



College of Computer & Information
Sciences

Compute Science Department

Bachelor of Science in Computer Science

STUDENT GUIDE | 2023



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PREFACE

Welcome to join the Department of Computer Science in the college of Computer and Information Sciences at King Saud University!

The Department of Computer Science provides high-quality education that prepares students for the computing industry and/or graduate education.

The BSc. program in Computer Science is designed to improve the competitiveness of the graduates by developing their professional skills with a clear commitment to the ethics of the discipline. The BSc. curriculum nurtures a culture of teamwork, entrepreneurship, leadership and the sense of society responsibility. The BSc. program in Computer Science is accredited by the Computing Accreditation Commission of ABET, <https://www.abet.org>, under the General Criteria and the Computer Science and Similarly Named Computing Programs Program Criteria.

The Msc. program in Computer Science serves to deepen student's understanding of the field in preparation for career advancement or doctoral studies. The Department of Computer Science is the first department in the kingdom to admit and grant Master degrees in computer science for female students providing the society with much needed qualified workforce.

The PhD Program aims to promote scientific research and to prepare specialized scientists and qualified research staff as well as to find solutions to problems of computer science, in both the private and the public sectors, and to give students in the program means, methods and scientific methodologies necessary for those who are distinctive in computing sectors.

We invite you to read the booklet, browse our website, visit our campus, and contact us to learn more about our department. You will find a challenging curriculum, excellent facilities, and an accessible faculty committed to quality computer science education.



A BIT OF CS

Computer science is a discipline that spans theory and practice. It has a wide range of specialties such as programming languages, databases, computer architecture, software systems, graphics, artificial intelligence, computational science, software engineering, networks, etc... Computer science also has strong connections with other disciplines such as engineering, healthcare, business, etc.

The Computer Science Department is the largest department in the College of Computer and Information Sciences at King Saud University. It was established in 1404/1405 H. Since then, the department graduates have joined many government and private sectors.

The department relies on highly qualified academic and administrative staff. Most of them hold post-graduate degrees obtained from recognized local and international universities. Faculty members are involved in teaching and research. Their research activities find applications in various science fields, and are published in high quality international conferences and journals.

| VISION

Preparing highly qualified professionals in Computer Science for an efficient contribution to the edification of the knowledge society and to the achievement of the national development goals through fostering an academic environment ideal for knowledge development, research, and innovation in the field of Computer Science.

| MISSION

An internationally leading academic model in Computer Science.

| OBJECTIVES

- o Graduates will work as computing professionals, conducting research and/or leading, designing, developing, or maintaining computer-related projects in various fields.
- o Graduates are capable to demonstrate professionalism and a sense of societal and ethical responsibility in all their endeavors.
- o Graduates continue enhancing their skills and embrace new computing technologies through self-learning activities and post-graduate training or education.



BACHELOR OF SCIENCE IN COMPUTER SCIENCE

The department of computer science was established in 1984 with a B.Sc. program to prepare a highly competent creative workforce in the field of computer science. The department, since its inception, has made significant progress. To develop competent professionals in the field of computer science with high moral and ethical values, the program focuses on the following knowledge areas:

- Computer science.
- Basic sciences in Mathematics, Statistics, and Physics.
- Humanities and Social Sciences.
- English Language.
- Arabic Language and Islamic Culture.
- The program satisfies the ACM/IEEE recommendations for computer science curriculum and takes into account the community needs. The department staff is continuously working on updating the B.Sc. program to meet the latest technologies in computer science and the rapid changes in society needs.

| ADMISSION REQUIREMENTS

In general, students applying to the College of Computer and Information Sciences are centrally admitted by the Deanship of Admission and Registration to the Engineering/Science branch of the First Common Year (FCY). Since 2008, students have been required to take a Subject Achievement Test (score is calculated as a composite score of a test administered in four subjects: (Math, Physics, Chemistry, and Biology). The minimum requirements for admission to the FCY are based on the following criteria:

- The total number of accepted students should not exceed the number specified by the university council.
- Students are ranked and selected according to their composite average as follows:
 - 30% of General Aptitude Test.
 - 40% of Subject Achievement Test.
 - 30% of Secondary School GPA.

After completing the FCY, students are accepted to the college and distributed to the various departments according to three criteria: their preference, GPA from the FCY, and the capacity of each department.

The requirement for the admission of students to the College of Computer and Information Sciences is based on a composite average not less than 75% which is calculated as follows:

- 25% of General Aptitude Test.
- 25% of Subject Achievement Test.
- $7 \times \text{GPA of FCY}$.
- Points of Math 101 Course in FCY.



| PROGRAM STRUCTURE

The distribution of credit hours in the CS program is as following:

Term	Credit Hours Updates
University Requirements	8
First Common Year	32
College Requirements	14
Department Requirements	66
Department Electives	12
Total	132

A. University Requirements

The following table shows courses that are mandatory at the University level:

University Requirements				
Code	Course Name	Credit Hours	Prerequisite	Co-requisite
IC107	Professional Ethics	2		
IC 108	Current Issues	2		
IC 10x	One KSU Requirement Course	2		
IC 10x	One KSU Requirement Course	2		
	Total	8		

B. College Requirements

The following table shows mandatory courses at the college level:

College Requirements				
Code	Course Name	Credit Hours	Prerequisite	Co-requisite
CSC 111	Computer Programming I	4 (3. 2. 1)	CT 101	
CSC 113	Computer Programming II	4 (3. 2. 1)	CSC 111	
CSC 212	Data Structures	3 (3. 0. 1)	CSC 113	
CSC 227	Operating Systems	3 (3. 0. 1)	CSC 212	
	Total	14		

C. Department Requirements

Mandatory courses at the department level are listed in the following table:

Department Requirements				
Code	Course Name	Credit Hours	Prerequisite	Co-requisite
PHYS 104	General Physics -2-	4		
MATH 106	Integral Calculus	3	MATH 101	
MATH 151	Discrete Mathematics	3	MATH 101	



CSC 215	Procedural Programming With C	3 (2. 2. 0)	CSC 111	
CSC 220	Computer Organization	3 (2. 2. 1)	MATH 151	
MATH 244	Linear Algebra	3	MATH 106	
CSC 281	Discrete Mathematics for Computer Science	3 (3. 0. 1)	STAT 101, MATH 151	
CSC 304	Ethical Issues in Computing and Research Methods	3 (3. 0. 1)	CSC 113	
CSC 311	Design and Analysis of Algorithms	3 (3. 0. 1)	CSC 281 CSC 212	
CSC 329	Computer Networks	3 (3. 0. 1)	CSC 227	
CSC 339	Theory of Computation	3 (3. 0. 1)	CSC 281	
CSC 340	Programming Languages and Compilation	3 (3. 0. 1)	CSC 339	
CSC 343	Systems analysis and design	3 (3. 0. 1)	CSC 212	
CSC 380	Fundamentals of Database Systems	3 (3. 0. 1)		CSC 212
CSC 361	Artificial Intelligence	3 (3. 0. 1)	CSC 212	
CSC 429	Computer security	3 (3. 0. 1)	CSC 329	
CSC 453	Parallel Processing	3 (3. 0. 1)	CSC 227	
CSC 457	Internet Technologies	3 (3. 0. 1)	CSC 329	
CSC 496	Graduation Project I	2 (2. 0. 0)	CSC 343 Finishing 95 hours	
CSC 497	Graduation Project II	4 (4. 0. 0)	CSC 496	
CSC 479	Practical Training	1	Finishing 95 hours	
XXX XXX	One course from List A	4		
	Total	66		

D. Department electives

The CS department allows students to take 12 credit hours of elective courses. The courses that are offered as electives are listed in the following table:

Department Electives				
Code	Course Name	Credit Hours	Prerequisite	Co-requisite
CSC 226	Unix OS Environment	2 (1. 2. 0)	CSC 111	
CSC 261	Artificial Intelligence Programming Languages	3 (3. 0. 1)	CSC 113	
CSC 320	Systems Programming	3 (3. 0. 1)	CSC 227	
CEN 333	Computer Architecture for Computer Science	3 (3. 0. 1)	CSC 227	



