriented programming. How to use object-oriented programming to solve problems and scientific and practical issues in advanced applications.

CPCS 204: Data Structures I
The course aims to enable the student to understand in-depth data structures and to know how to apply them to resolve practical issues. It also aims at teaching students how to analyze algorithms performance.
Prerequisites: CPCS 202

CPIT 221: Technical Writing
This course is designed to help students improve their writing skills and to learn strategies for successful writing both in college and professional practice. It helps students to analyze essays as well as to write effective essays using strong, clear, effective sentences and well-developed paragraphs, and eliminating wordiness, weak expressions, and ambiguity.

CPCS 222: Discrete Structure
This course aims to give students the basic concepts of discrete mathematics that enables them to understand the necessary foundations for the study of computer systems and software development

CPIS 334: Introduction to Software Project Management
The course aims to teach the students the basic concepts of IT project management in general, and programming systems projects in particular. He will know about the projects scheduling basics, build a working team, manage risks, solve the problems that may face the projects, implement the projects in time and within the allocated budgets. The student will also learn and use one of the most popular applications in programming systems projects management such as MS project management to practice what he learned.

CPIS 428: Professional Computing Issues
The course aims to give a full description of the ethical, legal, cultural and professional issues related to the age of computers and information.
Prerequisites: CPIT 323 or CPCS 323 or CPIS 323

Department of

Computer Science

Department Contact:

Chairman's Office
Tel : 024234030 Ext: 103 Fax: 024234030 Ext: 101
Email : *fcitr@kau.edu.sa*
Web Site: *http://fcitr.kau.edu.sa*

History:

The department was established in 2009 and was activated in the second semester of the academic year 2008 - 2010.

Vision:

To be a distinct department in the field of education and scientific research and contribute to the Saudi community by providing training and advisory services.

Mission:

To provide advanced and distinguished educational curricula, and to graduate highly qualified students that are able to serve their country, perform high-level scientific research and provide training and advisory services to serve the community.

Departmental Requirements:

To earn a degree in Computers & Information Technology, students must complete a total of140 credit hours distributed as follows:

- 26 credit hours of University requirements,
- 15 credit hours of Foundation year requirements,
- 24 credit hours of general faculty courses
- 9 credit hours for elective courses
- 66 credit hours of departmental courses
- 57 credit hours for mandatory courses
- 9 credit hours for elective courses

Department Study Plan:

Students study 66 credit hours of courses according to specialization.
Study Requirements Plan for Department of DEPARTMENT OF COMPUTERS SCIENCES Track - A:

Department Core Courses: Credit Hours 57

No.	Course Code:	Course No.	Course Title	Credit	HOURS			Prerequisite
					Theory	Lab	Prac	
1			Lab Science 2	4	3	3	0	
2	CPCS	211	Digital Logic Design	3	3	1	0	CPIT 201
3	CPCS	212	Applied Math for Computing 1	4	3	2	0	MATH 202
4	CPCS	214	Computer Organization & Architecture 1	3	3	1	0	CPCS 211
5	CPCS	223	Analysis & Design of Algorithms	3	3	1	0	CPCS 204
6	CPCS	241	Database 1	3	3	1	0	CPCS 204
7	CPCS	301	Programming Languages	3	3	1	0	CPCS 204, 222
8	CPCS	302	Compiler Construction	3	3	1	0	CPCS 301
9	CPCS	323	Summer(workplace) Training I	0	0	0	3	
10	CPCS	324	Algorithms & Data Structures 2	3	3	1	0	CPCS 222 - 223
11	CPCS	331	Artificial Intelligence 1	3	3	1	0	CPCS204, 223
12	CPCS	351	Software Engineering 1	3	3	1	0	CPCS 204
13	CPCS	361	Operating Systems 1	3	3	1	0	CPCS 204, 214
14	CPCS	371	Computer Networks 1	3	3	1	0	CPCS 214
15	CPCS	381	Human-Computer Interaction 1	2	2	1	0	CPCS 204
16	CPCS	391	Computer Graphics 1	3	3	1	0	CPCS 204, 212
17	CPCS	498	Senior Project 1	1	1	0	0	Senior Level
18	CPCS	499	Senior Project 2	3	2	2	0	CPCS 498
19	MATH	202	Calculus 2	4	4	0	0	MATH 101
20	STAT	352	Applied Probability & Random Processes	3	3	1	0	STAT 210
			Total	**57**	**54**	**21**	**0**	

Department of

Computer Science

Elective Core Courses: Credit hours 9 Students select 9 credit hours from the following elective courses

No.	Course Code:	Course No.	Course Title	Credit	HOURS			Prerequisite
					Theory	Lab	Prac	
1	CPCS	353	Software Eng. Practices	3	3	1	0	CPCS 351
2	CPCS	372	Computer Networks 2	3	3	1	0	CPCS 371
3	CPCS	403	Internet Application Programming	3	3	0	0	CPCS 324, 371
4	CPCS	404	Component-Based Computing	3	3	0	0	CPCS 351
5	CPCS	405	Software Technology Topics	3	3	0	0	CPCS 351
6	CPCS	413	Computer Architecture 2	3	3	0	0	CPCS 341
7	CPCS	414	High Performance Computing	3	3	0	0	CPCS 361
8	CPCS	424	Theory Of Computation	3	3	0	0	CPCS 212, 222
9	CPCS	425	Information Security	3	3	0	0	CPCS 361, 371
10	CPCS	432	Artificial Intelligence 2	3	3	0	0	CPCS 331
11	CPCS	433	Artificial Intelligence Topics	3	3	0	0	CPCS 331
12	CPCS	442	Database 2	3	3	0	0	CPCS 241
13	CPCS	454	Object-Oriented Analysis & Design	3	3	0	0	CPCS 351
14	CPCS	457	Software Engineering	3	3	0	0	CPCS 351
15	CPCS	462	Operating Systems 2	3	3	0	0	CPCS 361
16	CPCS	463	Computing Systems Security	3	3	0	0	CPCS 361, 371
17	CPCS	464	Dependable Computing	3	3	0	0	CPCS 463
18	CPCS	465	Performance and Modeling of Computing Systems	3	3	0	0	CPCS 361, 324
19	CPCS	466	Systems Programming	3	3	0	0	CPCS 361
20	CPCS	473	Computer Networks Practice	3	3	0	0	CPCS 371
21	CPCS	474	TCP/IP & Web	3	3	0	0	CPCS 371
22	CPCS	482	Multimedia & User Interface Design	3	3	0	0	CPCS 381
23	CPCS	494	Special/Selected Topics	3	3	0	0	
			Total	**69**	**69**	**2**	**0**	

Course Descriptions:

CPCS 202: Programming I

The course aims at teaching students the principles and concepts of programming. How to write programs to solve simple problems. How to use programming to solve problems and scientific issues and process.

CPCS 203: Programming II

The course aims at teaching students the principles and concepts of object-oriented programming. How to use object-oriented programming to solve problems and scientific and practical issues in advanced applications.

Prerequisites: CPCS 202

CPCS 204: Data Structures I

The course aims to enable the student to understand in-depth data structures and to know how to apply them to resolve practical issues. It also aims at teaching students how to analyze algorithms performance.

Prerequisites: CPCS 203

STAT 210 - Probability Theory

The course aims to introduce students to concepts of probability theory and how to use them in decision-making with the study of random variables and probability distributions and their characteristics, as well as the study of simulation techniques and training the student on the use of statistical software packages.

Prerequisites: STAT 101

CPCS 214: Computer Organization and Architecture 1

This course aims to give the student a solid background in the basics of contemporary computers. In particular, the computer science's student must understand the interactions between his programs and the machine.

Prerequisites: CPCS 211

CPCS 222: Discrete Structures I

This course aims to give students the basic concepts of discrete mathematics that enables them to understand the necessary foundations for the study of computer systems and software development.

CPCS 223: Analysis and Design of Algorithms

This course aims to teach the student how to find solutions using algorithms The focus will be on the different methods to analyze algorithms and design solutions.

Prerequisites: CPCS 204

CPCS 241: Database 1

This course aims to give students an introduction to the basic concepts of data modeling and database design principles. This course fo-

Department of

Computer Science

cuses on concepts and methods of building relational models and OO relational models. It also focuses on understanding database models and matching the data with these models. The course covers also the basic rules for the Structured Query Language.

Prerequisites: CPCS 204

CPCS 301: Programming Languages

This course aims to introduce the student to different programming languages in addition to brief him on a comparative study of them that takes into account the philosophical aspect of the language characteristics, the design, the structural structures and others. It also focuses on the ideas that are not available in traditional languages.

Prerequisites: CPCS 204, CPCS 222

CPCS 351 - Software Engineering 1

This course aims to teach students the basic concepts and the required skills for software engineering. It covers the concepts and needed skills to build applications. The course displays the latest methods, skills and techniques used in software engineering, derived from actual practice. The course focuses in particular on collective action in building software and skills to work as part of a team.

Prerequisites: CPCS 204

CPCS 324 - Algorithms and Data Structures 2

This is the second course on the subject of algorithms and data structures. It aims to introduce the student and deepening the concepts for the students of the specialization through the study of some advanced structural compositions, such as the balanced tree and topics related to algorithms such as their degree of complexity.

Prerequisites: CPCS 222, CPCS 223

CPCS 331: Artificial Intelligence 1

This course aims to introduce students to topics related to artificial intelligence. It presents also systems that show some sort of intelligent behaviors such as vision and elicitation. A programming language related to the course is taught.

Prerequisites: CPCS 204, CPCS 223

CPCS 381: Human-Computer Interaction 1

This course aims to introduce students to the basics of the interaction between computer and human through the study of topics related to the course.

Prerequisites: CPCS 204

CPCS 391: Computer Graphics 1

This course aims to introduce students to topics related to computer graphics such as its basics and the techniques used. The student performs many of the applications that show the student's understanding of the course subjects.

Prerequisites: CPCS 204, CPCS 212

CPCS 361 – Operating Systems 1

This course aims to introduce students to the basic concepts, structures and algorithms that work as intermediary software between the user and the hardware or the so-called operating systems. It covers the basic concepts of modern operating systems, their methods of design and the comparison of their methods of work in terms of efficiency and reliability. The course compares also the algorithms used in building operating systems in terms of speed and the use of space.

Prerequisites: CPCS 214, CPCS 204

CPCS 371 – Computer Networks 1

This course aims to acquaint students with topics covering areas ranging from the transfer of data to the application software for computer networks.

Prerequisites: CPCS 214

CPCS 353 – Software Eng. Practices

This course aims to give students an idea of how to implement software engineering projects and this include practical elements in a large and specialized way.

Prerequisites: CPCS 351

CPCS 372 – Computer Networks 2

This course aims to introduce students to techniques and advanced topics in systems and networking technology as well as the successive developments in this area.

Prerequisites: CPCS 371

CPCS 212 – Applied Math for Computing 1

The course aims to introduce students to the basic concepts of applied mathematics used in computer science by identifying partial differentiation, multiple integrals, Applied Linear Algebra and by training the student to use software packages and write programs related to the previous applications.

Prerequisites: MATH 202

STAT 352 – Applied Probability and Random Processes

This applied course aims to introduce students to the basic concepts of applied probability and random processing with a focus on computer applications. The course aims to enable the student to perform a standard analysis and study of computer systems' effectiveness and performance.

Prerequisites: STAT 210

CPCS 403 – Internet Application Programming

This course aims to introduce students to the basics of software applications relevant to the Internet.

Prerequisites: CPCS 371, CPCS 324

CPCS 404 – Component-Based Computing

This course aims to introduce students to programming based on software components and how to deal with it.

Prerequisites: CPCS 351

CPCS 405 – Software Technology Topics

This course aims to introduce students to modern topic related to software technology.

Prerequisites: CPCS 351

CPCS 412 – Computer Architecture 2

This course aims to introduce students to methods of modern computer architecture such as the advanced code design and the cascading flow system - advanced methods in data processing.