CSC 384	Applied Numerical Computation	3 (3. 0. 1)	CSC 311	
CSC 386	Algorithms & Techniques for Database Management Systems	3 (2. 2. 0)	CSC 380	
CSC 412	Simulation and Modeling	3 (3. 0. 1)	CSC 111 STAT 101	
CSC 430	Computer Arabization	3 (3. 0. 1)	CSC 220 CSC 227	
CSC 440	Human Computer Interaction	3 (3. 0. 1)	CSC 343	
CSC 443	Software/IT Project Management	3 (3. 0. 1)	CSC 343	
CSC 446	Design Patterns	3 (3. 0. 1)	CSC 343	
CSC 456	Distributed Systems	3 (3. 0. 1)	CSC 329	
CSC 459	Net-Centric Computing	3 (3. 0. 1)	CSC 329	
CSC 462	Machine Learning	3 (3. 0. 1)	CSC 361	
CSC 463	Knowledge Engineering & Expert Systems	3 (3. 0. 1)	CSC 361	
CSC 476	Computer Graphics	3 (3. 0. 1)	CSC 212	
CSC 478	Digital Images Processing & Analysis	3 (3. 0. 1)	CSC 212	
CSC 484	Information Retrieval	3 (3. 0. 1)	CSC 380	
CSC 489	Selected Topics in Computer Science	3 (3. 0. 1)	Finishing 100 hours	



List A: List of Science Courses

Code	Course Name	Credit Hours	Prerequisite	Co-requisite
PHYS 103	General Physics (I)	4		
CHEM 108	Introduction to Organic Chemistry	4	CHEM 101	
PHYS 210	Classical Mechanics 1	4	MATH 101	

List B: List of Elective Courses from Other Departments

Code	Course Name	Credit Hours	Prerequisite
SWE 333	Software Quality Assurance	2	CSC 343
IS 335	Database Management Systems	3	CSC 380
IS 432	Semi-Structured Data	3	CSC 380
SWE 434	Software Testing and Validation	3	CSC343
CEN 445	Networks Protocols & Algorithms	3	CSC 329
IS 463	Introduction to Data Mining	3	CSC 361
IS 466	Decision Support Systems	3	CSC 380
SWE 483	Mobile Application Development	3	CSC 113
IC 100	Studies in The Prophet Biography	2	
QURN 100	Quran Kareem	2	
IC 101	Principles in Islamic Culture	2	
IC 102	Family in Islam	2	
IC 103	Economic System in Islam	2	
IC 104	Islamic Political System	2	
IC 105	Human Rights	2	
IC 106	Medical Jurisprudence	2	
IC 109	Development Role Of Women	2	



E. Curriculum Plan

Preparatory Year (1st Year)	1 st Semester				
	Course Code	Course Title	CH	Pre-Requisite	Co-Requisite
	ENGS 100	English	6		
	MATH 101	Differential Calculus	3		
	ARAB 100	Writing skills	2		
	CHEM 101	GENERAL CHEMISTRY (I)	4		
	Total		15 CH		
	2 nd Semester				
2 nd Year	STAT 101	An Introduction to Probability & Statistic	3		
	CT 101	IT skills	3		
	ENT 101	Entrepreneurship	1		
	EPH 101	Fitness and Health Education	1		
	CI 101	University Skills	3		
	ENGS 110	English	6	ENGS 100	
	Total		17 CH		
	3 rd Semester				
2 nd Year	Course Code	Course Title	CH	Pre-Requisite	Co-Requisite
	CSC 111	Computer Programming I	4	CT 101	
	MATH 106	Integral Calculus	3	Math 101	
	MATH 151	Discrete Mathematics	3	Math 101	
	PHYS 104	General Physics-2-	4		
	IC107	Professional Ethics	2		
	Total		16 CH		
	4 th Semester				
2 nd Year	CSC 113	Computer Programming II	4	CSC 111	
	CSC 220	Computer Organization	3	MATH151	
	IC 108	Current Issues	2		
	MATH 244	Linear Algebra	3	MATH 106	
	Total		12 CH		



3 rd YEAR	5th Semester			
	Course Code	Course Title	CH	Pre-Requisite Co-Requisite
	CSC 212	Data Structures	3	CSC 113
	CSC 281	Discrete Mathematics for Computer Science	3	Stat 101, Math 151
	CSC 380	Fundamentals of Database Systems	3	CSC 212
	CSC 304	Ethical Issues in Computing and Research Methods	3	CSC 113
	CSC 215	Procedural Programming With C	3	CSC 111
	Total		15 CH	
	6th Semester			
	CSC 227	Operating Systems	3	CSC 212
4 th YEAR	CSC 311	Design and Analysis of Algorithms	3	CSC 281 CSC 212
	CSC 339	Theory of Computation	3	CSC 281
	CSC 343	System Analysis & Design	3	CSC 212
	CSC 361	Artificial Intelligence	3	CSC 212
	Total		15 CH	
	7 th Semester			
	CSC 329	Computer Networks	3	CSC 227
	CSC 340	Programming Languages and Compilation	3	CSC 339
	CSC 453	Parallel Processing	3	CSC 227
	CSC 496	Graduation Project I	2	CSC 343 Finishing 95 Hours
	CSC 479	Field Experience	1	Finishing 95 Hours
	Total		12 CH	
	8 th Semester			
	CSC 429	Computer Security	3	CSC 329
	CSC 457	Internet Technologies	3	CSC 329
	CSC 497	Graduation Project II	4	CSC 496
	Total		10 CH	



COURSED DESCRIPTION

A. Mandatory Courses

CSC 111 – Computer Programming-I (3-2-1)	
Course Description	Introduction to computers and programs. Programmer's algorithm, byte code and Java Virtual Machine. Java program's structure, constants, variables and built-in data types. The arithmetic, assignment, increment and decrement operators. Classes and object definition, UML representation of a class, declaration of objects (Instance variables), primitive types and reference types. Relational and logical operators, Boolean expressions, conditional statements, loop statements. Object oriented principles, encapsulation and information hiding, methods and the message passing principles, setters, and getters. Methods in depth, passing parameters, constructors, setters. Arrays, usefulness of arrays, declaration of arrays, access to array elements, operations on arrays.
Prerequisite	CT 101- IT skills
Textbook	<ul style="list-style-type: none">o An Introduction to Object-Oriented Programming with Java, 4th edition, by C. Thomas Wu (Otani), McGraw-Hill Higher Education, 2006.
Course Objectives	The course aims at giving the students a broad foundation in the fundamental concepts of object oriented programming accompanied by specific labs to develop the basic skills in object oriented programming with Java. It introduces the basic concepts and principles of the Object Oriented approach such as: (i) Abstraction and Encapsulation principles, (ii) Classes, objects and the constructor concepts, (iii) Information hiding principle and the assessors concept. (iv) Methods, the message passing and the overloading principles.

CSC 113 – Computer Programming-II (3-2-1)	
Course Description	This course continues the coverage of the fundamental concepts of Object Oriented Programming started in Programming I (CSC 111). It covers more advanced concepts and topics such as relationships between classes, inheritance, polymorphism, abstract classes, error handling, interfaces, generics and data structures such as linked lists, stacks and queues, in addition to graphical user interface.
Prerequisite	CSC 111 - Computer Programming I.
Textbook	<ul style="list-style-type: none">o An Introduction to Object-Oriented Programming with Java, 4th edition, by C. Thomas Wu (Otani), McGraw-Hill Higher Education, 2006.o Java Programming: From Problem Analysis to Program Design, 4th Edition by D.S. Malik.
Course Objectives	The objective of this course is to develop the students' ability to use the basics of object-oriented design and programming. The students learn the characteristic features of object orientation – classes, methods, polymorphism, and inheritance – through both the lectures and a sequence of illustrative programming assignments. Students will also study list data structures, event driven programming and graphical user interface tools.

CSC 212 – Data Structures (3-0-1)	
Course Description	Fundamental concepts of data structures. Performance measurement of algorithms. Implementation and use of lists, stacks, queues, priority queues, trees, heaps, hash tables and graphs. Recursion. Students will do programming assignments.
Prerequisite	CSC 113 - Computer Programming II.



Textbook	<ul style="list-style-type: none">o Data Structures and Algorithms in Java, 4th edition, by M.T. Goodrich and R. Tamassia. John Wiley and Sons, Inc., ISBN: 0-471-73884-0.
Course Objective	The objective of this course is to teach the fundamentals of data structures needed in the remainder of the curriculum and develop students' problem solving and computer programming skills.