Prerequisites: CPCS 341

CPCS 414 – High Performance Computing

This course aims to introduce students to the basic idea for high-

performance computers as well as knowledge of the structure details of high performance systems.
Prerequisites: CPCS 361

CPCS 424 – Theory of Computation
This course aims to introduce students to the idea of the computers theory, as well as an introduction to the idea of the mechanism, the language, the rules and all their types.
Prerequisites: CPCS 212, CPCS 222

CPCS 425 – Information Security
This course aims students to the basics of information security and related topics.
Prerequisites: CPCS 361, CPCS 371

CPCS 432 – Artificial Intelligence 2
This course aims to introduce students to advanced topics related to artificial intelligence, and complete the already learned programming language related to the course.
Prerequisites: CPCS 331

CPCS 433 – Artificial Intelligence Topics
This course aims to introduce students to modern topics to inform them on the latest updates in this area.
Prerequisites: CPCS 331

CPCS 442 – Database 2
This course aims to introduce students to advance topics in databases.
Prerequisites: CPCS 241

CPCS 457 – Software Engineering Theory
This course aims to introduce students to the importance of software engineering, particularly with regard to software engineering projects in the light of modern theories in this area.
Prerequisites: CPCS 351

CPCS 454 – Object-Oriented Analysis and Design
This course aims to introduce students to the objec-oriented essence in systems and the derived benefits from using this approach.
Prerequisites: CPCS 351

CPCS 462 – Operating Systems 2
This course aims to introduce students to some of the modern alternatives to processes and operating models such as distributed and parallel processes - real-time processes.
Prerequisites: CPCS 361

CPCS 463 – Computing Systems Security
This course aims to introduce students to the basics of the computer systems security and the risks that the system faces.
Prerequisites: CPCS 361, CPCS 371

CPCS 464 – Dependable Computing
This course aims to acquaint students with high reliability systems used in critical applications that do not bear the errors or the system's collapse.
Prerequisites: CPCS 463

CPCS 465 – Performance and Modeling of Comp. System.
This course aims to introduce students to the basics of methods to performance measuring and computer systems modeling, which is considered as an important basis for the majority of Computer Science.
Prerequisites: CPCS 324, CPCS 361

CPCS 466 – Systems Programming
This course aims to introduce students to how to design, operate and develop software systems.
Prerequisites: CPCS 361

CPCS 473 – Computer Network Practice
This course aims to introduce students to topics related to the practical bases of computer networks, giving the student the possibility of understanding the networks components.
Prerequisites: CPCS 371

CPCS 474 – TCP/IP and Web Networking
This course aims to introduce students to the basics of TCP / IP networks and the Web so that the student will be a specialist in the TCP / IP networks protocols and the Web after studying this course.
Prerequisites: CPCS 371

CPCS 482 – Multimedia and User Interface Design
This course aims to introduce students to ideas on multimedia and use them in the design of interaction interfaces between the computer and the user.
Prerequisites: CPCS 381

CPCS 494 – Special Selected Topics
This course gives the student a way to select topics that are not included in the previous courses, already studied, especially new and emerging topics in computer science.

CPCS 498 – Graduation Project-1
This course aims to give students opportunities to demonstrate the skills they gained during their study of the curriculum courses, and then show these skills through the submission of a proposal for the graduation project. A link should be done between this course and the selected topics where the student chooses the graduation project according to the selected topics content.
Prerequisites: Graduation Year

CPCS 499 – Graduation Project-2
This course aims at implementing what has been proposed in the previous course. The students are required to submit a report and presentation of the graduation project.
Prerequisites: CPCS 498

Department of

Information Systems

Department Contact:

Chairman's Office
Tel : 024234030 Ext:103 Fax: 024234030 Ext: 101
Email : *fcitr@kau.edu.sa*
Web Site: *http://fcitr.kau.edu.sa/*

History:

The IS department was established in 2009 and was activated in the second semester of the academic year 2009-2010.

Vision:

To be a distinct department in the field of Information Sciences, conducting quality scientific research and contributing the Saudi community by providing training and advisory services.

Mission:

To provide advanced and distinguished curricula that will produce highly qualified students capable of serving their country, conducting high-level scientific research and providing training and advisory services to serve the community.

Department Requirement:

To earn a degree in Computers & Information Technology, students must complete a total of140 credit hours distributed as follows:

- 26 credit hours of University requirements,
- 15 credit hours of preparatory year requirements,
- 24 credit hours of general faculty courses
- 9 credit hours for elective courses
- 66 credit hours of departmental courses
- 57 credit hours for mandatory courses
- 9 credit hours for elective courses

Students must complete 66 credit hours of core departmental courses according to specialization. Department Core Courses Credit Hours 57

No.	Course Code:	Course No.	Course Title	Credit	HOURS			Prerequisite
					Theory	Lab	Prac	
1	BUS	230	Introduction to Modern Management	2	2	0	0	
2	BUS	232	Modern Business Models	2	2	0	0	BUS 230
3	BUS	233	Organizational Behavior	2	2	0	0	BUS 230
4	ACCT	333	Principles of Corporate Accounting	2	2	0	1	BUS 230
5	CPIS	210	Computer Architecture & Organization	3	3	1	1	CPCS 202
6	CPIS	220	Principles of Information Systems	3	3	1	1	CPCS 202
7	CPIS	222	Principles of Operating Systems	3	3	1	1	CPIS 210
8	CPIS	240	Database Management Systems I	3	3	1	1	CPCS 204
9	CPIS	250	Software Engineering	3	3	1	1	CPCS 204
10	CPIS	312	Information & Computer Security	3	3	1	1	CPIS 370
11	CPIS	323	Summer(workplace) Training I	0	0	0	3	
12	CPIS	342	Data Warehousing and Mining	3	3	1	1	CPIS 240
13	CPIS	351	IS Analysis & Architecture Design	3	3	0	2	CPIS 250, BUS 232
14	CPIS	352	IS Applications Design & Development	3	3	0	2	CPIS 351
15	CPIS	354	Principles of Human Computer Interaction	3	3	1	1	CPIS 250
16	CPIS	357	Software Quality and Testing	3	3	0	1	CPIS 250, CPIS 334
17	CPIS	358	Internet Applications & Web Programming	3	3	1	2	CPIS 250
18	CPIS	370	Fundamentals of Data Networks	3	3	1	1	CPIS 222
19	CPIS	380	Introduction to E-Business Systems	3	3	1	1	CPIS 351, CPIS 358
20	CPIS	434	IS Strategies and Policies	3	3	0	1	CPIS 220
21	CPIS	498	Senior Project 1	1	1	0	0	Senior Level
22	CPIS	499	Senior Project 2	3	2	2	0	CPIS 498
			Total	**57**	**56**	**13**	**22**	

Department of

Information Systems

Elective Courses: Credit Hours 9 Students must select 9 credit hours from the following elective courses.

No.	Course Code:	Course No.	Course Title	Credit	HOURS			Prerequisite
					Theory	Lab	Prac	
1	STAT	217	Introduction to Quantitative Analysis	3	3	1	0	STAT 210
2	ACCP	334	Business Analysis	3	3	1	0	BUS 232
3	STAT	260	Operations Research	3	3	1	0	STAT 210
4	CPIS	320	Decision Support Systems & Theory	3	3	1	2	CPIS 220
5	CPIS	330	Advanced Project & Quality Management	3	3	1	1	CPIS 334, CPIS 357
6	CPIS	340	Database Management Systems II	3	3	1	0	CPIS 240
7	CPIS	350	Systems Design Patterns	3	3	1	0	CPIS 250
8	CPIS	356	SW Metrics and Economics	3	3	1	0	CPIS 250
9	CPIS	360	Advanced Information Systems Technologies	3	3	2	1	CPIS 240
10	CPIS	363	Intelligent Systems	3	3	1	0	CPIS 250
11	CPIS	382	Development of E-Systems & Interface Design	3	3	2	1	CPIS 350,351,354
12	CPIS	420	Techniques of Decision Support Systems	3	3	1	2	CPIS 320
13	CPIS	424	Modeling & Simulations	3	3	1	2	CPIS 250
14	CPIS	430	IS Change Management	3	3	0	1	CPIS 330
15	CPIS	444	Knowledge Management	3	3	1	0	CPIS 240
16	CPIS	461	Business Information Systems	3	3	1	1	CPIS 360
17	CPIS	462	Information Systems Applications	3	3	1	1	CPIS 461
18	CPIS	464	Distributed Systems	3	3	0	2	CPIS 370
19	CPIS	465	Geographical Information Systems	3	3	1	0	CPIS 220
20	CPIS	466	Office Automation Systems	3	3	1	0	BUS 232, CPIS 351
21	CPIS	472	Data Networks Design and Management	3	3	1	0	CPIS 370
22	CPIS	483	E-Systems Applications	3	3	1	1	CPIS 382
23	CPIS	486	E-Business Strategies	3	3	0	1	BUS 232, CPIS 483
24	CPIS	490	Selected Topics in IS	3	3	1	0	Department Approval
			Total	**72**	**72**	**23**	**16**	

Course Descriptions:

CPIS 210: Computer Architecture and Organization

This course aims to introduce students to the internal construction of computers. It defines and introduces the key internal parts that make up the computer and how to link them in terms of compatibility and control. Topics also include an introduction to logic and digital design.

Prerequisites: CPCS 202

CPIS 220: Principles of Information Systems

This course aims to give students an introduction to the basic concepts of information systems within the commercial and administrative frameworks. It describes and covers the basic concepts of design, construction and use of information systems. Topics include: software and hardware components of information systems, basics of the decision-making theory and its methods.

Prerequisites: CPCS 202

CPIS 222: Principles of Operating Systems

This course presents the basic concepts, structures and algorithms that work as intermediary programs between the user and the hardware, known as operating systems. It covers the basic concepts of modern operating systems, how they are designed and compares between their efficiency and reliability.

Prerequisites: CPCS 204, CPIS 210

CPIS 240: Database Management Systems I

This course gives an introduction to the concepts of data modeling and database design principles. It focuses on the methods of building models and the entities relationships, the databases decision models and data matching, and the basic rules of structural query language.

Prerequisites: CPCS 204

CPIS 250: Software Engineering

This course aims to teach students the basic concepts and the required skills for software engineering. It covers the concepts and skills that are required to build large-scale applications which require long periods of time. The course presents the latest skills and techniques used in software engineering, derived from the actual practice of the field as well as the latest results of the specialized research centers, focusing in particular on collective action in building software and team-work skills.

Prerequisites: CPCS 204

CPIS 312: Information and Computer Security

This course aims to equip students with scientific and mathematical concepts, and various skills related to information security. It covers the subject of information and software systems security from multiple aspects, including penetration and encryption, mathematical foundations of cryptography and its algorithms, and keys distribution methods. It also deals with data security mechanisms in computer networks and secure access methods using passwords.

Prerequisites: CPIS 370

Department of

Information Systems

CPIS 323: Summer (workplace) Training I
This course introduces students to real work environments related to their specialization and provides them with the opportunity to work on actual and practical problems in the field of computing. Students should submit a written report about their experience in the workplace. Evaluation will be done jointly by a faculty member and a workplace supervisor.