CSC 215 - Procedural Programming With C (2-2-1)	
Course Description	Introduction to the procedural programming paradigm. Brief history of C. C primitive data types, variables and constants, operators (arithmetic operators, logical operators, and access operators). Control structures. Procedures and parameter passing. User defined types. Pointers.
Prerequisite	CSC 111 - Computer Programming I
Textbook	<ul style="list-style-type: none">o Brian W. Kernighan, Dennis M. Ritchie, "The C programming Language", Prentice Hall, 1988.
Course Objectives	The objective of this course is to teach students the design and implementation of C programs. They also are meant to understand when to use procedural vs. OO programming.

CSC 220 - Computer Organization (2-2-1)	
Course Description	The course introduces basic digital logic design techniques and integrates the topics of generic assembly language programming, computer organization, and computer design. The objectives of this course are to: help students learn the fundamental elements of computer architecture from a functional, hardware perspective; foster an appreciation of organizational models and design decisions that determine the overall performance, capabilities, and limitations of a computer system; and help students understand the interdependencies among assembly languages, computer organization, and design. Topics include Introduction to basic computer organization and how the computer works; DeMorgan's Law, simplifying circuits using Karnaugh maps, Instruction code, Computer registers, Instruction set, Timing and control; Register Transfer Language HDL (Hardware Description Language) and Micro-operations; Computer Arithmetic Logic Unit Design. -Hardwired control unit, instruction set, introduction to addressing modes; Central Processing Unit Design, Register organization, Instruction format, Addressing modes.
Prerequisite	MATH 151- Discrete Mathematics
Textbook	<ul style="list-style-type: none">o Computer System Architecture - 3rd Edition, Author: Morris Mano, Publisher: McGraw Hill.o Logic and Computer Design Fundamentals*, <i>4th Edition</i> by M. Morris Mano and Charles R. Kime. Published by Prentice-Hall, 2008. ISBN: 0-13-600158-0.
Course Objectives	The course aims to give the students: <ul style="list-style-type: none">o Design and understanding of the different basic components of a computer system;o Understanding how the different components inside the computer system functionso A theoretical and practical understanding of the register transfer languageo A basic understanding of the importance of control units.o A theoretical and practical understanding of the arithmetic logic unit.o Understanding the interdependencies among assembly languages, computer organization and design.

CSC 227 - Operating Systems (3-0-1)	
Course Description	This is an introductory course in Operating Systems. As such, it is intended to cover many of the concepts related to most of the actual Operating Systems. Although the



	study of a particular Operating System is out of the scope of this course, nevertheless, we will cover most of the concepts found in any existing Operating System. We will review computer system and operating system structures, processes and threads (concepts of, communication, synchronization and deadlocks), CPU Scheduling, memory management and virtual memory.
Prerequisite	CSC 212 - Data Structures.
Textbook	<ul style="list-style-type: none">Operating System Concepts, A. Silberschatz, P.B. Galvin, Eight Edition, John Wiley & Sons Inc., ISBN 0-470-12872-0.
Course Objectives	Course objective is to provide the concepts of operating systems design and implementation. It identifies and describes the major and common components of an operating system with stating their functions and purposes especially process management (process scheduling, and synchronization), and memory management (segmentation, paging, and swapping).

CSC 281 – Discrete Mathematics for Computer Science (3-0-1)	
Course Description	Logic and methods of proofs. Basic Discrete Structures: Sets, Functions, Recursive definitions, Sequences and Summations. Growth of functions. Integers and Division, Rings & Fields, Applications of Number Theory. Combinatorics: Counting techniques, Permutations and Combinations, Binomial Coefficients, Permutation and Combinations with repetition, Recurrence Relations, Generating Functions. Discrete Structures: Relations, Graphs, Trees and Finite State Machines. Discrete Probability (optional).
Prerequisite	STAT 101 - An Introduction to Probability & Statistics. MATH 151 - Discrete Mathematics.
Co-requisite	CSC 212 – Data Structures.
Textbook	<ul style="list-style-type: none">Kenneth H. Rosen, Discrete Mathematics and Its Applications, McGraw-Hill, 2006, ISBN-10: 0073312711.
Course Objectives	The course is an introductory course in discrete mathematic with emphasis on how this theory can be invoked to develop efficient algorithms and systems. Also, it serves as the mathematical prerequisite for many advanced courses.

CSC 304 – Ethical Issues in Computing & Research Methods (3-0-1)	
Course Description	This course seeks to equip students with sufficient knowledge of Computer Ethics to enable them recognize the ethical nature of certain issues that arise in the Information and Communications Technology (ICT) workplace. The course studies the effect of the proliferation of computers in our world, the impact of computers in the social, economic, political, and other aspects of our life. It covers the moral and legal obligations of computer professionals and issues concerning security, privacy versus freedom of information, ethics and professionalism, intellectual property rights, research methods: collecting and analyzing data, critical evaluation of research, report writing, choosing and evaluating references, and presentation skills.
Prerequisite	CSC 113- Computer Programming II.
Textbook	<ul style="list-style-type: none">Joseph M. Kizza: "Ethical and social issues in Information Age" 3rd Edition Springer 2010.Giannis Stamatellos :Computer Ethics a global perspective" 2nd Edition Jones and Bartlett 2007.
Course Objectives	The objective of the course is to provide the students with main concepts of computer ethical issues and to introduce scientific research methods.

CSC 311 – Design and Analysis of Algorithms (3-0-1)	
Course Description	Mathematical essentials; sorting; space and time complexity; algorithm design methods: greedy algorithms, divide and conquer, and dynamic programming; introduction to graph theory; and NP-completeness.
Prerequisite	CSC 281 - Discrete Mathematics. CSC 212- Data Structures



Textbook	<ul style="list-style-type: none">○ Introduction to the Design & Analysis of Algorithms – 2nd Edition . A. Levitin, Pearson Addison-Wesley, 2006.
Course Objectives	The course aims at giving the students a broad foundation in the fundamental concepts of object oriented programming accompanied by specific labs to develop the basic skills in object oriented programming with Java. It introduces the basic concepts and principles of the Object Oriented approach such as: (i) Abstraction and Encapsulation principles, (ii) Classes, objects and the constructor concepts, (iii) Information hiding principle and the assessors' concept. (iv) Methods, the message passing and the overloading principles.

CSC 329 – Computer Networks (3-O-1)

Course Description	This course covers the theoretical as well as hands-on knowledge of Computer Networks covering all the fundamental aspects of networking such as OSI, TCP/IP, LANs, MANs, WANs, Routing Protocols, Switching etc. This course will discuss the design of small to medium size networks as well as different networking issues related to routing and switching.
Prerequisite	CSC 227 - Operating Systems.
Textbook	<ul style="list-style-type: none">○ Computer Networks by Andrew S. Tanenbaum (4th edition).○ Computer Networks and Internets by Douglas E. Comer (5th edition).○ CCNA ICND1 and ICND2 official exam certification guides by Wendell Odom.
Course Objectives	The objective of this course is to equip students with theoretical as well as hands-on knowledge of Computer Networks covering all the fundamental aspects of networking such as OSI, TCP/IP, LANs, WAN, Routing Protocols, Switching etc. At the end of the course, students should be able to handle small to medium size networks and have the ability to implement and troubleshoot different networking issues related to routing and switching.

CSC 339 – Theory of Computation (3-O-1)

Course Description	Mathematical preliminaries. Regular languages, regular expression, deterministic and non-deterministic finite automata, closure properties and pumping lemma. Context-free grammar and languages, pushdown automata and pumping lemma. Turing machines, the Church-Turing Thesis, Computability. Decidability and the Halting problem. Complexity, class P and NP.
Prerequisite	CSC 281 - Discrete Mathematics for Computer Science.
Textbook	<ul style="list-style-type: none">○ Introduction to the Theory of Computation (second edition) by Michael Sipser. Editor: Thomson Course Technology
Course Objectives	The course aims at answering two questions: what can be computed by a machine? And how efficiently? It starts by presenting machines models, then addresses the computability problem, and then the complexity of algorithms and their classification according to it

CSC 340 – Programming Languages and Compilation (3-O-1)

Course Description	Programming Languages: features, design and translation issues. Lexical Analysis. Syntactic Analysis. Semantic Analysis. Code Generation.
Prerequisite	CSC 339 - Theory of Computation.
Textbook	<ul style="list-style-type: none">○ Concepts of Programming Languages by Robert Sebesta, Addison-Wesley.○ Compiler Construction: Principles and Practice by Kenneth C. Loudon, PWS Publications.
Course Objectives	The objective of this course is to explore different types of programming languages and their features, and study translation/compilation techniques used in translating the high-level languages to a machine language. A basic compiler for a small programming language will be implemented during the semester.



CSC 343 – Systems Analysis and Design (3-O-1)	
Course Description	This course focuses on the principles of software development including the life-cycle models and different phases of the software development process: requirements analysis, specification and design. The key objective of this course is to learn modular design of software and documenting the design using symbolic representations, i.e., UML diagrams. Object-oriented techniques are key to the course. However, this is not a programming course. The key characteristic is having teams of three to four students work on developing software systems over a course of one semester. This work includes a feasibility study, requirements analysis and object-oriented design.
Prerequisite	CSC 212 - Data Structures.
Textbook:	<ul style="list-style-type: none">o Ian Sommerville: Software Engineering, 8th edition, Addison-Wesley, 2007o Roger Pressman: Software Engineering, McGraw-Hill, 2005.o Larman C.: Applying UML and Patterns – An Introduction to Object-Oriented Analysis and Design and Iterative development, 3rd edition, Prentice Hall, 2005.
Course Objectives	The purpose of this course is to present software engineering as a body of knowledge. The course is designed to present software engineering concepts and principles in parallel with the software development life cycle.

CSC 361 – Artificial Intelligence (3-O-1)	
Course Description	The course will provide an introduction to artificial intelligence. Topics include: problem solving using search (search procedures e.g. depth-first, breadth-first, A*, etc.), constraint satisfaction problems, game playing, knowledge representation and inference procedures. Abstract highlights cover an advanced AI topic (e.g. machine learning, natural language processing). Students will do a small project in this course as well.
Prerequisite	CSC 212 - Data Structures.
Textbook	<ul style="list-style-type: none">o Artificial Intelligence: A modern approach Stuart Russell and Peter Norvig, Prentice Hall, 2006.
Course Objectives	The objective of this course is to develop the students' ability to understand the concepts of AI. The students will be taught and required to practice the informed and un-informed search techniques, problem formulation, optimization techniques, knowledge representation and detailed game theory. The students are expected to present their skills by a course project.

CSC 380 – Introduction to Database Concepts (3-O-1)	
Course Description	Purpose of Database Systems, View of Data, Data Models, Data Definition Language, Data Manipulation Language, Transaction Management, Storage Management, Database Administrator, Database Users, Overall System Structure. Entity Sets, Relationship Sets, Design Issues, Mapping Constraints, Keys, E-R Diagram, Design of an E-R Database Schema. Structure of Relational Databases, Relational Algebra, Extended Relational-Algebra-Operations, Modification of the Database, Reduction of an E-R Schema to Tables. Basic Structure, Set Operations, Aggregate Functions, Null Values, Nested Sub-queries, Derived Relations, Views, Modification of the Database, Joined Relations, DDL, DML. First Normal Form, Relational Database Design, Functional Dependencies, Decomposition, Boyce-Codd Normal Form, Third Normal Form, Overall Database Design Process.
Co-requisite	CSC 212 - Data Structures.
Textbook	<ul style="list-style-type: none">o Fundamentals of Database Systems. ElMasri, Navathe, 5th Edition Addison Wesley.



Course Objectives	This course aims at giving the students a broad foundation in the fundamental concepts of database. This should allow students to design and implement real life databases, in addition to evaluate existing ones. Students will be able to use query of different types of complexity.
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CSC 429 – Computer Security (3-0-1)

Course Description	Security principle, model and attacks. Cryptography, public key and secret-key cryptography. Authentication and digital signature. Key management and cryptographic protocol. Access control. Building secure system. Security in operating systems. Security in computer networks. Management and analysis of security. Risk assessment. Computer security policy. International information security standards. Intrusion detection and incident response.
Prerequisite	CSC 329 - Computer Networks
Textbook	Introduction to Computer Security, Mat Bishop.
Course Objectives	The course aims at giving the students a broad foundation in the fundamental concepts of Computer Security. It introduces the basic concept and principles of computer security such as: Security requirements, encryption, access control, malicious software, security policy and management.

CSC 453 - Parallel Processing (3-0-1)

Course Description	Introduction to parallel processing. Models of parallel machines. Parallel programming paradigms and models. Performance analysis of parallel systems. Parallel programming languages and frameworks.
Prerequisite	CSC 227 - Operating Systems.
Textbook	<ul style="list-style-type: none">o F. T. Leighton, Introduction to Parallel Algorithms and Architectures, Morgan Kaufmann, 1992.o Joseph Jaja, Introduction to Parallel Algorithms, Addison Wesley, 1992.

CSC 457 – Internet Technologies (3-0-1)

Course Description	An overview of Internet technologies (definitions, evolutions, examples, and, applications). Publishing and browsing technologies. Internet tools. TCP/IP and Client/server architectures. WWW, HTTP and HTML for text, images, links and forms. Web-based applications development: client-side scripting, server-side scripting and the MVC design approach. WEB site development. Security and privacy.
Prerequisite	CSC 329 – Computer Networks.
Textbook	<ul style="list-style-type: none">o Computer Networks by Andrew S. Tanenbaum, 2003.
Course Objectives	The goal of this course is to provide an introduction to the basic concepts of the technologies that are used on the Internet. Students learn about building blocks of internet. They learn about various protocols used by internet. Students learn about web servers, search engines and software tools required to implement a website.

CSC 496 – Graduation Project-I (2-0-0)

Course Description	This course is the first part of a sequence of two courses (CSC496 and CSC497) that in entirety constitute the BSc graduation capstone project. In this project, the student is expected to develop software for a specific problem by applying previously learned concepts and methods during the course of the project. In this course the student is typically expected to study the problem, see what others have done, perform the analysis, determine the requirements and suggest/design a solution. The project will culminate in a formal public presentation, and written documentation. Oral and written progress reports are required. The project topic may be provided by the faculty, by the student(s) or by the industry. The topic is subject to the departmental approval.
Prerequisite	Student must have finished at least 95 hours in the BSc program. CSC 343- System analysis and design



Course Objectives	This course is a semester-long team project, where students apply a broad range of skills learned in earlier courses, and demonstrate their competence in technical material, communications, and project skills.
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CSC 497 - Graduation Project-II (4-0-0)

Course Description	This course is the second part of a sequence of two courses (CSC496 and CSC497) that in entirety constitute the BSc graduation capstone project. In this project, the students will continue the software development of the problem they picked in CSC496. The project will culminate in the delivery of a working system, a formal public presentation, and written documentation. Oral and written progress reports are required.
Prerequisite	CSC 496 - Graduation Project-I.
Course Objectives	This course is a semester-long team project, where students continue what they did in the first part of this project. In this part there are expected to do the actual implementation and evaluation.

CSC 479 - Practical Training - (1-0-0)

Course Description	Training is an important aspect of the educational process in CCIS. Student is required to join a government or private sector IT center. The aim of the training is to acquire the experience in applying what he learned in real life. The training is evaluated by the training advisor at the IT center and by the CCIS training committee.
Prerequisite	Student must have finished at least 95 hours in the BSc program.
Course Objectives	This summer training for college students aims to provide them with a sound foundation out of theoretical and practical hands on knowledge and experience in the field of computer science. The course will provide students insight in to design methodology and implementation using different types of programming languages in different environments.

B. Elective Courses

CSC 226 - Unix OS Environment (1-2-0)

Course Description	Overview of the Unix OS, basic concepts, usage of the help and man and info commands. Unix file system and basic commands. Redirection and pipelining. Filtering commands: line searching, (grep, egrep and fep), line content manipulation (cut, sort, tr ...). Line visualization (pr, pg, more, tail, fmt, ...), comparing files (diff and cmp). Users and user-rights. Process management. The command find. Shell programming. The awk and sed commands.
Prerequisite	CSC 111 - Computer Programming I.
Textbook	<ul style="list-style-type: none"> o Ellie Quigley: "Unix ® Shell by Example" 4th edition, Prentice Hall, 2005. o David I. Schwartz: "Introduction to UNIX", 2nd Edition, Prentice Hall, 2006.

CSC 261 - Artificial Intelligence Programming Languages (3-0-1)

Course Description	This course provides an overview of functional, logic and constraint logic programming paradigms used in the context of artificial intelligence. The course focuses on Prolog language syntax and semantics: lists, operators, arithmetic, structures, input/output, built-in predicates, etc. It emphasizes constraint handling and solving combinatorial problems involving constraints.
Prerequisite	CSC113 - Computer Programming II.
Textbook	<ul style="list-style-type: none"> o Prolog: Programming for Artificial Intelligence by Ivan Bratko,(Latest edition), Addison-Wesley.