CPIS 342: Data Warehousing and Mining
This course aims to equip students with the basic concepts and skills necessary to build and use data warehouses. The course focuses on how to use data warehouses to support decision-making process, data warehousing structure and the necessary infrastructure to build these warehouses. It also explains the various ways and methods of extracting and analyzing data to support the decision-making process.
Prerequisites: CPIS 204

CPIS 351: IS Analysis and Architecture Design
The course aims to introduce students to the methods used in the analysis of information systems, and ways of identifying and describing their needs in order to automate and establish its computer systems. The course covers several automated system techniques; object-oriented analysis, design techniques, and structured analysis methods.
Prerequisites: CPIS 250, BUS 232

CPIS 352: IS Applications Design and Development
This course focuses on how to build and maintain applications systems using user interfaces systems. It presents ways of developing software and needed databases to cover the necessary basics needed by the labor market.
Prerequisites: CPIS 351

CPIS 354: Principles of Human Computer Interaction
This course is an introduction to scientific and applied concepts of the communication basics between man and computer. It focuses on the engineering and programming foundations to build various kinds of applications interfaces, and explains the concepts related to the methods of selection and comparison of graphical units in terms of functions and ease of use, and links between applications interfaces design and how the human mind works.
Prerequisites: CPIS 250

CPIS 357: Software Quality and Testing
This course aims to emphasize the importance of quality in the production and development of information and to confirm the basic concepts of program quality at all stages of the development process starting from the planning and analysis stage to the design, programming, installation, testing and maintenance phases. The course reviews quality systems standards in the software industry and information systems such as: CMM & IEEE to ensure that the standard metrics are used in the software production process itself, while ensuring its continued evolution.
Prerequisites: CPIS 250, CPIS 334

CPIS 358: Internet Applications and Web Programming
This course aims to equip students with the necessary knowledge to design and implement software that works on the internet. It focuses on the techniques that are specifically used for internet software and how to employ them in order to achieve high performance and efficiency. The basic aim is to introduce the technical characteristics of the various protocols that are Internet-related, and the various structures to build applications on the Internet and methods to organize and secure business operations on the networks.
Prerequisites: CPIS 250

CPIS 370: Fundamentals of Data Networks
This course covers the basic theoretical concepts and technical aspects of data networks. It includes data transfer topics ranging from the lower levels related to the hardware and internetworking, up to the higher levels of data transfer and application protocols. The course deals also with the scientific theories which constitute the basics of modern digital communication technology.
Prerequisites: CPIS 222

CPIS 380: Introduction to E-Business Systems
This course aims to equip students with the basic concepts and skills needed to build e-business applications. It focuses on the transfer of institutions from traditional work to electronic work. It explains the fundamental differences between doing business through traditional and electronic methods and how to transform traditional methods to modern methods using new models in building e-business.
Prerequisites: CPIS 351, CPIS 358

CPIS 434: IS Strategies and Policies
This course aims to define the strategic framework concept that permits the evaluation and use of modern technology in order to serve the general goals of the institution. It deals with the three strategic planning nooks, their relationships and their mutual effects, and explains the strategies fundamental to administrate and use the information technology and how to put long and short term plans in order to get technology and administrate it.
Prerequisites: CPIS 220

CPIS 498: Senior Project-1
The course is designed to give final year students the chance to integrate all the knowledge acquired during their studies and to demonstrate this through the submission and presentation of a proposal and a project report. Students should choose a graduation project subject related to the ideas presented in the Selected Topics course.
Prerequisites: Senior Level

CPIS 499: Senior Project-2
The course is designed to fulfill the plan approved in CPIS 498. Students should submit a written report and an oral presentation of their graduation project.
Prerequisites: CPIS 498

CPIS 320: Decision Support Systems and Theory
This course aims to provide students with the required skills and knowledge of the different models and methods used in decision analysis in order to make logical decisions that are based on mathematical concepts in cases of uncertainty and lack of infor-

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mation. It also provides students with the mathematical framework that can be used to build a set of statistical algorithms that help the decision maker. An overview of decision theories, the theory of usefulness and the theory of players, and their usage and applications.

Prerequisites: CPIS 220

CPIS 330: Advanced Project & Quality Management

This course is one of the technical projects management. It provides students with the required skills for planning, implementing, managing, controlling and ending large information systems projects, and ensuring the quality of projects under construction and after completion.

Prerequisites: CPIS 334, CPIS 357

CPIS 340: Database Management Systems II

This course provides students with advanced concepts in database management systems. It focuses on advanced practical skills in database design, usage and improvement. The course presents the concepts and the basics of object and distributed databases, and its building structures, and provides students with the different mechanisms to improve the database performance and to solve the synchronization problems.

Prerequisites: CPIS 240

CPIS 350: Systems Design Patterns

This course aims to provide students with the basics of large software development. It introduces the frameworks, patterns, and procedures for developing component based systems.

Prerequisites: CPIS 250

CPIS 356: SW Metrics and Economics

This course focuses on the process of building software successfully. Three main factors are emphasized: software technology, economic factors and human relations. The course covers a set of important concepts that have a direct impact on the software economics such as the associated operations and procedures, and the software cost estimation with emphasis on the different measurement criteria for each program and production operations.

Prerequisites: CPIS 250

CPIS 360: Advanced Information Systems Technologies

This course aims to equip students with the basic concepts and skills necessary for the use and application of advanced technologies in building and developing modern information systems. It focuses on three types of techniques: object-oriented databases, distributed databases and data warehouses, and how to search for data within them.

Prerequisites: CPIS 240

CPIS 363: Intelligent Systems

This course teaches students how to obtain information and how to use it through intelligent systems that are capable of providing factors of success and economic superiority. The course covers the required concepts, methods and techniques that help students develop intelligent systems which can assist commercial operations.

Prerequisites: CPIS 250

CPIS 382: Development of E-Systems & Interface Design

This course presents the principles of interactive Web-site techniques as an advanced technology for business websites development and publishing, which enables businesses to implement smart deals and to shift to electronic work on the Internet. Topics include: electronic web sites information management, languages, conventions, applications, tools, collaboration and agencies.

Prerequisites: CPIS 354, CPIS 350, CPIS 351

CPIS 420: Techniques of Decision Support Systems

This course provides students with the required skills for using decision support techniques, and with the mathematical background that enables them to envision operational problems, model them in a mathematical way and make use of the methods used in the process of decision-making, such as pyramidal analysis of the decisions, time series, etc. to support the optimal decision making. The course gives an overview of the software packages that support decision-making, and how to use them in practical decision-making processes.

Prerequisites: CPIS 320

CPIS 424: Modeling & Simulations

This course outlines the different models of practical problems, and helps students understand and absorb the capacity of modeling and simulation in the perception of all systems scenarios. The course covers methods of building simplified models of a Sporadic system incidents, and numbers and random variables according to a certain probability distribution function, and methods of simulating known systems, such as queues and inventory levels.

Prerequisites: CPIS 250

CPIS 424: Modeling and Simulations

This course outlines the different models of practical problems, and helps students understand and absorb the capacity of modeling and simulation in the perception of all systems scenarios. The course covers methods of building simplified models of a Sporadic system incidents, and numbers and random variables according to a certain probability distribution function, and methods of simulating known systems, such as queues and inventory levels.

Prerequisites: CPIS 250

CPIS 430: IS Change Management

This course provides students with the practical skills needed to change and develop the information systems, as well as with the scientific methods of creating an organization under the management of sophisticated information systems. It will highlight the administrative steps in information systems, and will enable students to develop and restructure information systems in any sector, and to understand and manage the change process.

Prerequisites: CPIS 330

CPIS 444: Knowledge Management

This course aims to equip students with the basic concepts of knowledge management, and to provide them with the theoretical and scientific background, and practical skills required managing and dealing with knowledge. The course addresses the knowledge management groups, its characteristics and the applied model used in knowledge management, and explains the methods to be

used in knowledge gathering, indexing and distribution to serve the overall objectives of the organization.

Prerequisites: CPIS 240

CPIS 461: Business Information Systems

The course aims to give students the spirit of initiative in how to use technology to support business, and how to use these technologies to support these initiatives. It enhances student performance in the management of technology as a source of strength and support to the company. Topics include the internal rules of information systems, and the role played by information systems in the integration of the different institution sectors through a coherent set of administrative processes.

Prerequisites: **CPIS 360**

CPIS 462: Information Systems Applications

This course is one of the advanced courses in information systems. One applied information system is selected by the department.

Prerequisites: **CPIS 461**

CPIS 464: Distributed Systems

This course covers the basic and theoretical concepts of distributed systems. It presents the characteristics and advantages of distributed systems and how to use them technically in order to serve institutions and processes. It covers the required technical depth for the design, development and protection of distributed systems.

Prerequisites: **CPIS 370**

CPIS 465: Geographical Information Systems

This course aims to introduce students to the concept and principles of Geographic Information Systems (GIS), which include many areas such as the identification of GIS technology and how to evaluate it, and the relationships between geographic and non-geographic environments. An overview of the GIS programming tools and the material means.

Prerequisites: **CPIS 220**

CPIS 466: Office Automation Systems

The course covers the basic concepts and methods of automating office work, focusing on methods of planning for office automation, and ways to implement these plans by the selection of appropriate techniques, equipments, communication equipments and training of human resources. It also deals with technical and management concepts of preparing the transition to office automation, and the importance of the human factor in the transformation process.

Prerequisites: **BUS 232, CPIS 351**

CPIS 472: Data Networks Design and Management

This course gives the practical and applied concepts that are necessary for design, administration and use of data networks. It deals with technical concepts related to designing data networks, and the administrative aspects of management and regulation of use of data networks. Students are provided with the technical skills required for comparison between the different techniques in the field of data networks and the ability to define the selection criteria between the different networks designs along with the ability to determine the appropriate alternatives.

Prerequisites: **CPIS 370**

CPIS 483: E-Systems Applications

This course aims to introduce students to the various applications of electronic systems on the Web and the role played by these systems in the development of institutions and communities. Systems include: distance education, e-government, logistics and finance systems, e-marketing, and so on. An overview of the basic components, the requirements analysis and the specifications of these systems along with a presentation of some design, implementation and management methods.

Prerequisites: **CPIS 382**

CPIS 486 Course Title E-Business Strategies

This course focuses on how to develop and implement information systems strategies and infrastructure for new models of work based on the Internet. An introduction to the concepts and strategic issues surrounding information warfare, and management of organizational knowledge, and the information economy of the virtual organizations. Topics include: planning and managing virtual organizations, the role of information and communication technology to support virtual organizations and virtual regulation, business models for e-business.

Prerequisites: **BUS 232, CPIS 483**

CPIS 490 Course Title Selected Topics in IS

Selected topics from the field of information systems. The overall objective is to familiarize students with current issues in the field. Topics are selected and approved by the department.

Prerequisites: **Department approval**

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Department Contact:

Chairman's Office
Tel: 024234030 Ext: 107 Fax: 024234030 Ext: 101
Email: *fcitr@kau.edu.sa*
Web Site: *http://fcitr.kau.edu.sa/*

History:

The department was established in 2009.

Vision:

To be a distinct department in the field of information technology and contribute to the Saudi community by providing training and advisory services.

Mission:

To provide advanced and distinguished educational curricula, and to graduate highly qualified students that are able to serve their country, perform high-level scientific research and provide training and advisory services to serve the community

Department Requirement:

To earn a degree in Computers & Information Technology, students must complete a total of140 credit hours distributed as follows:

- 26 credit hours of preparatory year requirements,
- 15 credit hours of preparatory year requirements,
- 24 credit hours of general faculty courses
- 9 credit hours for elective courses
- 66 credit hours of departmental courses
- 57 credit hours for mandatory courses
- 9 credit hours for elective courses

Department Study Plan Students study 66 credit hours of courses according to specialization. Study Requirements Plan for Department of DEPARTMENT OF INFORMATION TECHNOLOGY Track - A: Department Core Courses Credit Hours 57