CSC 320 – Systems Programming (3-0-1)	
Course Description	The course aims to give the students a theoretical and practical understanding of the programming interface to a Unix system, including the system call interface and many of the functions provided in the standard C library. Topics covered include an overview of the basic Unix programming concepts, an introduction to shell programming, unbuffered I/O, the standard I/O library, the environment of a Unix process, process control, signals, and interprocess communication.
Prerequisite	CSC 227- Operating Systems.
Textbook	<ul style="list-style-type: none">Advanced programming in the UNIX environment, Last Edition, by W. Richard Stevens, Stephen A. Rago. Addison Wesley.
Course Objectives	<ul style="list-style-type: none">A theoretical and practical understanding of the internal operation of a Unix system.A practical use and application of a Unix system call interface that supports I/O, processes, signals and IPC.A practical use and application of the C standard I/O library functions.

CSC 384 Applied Numerical Computation (3-0-1)	
Course Description	This is an introductory course on Numerical Analysis and Methods. Topics include: errors and their propagation, floating-point computation, algorithms and numerical stability, linear systems of equations, interpolation, difference equations, curve fitting, nonlinear equations, numerical differentiation and integration.
Prerequisite	CSC 311 - Design and Analysis of Algorithms.
Textbook	<ul style="list-style-type: none">Applied Numerical Analysis C.F. Gerald and P.O. Wheatley, Addison-Wesley (7th edition, 2003).

CSC 386 – Algorithms and Techniques for Database Management Systems (3-0-1)	
Course Description	The goal of this course is to introduce the students to the following fundamental data management issues: database file organization, indexing, query processing and optimization, transaction, concurrency control, recovery system as well as other advanced topics.
Prerequisite	CSC 380 - Introduction to Database Concepts
Textbook	"Database System Concepts". Silberschatz Mc Graw Hill Fourth/Fifth Edition
Course Objectives	The main objective of this course is to provide an in-depth understanding of Database Management Systems. In particular, students will be exposed to the internal structures and algorithms of a relational database system in order to facilitate their ability to later build database systems in general

CSC 412- Simulation and Modeling (3-0-1)	
Course Description	Introduction to Simulation. Concepts in Discrete-event Simulation (DES). Components of DES. Monte Carlo simulation, the life cycle of a simulation study, input and output data analysis, world views and time control, random number generation, credibility assessment of simulation results, simulation languages, Parallel and Distributed Simulation, applications of simulation using contemporary simulation modeling and support software.
Prerequisite	CSC 111 - Computer Programming I STAT 101 - An Introduction to Probability & Statistics
Textbook	<ul style="list-style-type: none">A.M. Law and W.D. Kelton: "Simulation Modeling and Analysis", McGraw Hill, 2000.

CSC 430 – Computer Arabization (3-0-1)	
Course Description	System Arabization level (screen Arabization, keyboard Arabization, printer Arabization, font and codepage manipulation, creating visual Arabic interfaces, etc.);Introduction to Arabic natural language processing (Arabic morphological



	analysis, Arabic syntax and semantics, Classical models, Applications); Applying neural networks in Arabic natural language processing (neural networks for Arabic morphological analysis, neural networks for syntactic analysis); The phonetic properties of the Arabic language (Arabic allophones, isolating Arabic allophones, characterization of Arabic allophones, using Arabic allophones in some applications.
Prerequisite	CSC 220 - Computer Organization CSC 227 Operating Systems
Textbook	Collection of papers and articles.
Course Objectives	The objective of this course is to be aware of the state-of-the-art in Computer Arabization.

CSC 440-Human Computer Interaction (3-0-1)	
Course Description	Introduction to HCI. The Human User: Capabilities and Limitations. The Computer: Capabilities and Limitations. The Interaction: Models of Interaction and Interaction Styles. Usability Principles: Principles of HCI that support user friendliness. Interface design: dialog notation and design - Visual Design. Design support: Systems that support the design process. Usability Evaluation. Introduction to Speech Computing and other Forms of Input/output.
Prerequisite	CSC 343 - Systems Analysis and Design
Textbook	<ul style="list-style-type: none">Human-Computer Interaction, Third Edition by Alan Dix et al, Prentice Hall (2004).

CSC 443 - IT/Software project management (3-0-1)	
Course Description	Project life cycle; Project constraints; Project organization; Risk management; Project cost; Integrated schedule and critical path analysis; Baseline cost; Team building; Project planning; Reporting on project status; Closing and sign-off.
Prerequisite	CSC 343 - Systems Analysis and Design
Textbook	<ul style="list-style-type: none">Kathy Schwalbe, Information Technology Project Management, 2nd Edition, Course Technology, 2002.Anita Rosen, Effective IT Project Management, Prentice-Hall, 2008.

CSC 446 - Design Patterns (3-0-1)	
Course Description	This course aims at giving student the ability of design programs using patterns. A design pattern is a general repeatable solution to a commonly occurring problem in software design. Design patterns deal specifically with problems at the level of software design. Definition, context of use will be introduced along with their classification. Some of the most used pattern will be studied such as : Abstract factory, Factory method, Builder, Lazy initialization, Object pool, Prototype, Singleton, Adapter, Bridge, Composite, Decorator, Façade, Flyweight ,Proxy, Chain of responsibility, Command, Interpreter, Iterator, Mediator, Observer.
Prerequisite	CSC 343 - Systems Analysis and Design
Textbook	<ul style="list-style-type: none">Design Patterns: Elements of Reusable Object-Oriented Software Addison-Wesley, Erich Gamma, Richard Helm, Ralph Johnson, John M. Vlissides.

CSC 456 - Distributed Systems (3-0-1)	
Course Description	Understanding the main characteristics of distributed systems and the various design choices required for building a distributed system such as: the architectural models varying from client/server to peer-to-peer, grid-computing; the communication models varying from client-pull (RPC/RMI, Message Queuing, ...) to server-push models (publish-subscribe, ...); the synchronization techniques based on system clock, on logical clock (timestamp) and on token ring; the standard middlewares such as RPC, RMI, Corba and SOAP.



Prerequisite	CSC 329 - Computer Networks.
Textbook	<ul style="list-style-type: none"> o Distributed Systems: Concepts and Design by G. Coulouris, J. Dollimore and T. Kindberg. o Distributed Systems: Principles and Paradigms by A. S. Tanenbaum and M. V. Steen. o Distributed Computing: Concepts and Applications by M.L Liu.
Course Objectives	The course aims at giving the students a broad foundation in the fundamental concepts of distributed systems accompanied by specific project to develop the basic skills in network programming using RMI or RPC. It introduces the basic architectural models of distributed systems as well as the communication paradigms such as Publish/Subscribe, Message passing, Remote Procedure Call/ Remote Method Invocation, Message Queuing, etc. Besides, it presents various techniques of synchronization. It aims too to introduce distributed algorithms such election, mutual exclusion, etc.

CSC 459 - Net-Centric Computing (3-0-1)	
Course Description	Overview of most important distributed algorithms such as election, mutual exclusion, termination detection and concurrency control; Object based distributed systems concepts and the CORBA standard middleware; Introduction to component based distributed systems with focus on implementation issues and on related technologies; SOA and Web-services technologies with focus on SOAP and WSDL; Advanced distributed computing models such peer-to-peer and Grid computing with emphasis on related technologies such as Juxta, Net and Globus toolkit.
Prerequisite	CSC 329 - Computer Networks.
Textbook	<ul style="list-style-type: none"> o Distributed Systems: Concepts and Design by G. Coulouris, J. Dollimore and T. Kindberg. o Distributed Systems: Principles and Paradigms by A.S. Tanenbaum and M.V. Steen.

CSC 462 - Machine Learning (3-0-1)	
Course Description	This course gives an overview to machine learning concepts, techniques, and algorithms. Topics include: inductive learning, decision trees, artificial neural networks, instance-based learning, clustering, reinforcement learning, and some examples of application domains.
Prerequisite	CSC 361- Artificial Intelligence.
Textbook	<ul style="list-style-type: none"> • Machine Learning, Last edition, by Tom M. Mitchell. McGraw Hill.

CSC 463 - Knowledge Engineering and Expert Systems (3-0-1)	
Course Description	The course will provide an introduction to knowledge-based systems. Topics include: knowledge representation and inference, representing uncertainty using probabilistic logic and fuzzy logic, non-monotonic reasoning and knowledge acquisition. The students will do a programming project related to knowledge-based systems.
Prerequisite	CSC 361- Artificial Intelligence.
Textbook	<ul style="list-style-type: none"> o Expert Systems: Principles and Programming by Giarrantano and Riley, Thomson. o Introduction to Expert Systems by Peter Jackson, Addison-Wesley.

CSC 476 - Computer Graphics (3-0-1)	
Course Description	This course is an introduction to computer graphics, with an emphasis on application programming using OpenGL software. The topics covered are: Introduction to Computer Graphics - Graphics Display Devices - Drawing Based Graphics Primitives -



	Transformation of Object - 3D Affine Transformation.-Three-Dimensional Viewing - Tools for Raster Displays - Scan conversion Algorithms - Defining and Filling Regions of Pixel. - Filling Polygon-Defined Regions. - Aliasing :Anti-aliasing Techniques. - Creating more Shades and Colors.
Prerequisite	CSC 212 - Data Structures.
Textbook	<ul style="list-style-type: none"> o Hill, J.S. Jr., Computer Graphics Using OpenGL, 2nd Edition, Prentice Hall.

CSC 478 - Digital Image Processing and Analysis (3-O-1)	
Course Description	Introduction; Image Sensing and Acquisition; Some Basic Gray Level Transformations for Image Enhancement; Image Contrast Enhancement Using Histogram Processing; Image Smoothing Using Spatial Filters; Image Sharpening Using Spatial Filters; Point, Line and Edge Detection; Basic image compression procedures; Basic Global and Adaptive Thresholding for Image Segmentation; Optimal Global and Adaptive Thresholding for Image Segmentation; Region-Based Image Segmentation and Edge-Based Segmentation; Image Restoration in the Presence of Noise-Spatial Filtering; Image Enhancement in Frequency Domain; Objects Representation and Description; introduction to Object Recognition.
Prerequisite	CSC 212 - Data Structures.
Textbook	<ul style="list-style-type: none"> o Rafael C Gonzalez, Richard E Woods 2nd Edition, Digital Image Processing - Pearson Education 2003. o Image Processing Analysis and Machine Vision - Millman Sonka, Vaclav hlavac, Roger Boyle, Broos/colic.

CSC 484 - Information Retrieval (3-O-1)	
Course Description	This course is intended to prepare students to understand the underlying theories and methods for searching and retrieval of text and bibliographic information, analysis of relevance, utility, statistical and linguistic methods for automatic indexing, query formulation, output ranking, filtering methods, measures of retrieval effectiveness and retrieval experimentation Methodology.
Prerequisite	CSC 380 - Introduction to Database Concepts
Textbook	<ul style="list-style-type: none"> o Ricardo B. , Berthier R. : "Modern Information Retrieval" Addison Wesley.

CSC 489 - Selected Topics in Computer Science (3-O-1)	
Course Description	This course aims at introducing the students to a different area of Computer Science. This will be achieved by exposing them to new tools, techniques, and research in Computer Science.
Prerequisite	Student must finish 100 Credit Hours.
Textbook	Journals and Magazines relevant to the topics covered.

RULES AND REGULATION

| study system

- The student will be transferred from her current level to the next level if she passes successfully all courses of this level.
- Minimum academic burden of student is 12 academic units.
- If the student fails in one or more courses she should study them in accordance with the following restrictions:
 - o If the student fails in 12 academic units or more, she should retake only the courses in which she failed at this level. She is not allowed to register for more courses.



- If the student fails in fewer than 12 academic units, she should retake the courses in which she failed, in addition to courses from the levels following her current level based on the following:
 - The registration should be made for the courses in accordance with the restrictions of the academic plan and schedules.
 - The academic burden of the student should be linked to her accumulative average that should not be less than the minimum, which is 12 credit hours.
 - When unable to register a minimum of 12 hours of courses of the next level (due to schedule conflicts, not fulfilling the previous requirement, or all courses at this level have been completed by the student), the student should complete her minimum of 12 hours by taking courses from further levels. If she still cannot reach the 12 hours minimum, an exception is made and the student studies fewer than 12 credit hours for this semester.
- The number of the levels whose courses the student is allowed to register in during any semester is any consecutive academic levels.
- The registration process will be done automatically (without any need for requesting from the student if there is no remark on her) and the academic schedules must be ready prior the starting date of the academic year.

| ATTENDANCE

The CS department highly values commitment and enthusiasm in its students. Therefore, attendance of lectures and exams is very important, not just to your learning, but also to show your commitment, which is a very valuable personality trait that future employers truly appreciate. Hence, the department considers absence without a proper excuse a violation. A student who misses 25% of lectures without proper reasons is automatically prohibited from attending the final exam of the course in which she was absent. Also, missing an exam without a proper excuse is a big offense. Now, a proper reason or excuse means that you need to fill out a form, get it signed and approved by the course instructor, get your official documentation that proves your reasons for missing the lectures or the exam, and have it approved by a departmental committee. So, as you can see it is a long process and unless you have a severe emergency, please show your commitment and attend your lectures and exams.

| WITHDRAWAL

The student may withdraw in any semester without failing her courses if she submits a reason acceptable to the Dean of the college prior the start of the final examination by at least five weeks. This semester will be considered as part of the period required for fulfilling the graduation requirements.

The withdrawal semesters should not be more than two consecutive semesters or three non-consecutive semesters throughout the studies of the student in the university.

| RE-REGISTRATION

- The student whose record has been closed may apply for the restoration of her record under the same student ID before the suspension as per the following restrictions:
 - Should submit the re-registration request during four semesters (or two academic years for the colleges applying the academic year system) as from the closing date of the record.



- The Senate of the respective college and respective parties should approve the re-registration request submitted by the student
- If more than four semesters pass after the closing of the student's record (or two academic years for the colleges applying the academic year system) she can apply as new student without referring to her previous academic record provided that all admission terms must be applied on her and the Rector of the University may exempt her based on the following restrictions:
 - Obtaining the approval of the College to which the student is affiliated - for re-registering the student after considering the reasons for suspension with the possibility of stipulating the repetition of studying some academic syllabuses which have already been studied by the student prior her suspension based on the recommendations of the respective department.
 - The suspension period must not exceed eight semesters unless the student submits evidence confirming her work or she is engaged in a study related to the nature of her specialization and to be acceptable to the Senate of the College.
 - The student should not have been warned academically
 - The student have completed at least 25% of the graduation requirements
- The re-registration should not be done more than once and the Rector - when necessary - may exempt from this restriction.
- The re-registration will not be allowed for the student whose record has been closed due to disciplinary or educational reasons.

| GRADUATION

- The student will graduate after successfully fulfilling the graduation requirements in accordance with the academic plan provided that the accumulative GPA is not less than a "pass". If the student fails to acquire a passing GPA, the Senate of the College or its representative, and based on the recommendations of the respective department, may determine suitable courses to be studied by the student for promoting her GPA.
- The minimum required accumulative average for CS
- Graduate should not be less than (2.75) out of (5.00). This requirement is for those students who are enrolled from Academic Year 1432-1433H onwards.
- The student will not be considered a graduate unless the approval of the Senate of the University has been issued granting her the scientific grade.

| HONORS

The first honor degree will be granted to the student scoring an accumulative average from (4.75) to (5.00) upon graduation. The second honor degree will be granted to the student scoring an accumulative average from (4.25) to less than (4.75) upon graduation.