No.	Course Code:	Course No.	Course Title	Credit	HOURS			Prerequisite
					Theory	Lab	Prac	
1	CPIT	210	Computer Architecture	3	3	1	0	CPCS 202
2	CPIT	220	Introduction to IT	3	3	1	0	CPIT 201
3	CPIT	240	Databases I	3	3	1	0	CPCS 204
4	CPIT	250	System Analysis & Design	3	3	1	0	CPCS 204
5	CPIT	251	Software Engineering I	3	3	1	0	CPIT 250
6	CPIT	252	Software Design Patterns	3	3	1	0	CPIT 251
7	CPIT	260	Operating Systems	3	3	1	0	CPCS 204, CPIT 210
8	CPIT	280	Human-Computer Interaction	3	3	1	0	CPIT 250
9	CPIT	285	Computer Graphics	3	3	1	0	CPCS 204
10	CPIT	305	Intelligent Systems	3	3	1	0	CPCS 204
11	CPIT	323	Summer (workplace) Training I	0	0	0	3	
12	CPIT	330	IT Issues and Management	3	3	0	0	CPIT 220, CPIT 250
13	CPIT	345	Database Administration	3	3	1	0	CPIT 240
14	CPIT	370	Computer Networks	3	3	1	0	CPIT 260
15	CPIT	380	Multimedia Technologies	3	3	1	0	CPIT 285
16	CPIT	405	Internet Applications	3	3	1	0	CPIT 370, CPIT 252
17	CPIT	425	Information Security	3	3	1	0	CPIT 370
18	CPIT	435	Needs Assessment and Technology Evaluation	2	2	1	0	CPIT 220, CPIT 250
19	CPIT	470	Networks Administration	3	3	1	0	CPIT 370
20	CPIT	498	Senior Project 1	1	1	0	0	Senior Level
21	CPIT	499	Senior Project 2	3	2	2	0	CPIT 498
			Total	**57**	**56**	**19**	**3**	

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Elective Core Courses Credit Hours 9 Students must select 9 credit hours from the following elective courses.

No.	Course Code:	Course No.	Course Title	Credit	HOURS			Prerequisite
					Theory	Lab	Prac	
1	CPIT	100	Compute Skills	3	1	3	0	
2	CPIT	340	Database II	3	3	1	0	CPIT 240
3	CPIT	375	Data Network Design and Evaluation	3	3	1	0	CPIT 370
4	CPIT	430	Decision Support Systems	3	3	1	0	CPIT 330
5	CPIT	436	E-Business Technology	3	3	1	0	CPIT 435
6	CPIT	440	Data Mining and Warehousing	3	3	1	0	CPIT 340
7	CPIT	445	Knowledge Engineering	3	3	1	0	CPIT 440
8	CPIT	455	Software Engineering II	3	3	1	0	CPIT 251
9	CPIT	456	Software Economics	3	3	1	0	CPIT 251
10	CPIT	475	Wireless Data Networks	3	3	1	0	CPIT 370
11	CPIT	480	Fundamentals of Instructional Technologies	3	3	1	0	CPIT 380
12	CPIT	485	User-Centered System Design	3	3	1	0	CPIT 280
13	CPIT	490	Selected Topics in IT	3	3	1	0	
			Total	**39**	**37**	**15**	**0**	

Course Descriptions:

CPIT 100: Computer Skills

The course covers the fundamental skills required to operate and use the PC.

CPIT 201: Introduction to computing

This course teaches the binary numeric systems and data representation. Topics include: the internal components of the computer and how they function, Basics of algorithms, programming and operating systems, basics of databases and networking.

CPIT 210: Computer Architecture

The course describes the internal architecture of the PCs, their main components and the way they are integrated and controlled.

Prerequisites: CPCS 202

CPIT 220: Introduction to IT

This course teaches the fundamentals of information technology and the software used in IT solutions.

Prerequisites: CPIT 201

CPIT 323: Summer (Workplace) Training I

This course introduces students to real work environments and actual practical problems in the field of the computing. Students must submit a written report about their experience in the workplace . Evaluation of student performance will be done jointly by a faculty member and a workplace supervisor.

CPIT 240: Databases I

This course is an introduction to the concepts of data modeling and database design principles. It focuses on the methods of building models and the entities relationships, databases decision models and data matching, and the basic rules of structural query language.

Prerequisites: CPCS 204

CPIT 250: System Analysis & Design

This course teaches and trains students how to analyze and design information systems. It covers the tools that are used in the analysis and design process of complete electronic systems using scientific methods.

Prerequisites: CPCS 204

CPIT 251: Software Engineering I

This course introduces students to software engineering methods. It covers the concepts of software engineering such as systems requirements, design, and analysis. It also presents the different forms of software development like sequential and rapid development.

Prerequisites: CPIT 250

CPIT 252: Software Design Patterns

This course introduces students to the foundations of large scale software architecture, and defines frameworks, patterns and ways of developing and establishing systems based on components.

Prerequisites: CPIT 251

CPIT 260: Operating Systems

This course presents software that work as intermediary programs between the user and the hardware, known as operating systems. It covers the basic concepts of modern operating systems, how they are designed, the way they work, and their efficiency and reliability. It compares between the techniques used inside the operating systems in terms of time and space complexity.

Prerequisites: CPIT 210 CPCS 204

CPIT 285 : Computer Graphics

This course aims to introduce students to computer graphics techniques and algorithms, and to train them on how to apply them in practice.

Prerequisites: CPCS 204

CPIT 280: Human-Computer Interaction

This course introduces students to the fundamentals of human / computer interaction and the factors that affect the usage and usability of software.

Prerequisites: CPIT 250

CPIT 305: Advanced Programming

This course teaches advanced techniques in programming and software solutions. It covers how to build applications for various operating environments through the windows systems, and presents different programming methods to deal with databases, multithreading programming, and exception.

Prerequisites: CPCS 204

CPIT 330: IT Planning & Designing

This course teaches the necessary thinking habits for developing IT projects. It starts from the preliminary planning and design of the information technology aspects, up to the final stage of design, development, implementation, and administration of the entire project. Students learn how to evaluate and criticize all

aspects of successful and unsuccessful projects.
Prerequisites: CPIT 220 CPIT 250

CPIT 340: Database II
This course provides students with advanced concepts in database management systems. It covers advanced practical skills in data base design, usage, improved performance and security. It also presents the concepts of object and distributed database and its building structures as well as the different mechanisms to improve database performance and solve synchronization problems.
Prerequisites: CPIT 240

CPIT 345: Database Administration
This course covers a wide range of topics in Database Administration. Students will have hands-on training in installation, configuration, administration, performance, security, backup and recovery, and enterprise services of databases..
Prerequisites: CPIT 240

CPIT 370: Computer Networks
This course covers the basics theoretical concepts and technical aspects of data networks. It includes data transfer topics ranging from the lower levels related to the hardware and internetworking, up to the higher levels of data transfer and application protocols..
Prerequisites: CPIT 260

CPIT 375: Data Network Design and Evaluation
This course covers the concepts and practical skills to design and evaluate data networks. It deals with the technical concepts related to the data networks design as well as managerial aspects. The course also equips students with the technical skills needed to evaluate different network technologies and enables them to compare and contrast different alternatives for network designs.
Prerequisites: CPIT 370

CPIT 380: Multimedia Technologies
This course teaches the basics of multimedia system components. It covers the techniques and tools of designing and implementing multimedia presentations.
Prerequisites: CPIT 285

CPIT 405: Internet Applications
This course introduces the basic infrastructure of the Internet. It provides students with the necessary skills needed to implement and use Internet applications.
Prerequisites: CPIT 370 CPIT 252

CPIT 425: Information Security
This course introduces the principles of information security, risks, weakness and data protection using encryption/decryption, internet and network security..
Prerequisites: CPIT 370

CPIT 430: Decision Support Systems
This course focuses on the scientific concept of decision support systems and components. It provides knowledge of the decision-making models under different circumstances, and identifies the intelligent systems and their role in the process of decision support. It also covers how to deal with crises and disasters using decision support systems.
Prerequisites: CPIT 330

CPIT 435: Needs Assessment & Technology
Building students skills in two interrelated areas: needs and technology evaluation, and how to meet the requirements by using appropriate techniques.
Prerequisites: CPIT 220, CPIT 250

CPIT 436: E-Business Technology
This course introduces business technology and the use of computer techniques in updating business processes so as to improve performance and reduce costs.
Prerequisites: CPIT 435

CPIT 440: Data Mining & Warehousing
This course introduces the principles of data mining including database systems, artificial intelligence, data retrieval and statistics. It also covers the necessary tools for knowledge exploration and data storage.
Prerequisites: CPIT 340

CPIT 445: Knowledge Engineering
This course familiarizes students with the different knowledge extraction methods and their representation techniques as well as knowledge engineering. Topics include the different basic artificial intelligence theories.
Prerequisites: CPIT 440

CPIT 455: Software Engineering II
This course teaches advanced concepts in software engineering, and covers the methods of ensuring and certification in software engineering. It deals with advanced concepts to be tested in the software, and covers the scientific methods of estimating the cost in building software, quality control, and development operations.
Prerequisites: CPIT 251

CPIT 456: SW Economics
This course covers the basic factors of building successful software including:
- Developed software
- Economic factors and
- Human relations.

The course also covers the concept of building software processes and procedures associated with software development and cost calculations.
Prerequisites: CPIT 251

CPIT 470: Networks Administration
This course teaches the tools of networks management and maintenance, running in modern organizations.
Prerequisites: CPIT 370

CPIT 475: Wireless Data Networks
This course introduces the basics of wireless networks, modern systems and advanced technology used in wireless networks and mobile communication networks..
Prerequisites: CPIT 370

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CPIT 480: Fundamentals of Instructional Technology
This course teaches student how to plan, organize and develop educational materials.
It uses the instructions system design model (ISD) to analyze, design, deliver and evaluate instructions.
Prerequisites: CPIT 380

CPIT 485: User-Centered System Design
This course aims to introduce students to computer graphics techniques and algorithms, and to train them on how to apply them in practice.
Prerequisites: CPIT 280

CPIT 490: Selected Topics in IT
The aim of this course is to introduce students to new approaches not included in curriculum. The selected topics meet two main factors:
- The topic adds new and up-to-date knowledge in the Computer Sciences field.
- The topic reflects the instructors' experience in the field from theoretical and practical aspects.

CPIT 498: Graduation Project-1
This course gives students the opportunity to demonstrate the knowledge and the skills they gained during their study by submitting a proposal and presenting a report of their graduation project. Topics chosen by the students for their projects must be related to their chosen specializations.
Prerequisites: Final Year

CPIT 499 Course Title Graduation Project-2
This course aims to execute what was presented in the previous Graduation Project 1. Students must successfully present their graduation project.
Prerequisites: CPIT 498

FACULTY MEMBERS

Associate Professors

Abdul Rahman Ahmad
Industrial Computing
1993, Loughborough University of Technology,UK
abinahmad@kau.edu.sa
http://binahmad.kau.edu.sa/

Daut Daman
Computer Graphics
1993,UniversityTeknologi, Malaysia
dautdaman@gmail.com
http://kau.edu.sa/Default.aspx?Site_ID=0056524&lng=EN

Sami M. Halawani
Computer Science
1996George Mason University, USA
Dr.halawani@gmail.com
http://halawani.kau.edu.sa/

Sarudin Kari
Computer Graphics
1993 University Teknologi, Malaysia
sarudin.kari@gmail.com

Assistant Professors

Samir K. Boucetta
Software Engineering
2002, University of Mannouba, Tunisia
sboucetta@kau.edu.sa
http://sboucetta.kau.edu.sa/

Shabbeer S. Shaik
Security Systems
2007 Jawaharlal University, India

Lecturers

Abdullah M. Boukhary
Software Engineering
2008 Florida Tech, USA
ambokhary@kau.edu.sa
http://ambokhary.kau.edu.sa/

Mujeeb R. Kukumohammed
Programming Languages
2003 University of Calcutta,India
mkunhumuhammed@kau.edu.sa
http://mkunhumuhammed.kau.edu.sa

Nashouen A. Al Romema
Temporal Databases
2009 Jordan University, Jordan
nalromema@kau.edu.sa
http://nalromema.kau.edu.sa

Sakher F. Ghanem
Computer Sciences
2008 King Abdul-Aziz University, Saudi Arabia
sghanem@kau.edu.sa
http://sghanem.kau.edu.sa/

Ubaid K. Sulaiman
Databases
2007 Bangalore University, India
usulaiman@kau.edu.sa
http://usulaiman.kau.edu.sa