To obtain the first or second honor degree the following should be provided:

- The student must not fail in any course that she has studied in the university or in other universities.
- The student must have fulfilled the graduation requirements within the original study period of the program.
- The student should have studied at King Saud University more than 60% of the graduation requirements.



| FINAL EXAMINATIONS

- The Senate of the College will determine based on a proposal of the Section a grade for the semester works ranging between (40%) to (60%) of the final grade of the course.
- Restrictions for the Re-marking of Answer Papers of Examination
 - The applicant may submit a request to the section teaching the course for re-marking the answer sheets and then the request would be referred to the Senate of the College. The request should be made within one month as from the end of the final examination period.
 - In case of approving the request for remarking, the Senate of the College will form a committee of three members of teaching staff for remarking the answers sheets and the said committee will report on this matter to the Senate of the College for consideration and the decision of the Senate will be final.

| TRANSFER

- With the consent of the Dean of the College to which the student may be transferred to and from the department. Furthermore, the student maybe be transferred from outside the University based on the following restrictions:
 - The student should have been studied at a recognized university.
 - Should not be dismissed from the transferring university due to disciplinary or educational reasons.
 - Should fulfill the transfer terms determined by the Senate of the College.
 - The number of the units that the transferred student will be required to study at King Saud University should be not less than (60%) of the number of the units required for obtaining the Bachelor Degree at the University.
- With the consent of the two Deans of the respective Colleges the transfer from one college to another one may be done based on the terms determined by the Senate of the College to which the student will be transferred.
- After obtaining the consent of the Dean of the College the student may be transferred from one specialization to another specialization inside the College as per the restrictions prepared by the Senate of the College.

| DISMISSAL FROM THE UNIVERSITY

First: The student will be dismissed from the University in the following cases:

- If she receives three warnings and above for low accumulate average (2.75) and was given four chances for raising her accumulative average and failed to do so.
- If she has not fulfilled the graduation requirements within half of the period fixed for her graduation in addition to the period of the program. The Senate of the College may give an exceptional chance to the student for fulfilling the graduation requirements not exceeding double the original period based on the following terms:
 - The delay reason should be acceptable to the Senate of the College.
 - There should be an improvement on the performance of the student in the last two semesters.



Secondly: The Senate of the College may give the students who have been dismissed due to the exhaustion of the program period -a chance not exceeding two semesters based on the following conditions:

- The delay reason must be acceptable to the Senate of the College.
- The courses that are left to be studied by the student for her graduation should be studied within a period not exceeding two semesters.
- There should be an improvement on the performance of the student in the last two semesters.

Thirdly: The Senate of the College may give the students being dismissed due to warnings - a chance not exceeding two semesters based on the following terms:

- The delay reason must be acceptable to the Senate of the College.
- There should be an improvement on the performance of the student in the last two semesters.
- The student should be able to raise her accumulative average to (2.75) when being granted a chance to be registered for the available courses.

FINANCIAL AFFAIRS

| LOANS AND FINANCIAL AID

The university provides financial aid for those who need it. It also gives out loans to students with very relaxed payback plans. Through the Student Fund, you can apply for a loan, financial aid, or special needs aid, which is specific for students with special needs. For more information on their policies, please visit:

<http://sfd.ksu.edu.sa/>

You can also email them at:

stufund@ksu.edu.sa

| JOBS IN CAMPUS

Although being a CS student will probably consume all your free time, if you find at some point, that you have free time and would like to gain experience and make some money too, there is plenty of paying job opportunities on campus. These job opportunities are mostly financed by the Student Fund. To inquire about openings and options, please contact Ms. Najla Aboganeaha at:

naboganeaha@KSU.EDU.SA

ELECTRONIC SERVICES

| EDUGATE

During your studies at KSU, you will hear and use the word Edugate a lot. Edugate is the online registration system of KSU. This comprehensive, user-friendly system enables students to use many services such as registering and/or canceling courses, modifying, confirming and printing their schedules. It also allows students to view their grades and evaluate instructors.

You may start using the academic system by logging in using a user name (Student ID) and password (National ID by default - or your university email password). The student must confirm her registration within the first week of the semester. The minimum load is (12) units and the maximum is (20) units.



So, if you have not yet tried Edugate, now is the time to start. You can find it at:

<http://edugate.ksu.edu.sa>

And if you encounter any problems in logging in or using the system, please email:

support@student.ksu.edu.sa

Or call:

011- 467 5557

If you have any questions regarding Edugate, please email:

edugate@ksu.edu.sa

STUDENT EMAIL

Student E-mail is private window for faculty and staff to communicate with student. Each student has student e-mail where username is the Student ID, and password is the national ID number. If student ID is 433000000, then your e-mail address will be:

433000000@student.ksu.edu.sa. Student should activate her student email in order to receive e-mails.

Student Email URL: <http://etc.ksu.edu.sa/studentmail>



LEARNING MANAGEMENT SYSTEM (LMS)

Electronic program designed to help manage, follow-up and evaluate training courses and education. It is one of the most important tools of modern distance education. Student can sign in using his email.

LMS URL: <http://lms.ksu.edu.sa/webapps/login/custom/BBLEARN/login.jsp>



E-LIBRARY

Deanship of Library Affairs links you to more than 37 databases to help with your research. Each database contains thousands of articles from different journals, which you search simultaneously. You can cover a lot of ground quickly using databases, finding more articles with higher relevancy than searching in individual journals. The majority of resources can be accessed on and off campus, by following the links from Databases A-Z or Databases by subject after login to the Library Portal by the following link:

<http://access.library.ksu.edu.sa>

Database examples:





| IMPORTANT LINKS

King Saud University
<http://ksu.edu.sa/>



College of Computer and Information Sciences
<http://ccis.ksu.edu.sa/>



Computer Science Department
<http://ccis.ksu.edu.sa/ar/cs>



Online Academic Portal
<https://edugate.ksu.edu.sa/ksu/ui/home.faces>



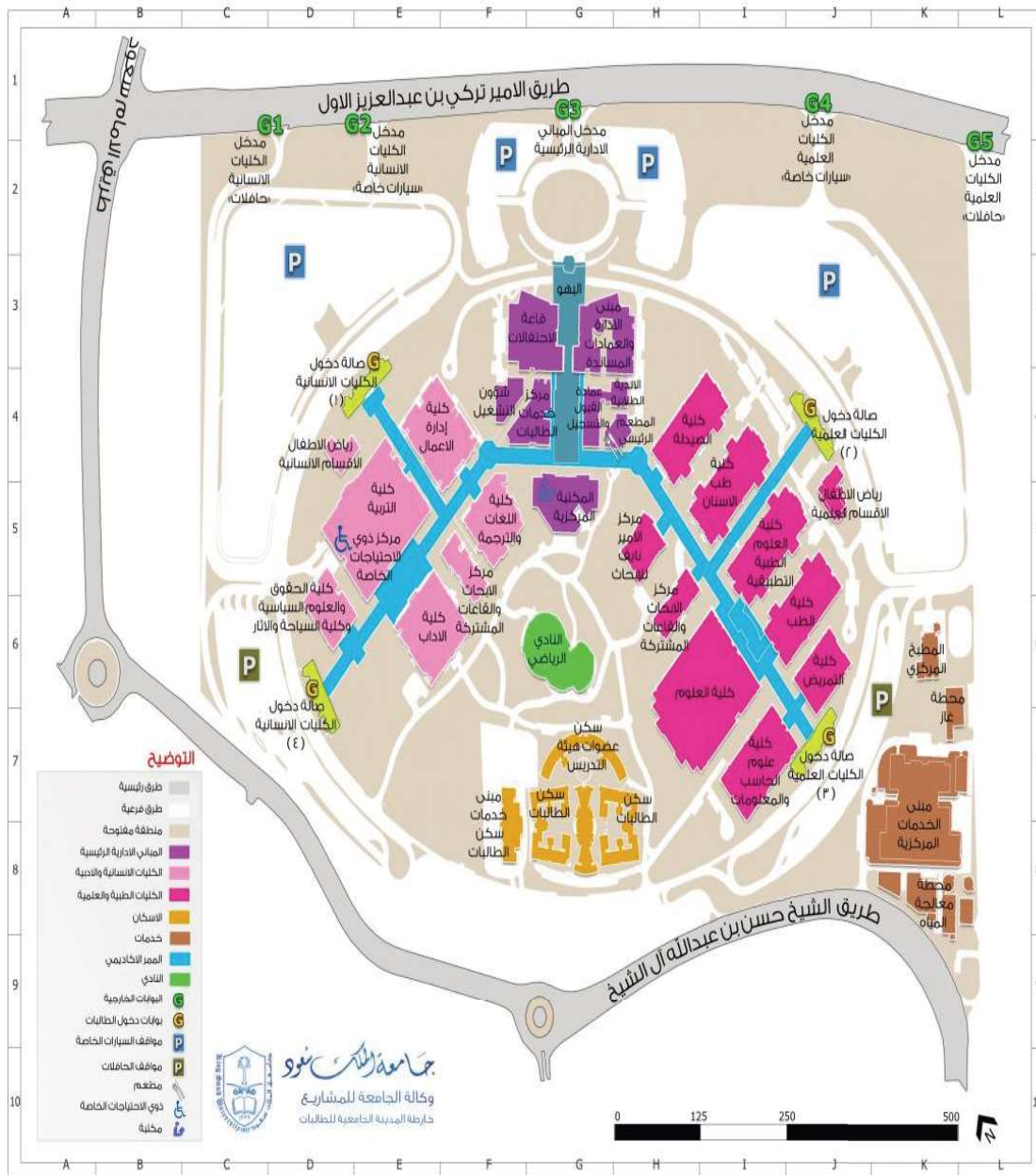
Library Portal
<http://library.ksu.edu.sa/en/>



Learning Management System
<http://lms.ksu.edu.sa/webapps/login/custom/BBLEARN/login.jsp>

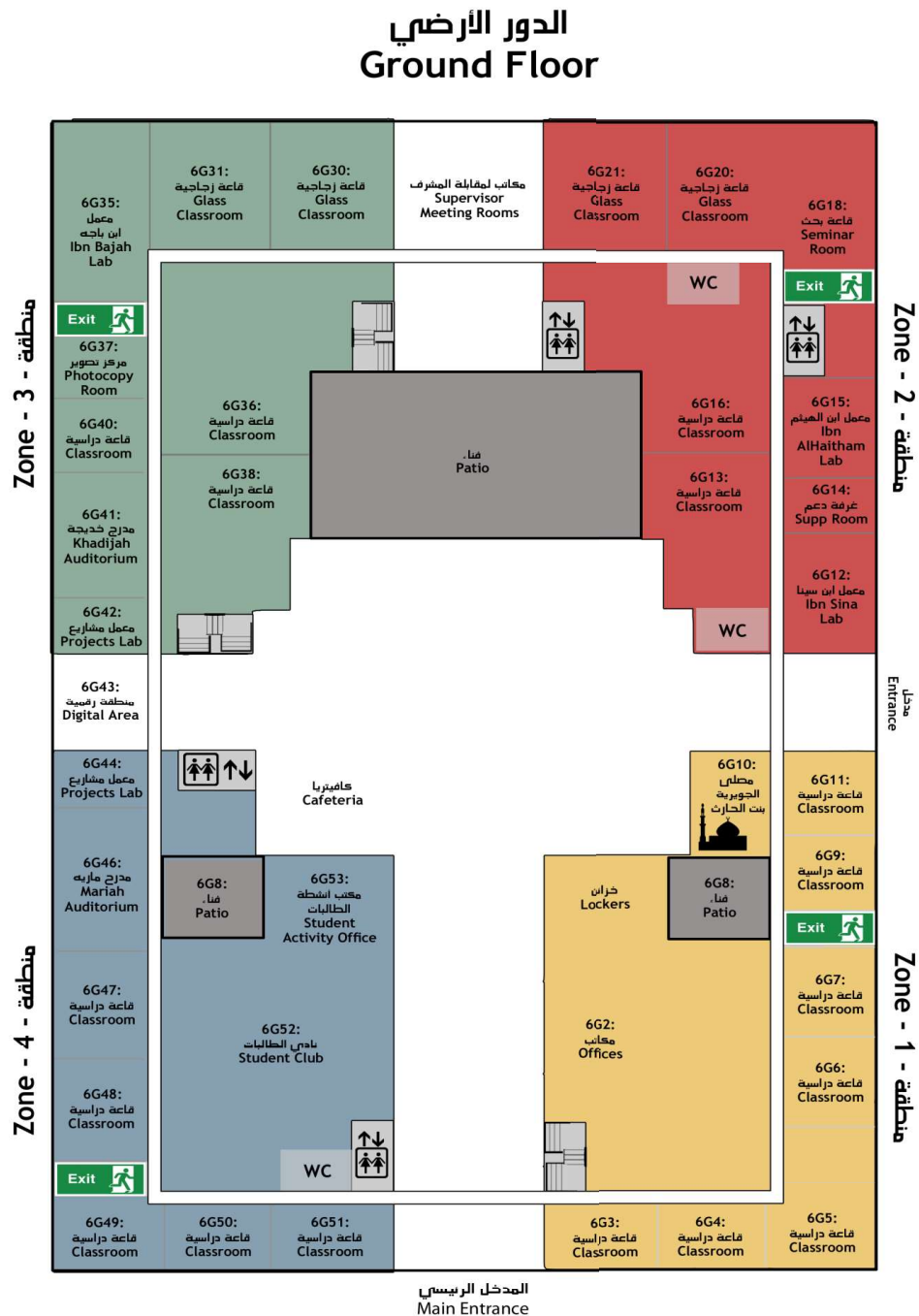


CAMPUS MAP

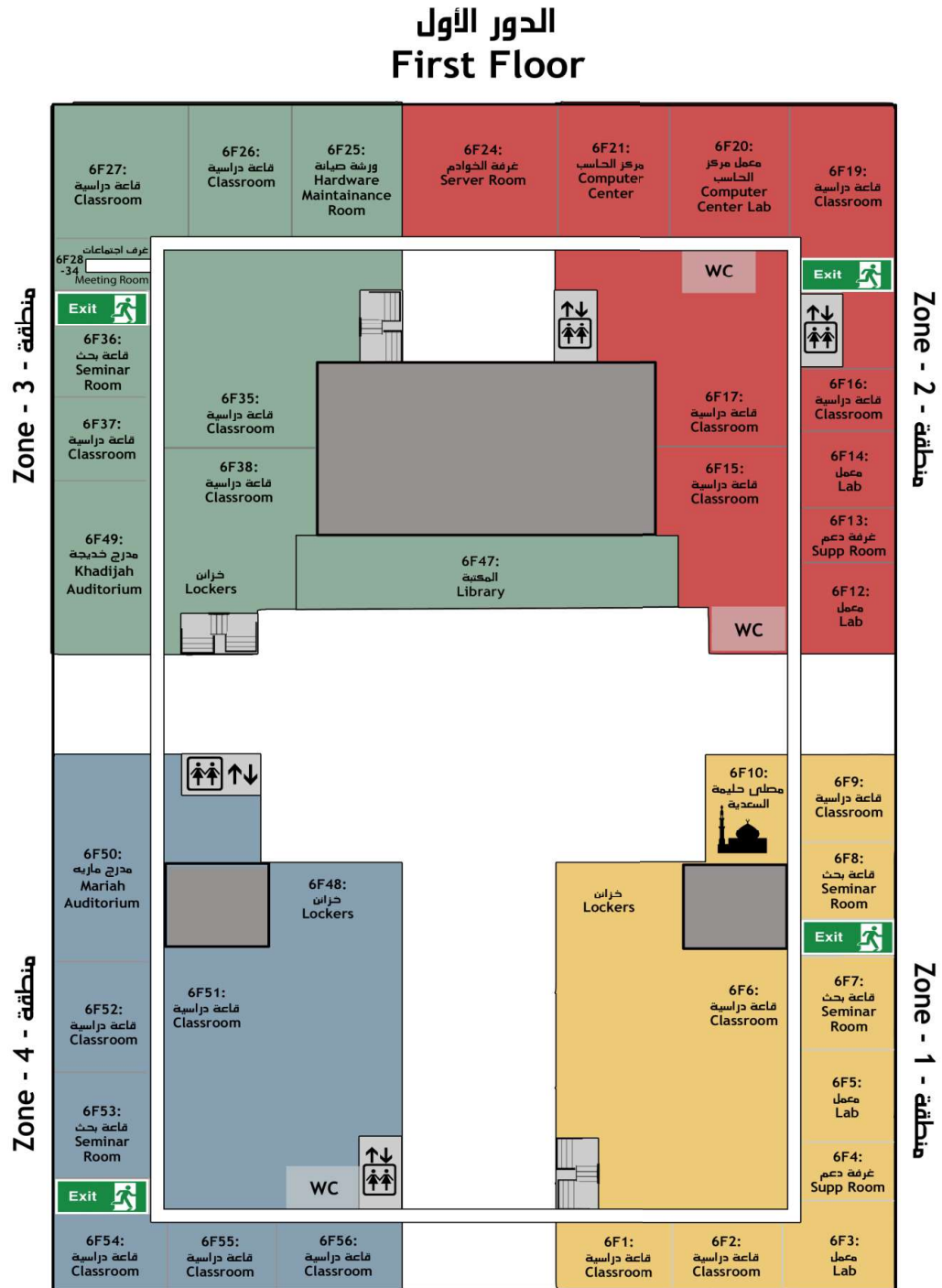


COLLEGE MAP

A. Ground Floor:



B. First Floor:





C. Second Floor:

