CS Students Handbook

The guide to completing the Master degree in Computer science

- Introduction to Computer Science
- Master Program
- Registration Procedures
- Faculty and Staff
- Research
- Contacts

CS Student Handbook
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TABLE OF CONTENTS

WELCOME TO THE COMPUTER SCIENCE DEPARTMENT

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 a 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 international computing accreditation commission ABET.

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 Programaims to promote scientific research and to prepare specializes scientists and qualified research staffs as well as to find solutions to problems of computer science, in both the private and the public, and to give students in the program means, methods and scientific methodologies necessary for those who are distinctive in information technology sectors.

We invite you to read the booklet, browse our website, visit our campus, andcontact 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.

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1 INTRODUCTION

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, health care, business, remote sensing, etc.

Computer Science Department is the largest departments in the College of Computer and Information Sciences at King Saud University. It was established in 1404/1405.Since then Master program 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 international universities. Faculty members are involved in teaching and research. Their research activities find applications in various science fields.

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

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

2 Master of Science in Computer Science Thesis/Courses option

3.1 Admission Requirements:

In addition to the conditions enumerated in the 15th article of the unified law organizing the graduate studies in Saudi universities, the candidate has to fit the following criteria:

- Holding a B.Sc. degree in Computer Science or equivalent,
- A minimum of a very good GPA in the BS program
- A TOEFL score of 450 at least.
- A GRE score of 144 at least in the quantitative section of the exam or score of 70% at least in the "*Alqudorataljamiah*" exam.
  (Link: http://www.qiyas.sa/Tests/LearningTests/Pages/AcademicAbilitiesTest.aspx)

Besides, the department of Computer Science may grant provisional approval to candidates holding a Bachelor degree in a different area with the requirement that they succeed in Bachelor level courses in the following fields: structured programming, data structures, operating systems, discrete mathematics.

3.2 Degree Names:

Master of Science in Computer Science (Non-thesis option)

Master of Science in Computer Science (thesis option)

3.3.1Master of Science in Computer Science: Non-thesis option

Program objective

- Cater for the current and future needs of the Saudi market in terms of highly qualified computer science professionals. To this end, a strong emphasis will be put on these areas: databases, networks, graphics, and software engineering. These areas are the cornerstones of today's information technology.
- Give the graduates a better chance to consolidate their knowledge as well as acquire a sound methodological approach to help them in the analysis, design and implementation of complex systems.
- Bridge the gap between the academia and the industrial world and develop a mutually-fruitful cooperation between these institutions. Since the MS student projects are designed to be conducted concomitantly with local institutions.

Degree Requirements

- The student has to complete a minimum of 43 credit hours of graduate courses.
- These credit hours have to include a research project.

Program Structure

Courses	Credit hours
7 core courses	19
8 elective courses	24
Total	43

a. Core Courses:

All students must take these courses.

Course Code	Course Title	Credit Hours
CSC 512	Algorithms Analysis and Design	3
CSC 524	Computer Networks	3
CSC 541	Advanced Software Engineering	3
CSC 581	Advanced Database Systems	3
CSC 595	Seminar and Discussions	2
CSC 597	Project 1	2
CSC 598	Project 2	3
Total		19

b. Elective Courses

List A: The department chooses three courses from the following list:

Course Code	Course Title	Credit Hours
CSC 519	Computer Security	3
CSC 543	Software Quality Management	3
CSC 551	Automata, Calculability and Formal Languages	3
CSC 562	Artificial Intelligence	3
CSC 572	Advanced Computer Graphics	3
CSC 587	Web Databases and Information Retrieval	3
CSC 588	Data Warehouse and Mining Systems	3

List B: The department chooses five courses from the following list:

Course Code	Course Title	Credit Hours
CSC 520	Networking in the TCP/IP Environment	3
CSC 523	Distributed Systems	3
CSC 525	Distributed Real-Time Systems	3

CSC 526	Parallel Processing	3
CSC 527	Design and Implementation of Real-Time systems	3
CSC 528	Interconnection Networks	3
CSC 529	Selected Topics in Computer Systems	3
CSC 530	High-Performance Computations	3
CSC 535	New Advances in Programming Languages	3
CSC 546	Designing Object-Oriented Software Systems	3
CSC 547	Software Measurements	3
CSC 548	Software Projects Management	3
CSC 549	Selected Topics in Software Engineering	3
CSC 558	Pattern Recognition and Image Processing	
CSC 561	Expert Systems and Knowledge Engineering Applications	3
CSC 563	Neural Networks and Machine Learning Applications	3
CSC 566	Advanced Applications of Pattern Recognition and Machine Learning	3
CSC 567	E-Business and its applications in Large Enterprises	3
CSC 569	Selected Topics in Artificial Intelligence	3
CSC 573	Numerical Algorithms and their Applications in Computer Science	3
CSC 574	Human-machine Communication and User-Interface Design	3
CSC 576	Graphics and Multimedia Applications	3
CSC 578	Advances in Multimedia Applications	3
CSC 579	Selected Topics in Computer Graphics	3
CSC 586	Hypermedia and Geographical Information Systems	3
CSC 589	Selected Topics in Database Systems	3
CSC 590	Selected Topics in Computer Applications	3
CEN 523	Fault-Tolerant Systems	3
CEN 545	Digital Image Processing	3

c. Program Schedule

First Semester

Course Code	Course Title	Credit Hours

CSC 512	Algorithms Analysis and Design	3
CSC 524	Computer Networks	3
CSC 541	Advanced Software Engineering	3
Total		9

Second Semester

Course Code	Course Title	Credit Hours
CSC 581	Advanced Database Systems	3
-	Course from List A	3
-	Course from List A	3
Total		9

Third Semester

Course Code	Course Title	Credit Hours
CSC 595	Seminar and Discussions	2
-	Course form List A	3
-	Course form List B	3
Total		8

Fourth Semester

Course Code	Course Title	Credit Hours
CSC 597	Project 1	2
-	Course from List B	3
-	Course from List B	3
Total		8

Fifth Semester

Course Code	Course Title	Credit Hours
CSC 598	Project 2	3

-	Course from List B	3
-	Course from List B	3
Total		9

3.3.2 Master of Science in Computer Science: Thesis option

Program objective

- Provide specialized studies in computer science
- Encourage fundamental and applied research in computer science
- Bridge the gap between the university and its industrial and technological environment
- Give the graduates a serious scientific and technical training letting them excel in their professional life

Degree Requirements

- Successful completion of a minimum of 26 credit hours of graduate courses.
- Completion and successful defense of a thesis.

Program Structure (thesis option):

Course code	Area	Credit hours
--	5 core courses	14
--	4 elective courses	12
CSC 600	Thesis	-
	Total	26

a. Core Courses:

All students must take these courses.

Course Code	Course Title	Credit Hours
CSC 512	Algorithms Analysis and Design	3
CSC 524	Computer Networks	3
CSC 541	Advanced Software Engineering	3
CSC 581	Advanced Database Systems	3
CSC 595	Seminar and Discussions	2
Total		14

b. Elective Courses:

The student must choose 4 courses from 2 tracks.

Track	Course	Course title	Credit

	code		hours
Computer Systems and Networks	CSC 519	Computer Security	3
	CSC 520	Networking in the TCP/IP Environment	3
	CSC 523	Distributed Systems	3
	CSC 527	Design and Implementation of Real-time Systems	3
	CSC 528	Interconnection Networks	3

Track	Course code	Course title	Credit hours
Database Systems	CSC 586	Hypermedia and Geographical Information Systems	3
	CSC 587	Web Databases and Information Retrieval	3
	CSC 588	Data Warehouse and Mining Systems	3

Track	Course code	Course title	Credit hours
Software Engineering	CSC 543	Software Quality Management	3
	CSC 546	Designing Object-Oriented Software Systems	3
	CSC 547	Software Measurements	3
	CSC 548	Software Projects Management	3

Track	Course code	Course title	Credit hours
Computer Graphics and Human-Machine Interaction	CSC 572	Advanced Computer Graphics	3
	CSC 573	Numerical Algorithms and their Applications in CS	3
	CSC 574	Human-Machine Communication and User-Interface Design	3
	CSC 576	Graphics and Multimedia Applications	3
	CSC 578	Advances in Multimedia Applications	3

Track	Course code	Course title	Credit hours
Artificial Intelligence	CSC 558	Pattern Recognition and Image Processing	3
	CSC 561	Expert Systems and Knowledge Engineering Applications	3
	CSC 562	Artificial Intelligence	3
	CSC 563	Neural Networks and Machine Learning Applications	3
	CSC 566	Advanced Applications of Pattern Recognition and Machine Learning	3
	CEN 545	Digital Image Processing	3

Track	Course code	Course title	Credit hours
Programming Languages	CSC 535	New Advances in Programming Languages	3
	CSC 551	Automata, Calculability and Formal Languages	3

CSC 552	Computational Linguistics	3

PROGRAM SCHEDULE

First Semester

Course Code	Course Title	Credit Hours
CSC 512	Algorithms Analysis and Design	3
CSC 524	Computer Networks	3
CSC 541	Advanced Software Engineering	3
Total		9

Second Semester

Course code	Course Title	Credit hours
CSC 581	Advanced Databases Systems	3
-	A course from the first chosen track	3
-	Another course from the second chosen track	3
Total		9

Third Semesters

Course code	Course Title	Credit hours
CSC 595	Seminar and Discussions	2
-	A course from the first chosen track	3
-	Another course from the second chosen track	3
Total		8

Fourth and Fifth Semesters

Course code	Course Title	Credit hours
CSC 600	Thesis	-

PROPOSAL SUBMISSION

Students should submit their proposals through Deanship of Graduate Studies' E-Services website.

Approval of the proposed research plans service: https://eservices.ksu.edu.sa/PRPA/

3.3.3 COURSES DESCRIPTIONS

The graduate program in Computer Science covers the major topics in Computer Science. It is our belief that the department must serve a wide stream of students, which will undoubtedly be coming with varying backgrounds and objectives. For this reason, the program proposed herein has been stretched out to cover most of the important areas of computer science: Computer Networks, Database Systems, Software Engineering, Computer graphics and Human-machine Interaction, Artificial Intelligence, and Programming Languages.

CSC 512: Algorithms Analysis and Design (3+0)

Review of major data structures - Basic design techniques - Divide and conquer - Greedy method - Backtracking - Dynamic programming - Heuristics - Parallel algorithms - Analysis of algorithms - Orders of magnitude - Lower bound theory - Time and space complexity - NP-hard and NP-complete problems - applications and examples - Correctness of algorithms - Structure of algorithms.

CSC 519: Computer Security (3+0)

Threats and vulnerabilities - Identification and authentication - Access control - Intrusion detection - Encryption and privacy - Security policies and their evaluation.

CSC 520: Networking in the TCP/IP Environment (3+0)

Review of Network Technologies for LANs and WANs - Inter-networking Concepts and Architectures - Internet Addressing - Internet Routing Protocols - Internet Error Control - Protocol Layering in Internet environments - Application development in a TCP/IP environment - Standard TCP/IP applications – other related topics.

CSC 523: Distributed Systems (3+0)

General concepts of operating systems - Distribution: concepts and definitions - Architecture of distributed systems - Control in distributed systems: centralized versus distributed - Concept and forms of transparency in distributed systems - Naming concepts - classification and Implementation of different naming schemes – Inter-process communication: concepts, mechanisms, and implementation - Resource allocation and implication on load sharing - Load balancing - Process migration - Clock synchronization: concepts, problems and

solutions - Concurrency control in distributed environments: concepts, approaches and implementation.

CSC 524: Computer Networks (3+0)

Review of general concepts - LAN and WAN - Management of token ring networks - ISO model of seven layers - Network standard specifications - Urban networks - Large bandwidth networks - Gates - Network design and performance - Network programming - Error detection - Security and privacy.

CSC 525: Distributed Real-Time Systems (3+0)

Real-time issues and concepts - Time handling task scheduling problems - Resource scheduling - Inter-process communication in real-time environments - Real-time communication protocols - Predictability problem.

CSC 526: Parallel Processing (3+0)

Introduction to parallel processing - Architectures and models for parallel machines - Design and evaluation of parallel algorithms - Communication in a parallel processing environment - Writing parallel applications using Multi-Pascal tool - Writing parallel applications using PVM.

CSC 527: Design and Implementation of Real-Time Systems (3+0)

Real-Time issues and concepts - Real-Time Systems: definitions and classification - concepts of hard real-time systems and soft real-time systems - the concept of time and its importance in Real-Time Systems - Real-Time applications and support Real-Time Languages - Specific hardware interfaces for Real-Time Systems: real-time data collection and processing - Different types and levels of Control in Real-Time Systems (e.g. closed-loop control) - Real-Time Operating Systems - Predictability in Real-Time Systems - Introduction to methodologies for the design and implementation of Real-Time Systems - Cases studies.

CSC 528: Interconnection Networks (3+0)

Introduction and background - The graph-theoretical approach - Criteria to evaluate interconnection networks - Issues in designing interconnection networks - Classification and evaluation - The need for higher-performance computers - Flynn's taxonomy - Computational speedup - Factors that limit speedup - Grosch's and Amdahl's laws - Different interconnection networks: Mesh Networks - Binary Tree Networks - Hypertree Networks - Pyramid Networks - Butterfly Networks - Hypercube Networks - Cube Connected Cycles Networks - Shuffle Exchange Networks - de Bruijn Networks - Star Networks and Star-Connected Cycle Networks.

CSC 529: Selected Topics in Computer Systems (3+0)

Contemporary topics and research directions in computer systems.

CSC 530: High Performance Computations (3+0)

Review of major causes of performance degradation in scientific computing - The scheduling problem: classification and solutions - Task scheduling - Load balancing algorithms - Deadline scheduling for real-time systems.

CSC 535: New Advances in Programming Languages (3+0)

Review of formal languages - Standard models of programming languages - Concept of typing - Scope of variables - Subroutines - Logical programming - Execution environment - Visual programming - Object oriented programming - Design and programming of VOOR languages - Programming in visual environment - Visual programming and software engineering - Contemporary topics.

CSC 541: Advanced Software Engineering (3+0)

Review of known methodologies - Analysis of software requirements - Real Time software - Software Cost - Software Project Management - Software Quality - Software Testing - Software Measurements - Software Risk Management - Introduction to Object Programming - Case Study.

CSC 543: Software Quality Management (3+0)

Introduction to Quality Management Systems and Total Quality - ISO Quality System and its application to software industry - Capability Maturity Model (CMM) and its five levels - Tick IT system - Quality Assurance - Application of Quality Systems - Software Tools for Quality - Case Study.

CSC546: Designing Object-Oriented Software Systems (3+0)

Review of known methodologies and principles of Object Engineering - Unified Modeling Language (UML) - Comparative study of available methodologies - Conversion methodology to object design - Evaluation of object design and use of object metrics - Use of object methodology - Case Study.

CSC 547: Software Measurements (3+0)

Importance of measurements and metrics in software - Basics of measurements - Experimental measurements - Collection of measurements - Analysis of measurements - Measurements used for length, size, effort and time - Zeipf law - Structure measurements - Information flow measurements - Building software metrics - Planning for software measurements - Measurements of object oriented software - Tools used in software measurements - Case study.

CSC 548: Software Projects Management (3+0)

Introduction to project management - Basic activities of software project management - Charts used in project management - Evaluation and acceptance of project phases - Advanced techniques of project management as for maintenance - Project scheduling - Project insurance and arbitrage - Project management tools - Case study.

CSC 549: Selected Topics in Software Engineering (3+0)

New trends in the area of software engineering - methodology of application - current research topics.

CSC 551: Automata, Calculability and Formal Languages (3+0)

Finite state automata and regular expressions - Regular sets - the Pumping lemma - Context-free grammars and derivation trees - Chomsky and Greiback normal forms - Context-free languages - Recognizers - Turing machines - recursive and recursively innumerable languages - Decidability problems - The halting problem - Rice's theorem and Chomsky hierarchy.

CSC 558: Pattern Recognition and Image Processing (3+0)

Digital Image fundamentals - Images enhancement in spatial and frequency domain - Images degradation and restoration - Detection of discontinuities in images - Images segmentation - Representation of objects - Boundary, Regional, and Relational descriptors – Patterns and Pattern Classes – Recognition based on Decision Theoretic and Structural Methods
- new topics in pattern recognition and image processing.

CSC 561: Expert Systems and Knowledge Engineering Applications (3+0)

A brief introduction to expert systems – A brief presentation of knowledge representation paradigms (the emphasis will be put on rule-based systems) - inference rules - resolution - basic aspects of reasoning under uncertainty - ·Case studies: MYCIN - CLIPS - Application Modeling in CLIPS.

CSC 562: Artificial Intelligence (3+0)

Introduction to AI problem solving - Knowledge representation - Automatic theorem proving - Learning by example - Learning by analogy - Learning by discovery - Self-reference and Self-production - Reasoning: causal reasoning - commonsense reasoning - default reasoning - measure-based approaches - reasoning with uncertainty - Confirmation theory - Belief theory - Necessity and possibility theory - Theory of endorsements - Spatial and temporal reasoning.

CSC 563: Neural Network and Machine Learning Applications (3+0)

Approaches to machine learning: Explanation-based learning - Learning by observation and discovery - Analogical and Case-based Learning - Learning Models - Evaluation of Learning Algorithms - Experimental Methodology - Empirical Learning - Reinforced Learning and Genetic algorithms - Neural Computations: examples and applications - History of Artificial Neural System development - Fundamental Concepts and Models of Artificial Neural systems. Applications: Neural Network Simulation and Implementations and other emerging applications of Neural Algorithms and Systems.

CSC 566: Advanced Applications of Pattern Recognition and Machine Learning (3+0)

The content of the course may be designed from the areas: Image processing and analysis - Speech processing - Geographical Information System - Fuzzy reasoning - Computer vision - perception and any other emerging relevant topic(s).

CSC 567: E-Business and its applications in large enterprises (3+0)

Computer architecture and its application in large enterprises - Modeling - introduction to ERP - Java Management Extensions technology JMX - Language and platform-independent protocol for peer-to-peer networking - JXTA - Case studies in distributed computing - Large enterprises and computer security.

CSC 569: Selected Topics in Artificial Intelligence (3+0)

Contemporary topics and research in Artificial Intelligence.

CSC 572: Advanced Computer Graphics (3+0)

Mathematics for computer graphics in three dimensions - Hierarchical representation and basic shapes - Surfaces and curves in three dimensions - Three dimensional modeling - Solid bodies modeling - Three dimensional viewing - Visible surface - Illumination and shades - Texture mapping - Computer Graphics Systems: Open GL - Animation techniques - Case study.

CSC 573: Numerical Algorithms and their Applications in CS (3+0)

Review of vectors and matrices: transformation matrices in computer graphics, Computations of the normal vector to a surface - Introduction to Probability and Random Variables: Probability Density Functions in image processing - Introduction to Numerical differentiation and integration - Newton's and Gradient algorithms in image processing - Least-Squares algorithm, Curve fitting, COCOMO model calibration - Steganography algorithms - Introduction to MATLAB.

CSC 574: Human-machine Communication and User-Interface Design (3+0)

Introduction to Human sensory systems - Human memory and Human Learning User Interface Styles: Design Considerations - Dialog Content Design - Design Methodology - Visual Design - Basic Interaction-handling Models - Introduction to Human-Computer Dialog Management - Introduction to Visual Form Recognition: Pen Computing - Photography and other Visual Forms such as Finger Print Input Systems - Font and Symbol Design - Introduction to Speech Computing and other Forms of Input/Output - Speech Presentation - Speech Understanding and Recognition - Speech Generation - Gesture and Odor Input/ Output.

CSC 576: Graphics and Multimedia Applications (3+0)

Traditional Animation - Computer Animation Tools - 3D-Animation Environment - Special Animation Techniques - Today's Animation Systems (Hardware/Software) - Applications of Computer Animation - Introduction to Virtual Reality and its applications.

CSC 578: Advances in Multimedia Applications (3+0)

Recent advances in Multimedia technology - Hardware/Software Architectures - Tools and Environments - Virtual Reality Technology (Hardware/Software) - Multimedia Components in Virtual Reality Systems.

CSC 579: Selected Topics in Computer Graphics (3+0)
New topics, methods, techniques and tools in computer graphics - research directions.

CSC 581: Advanced Database Systems (3+0)
Review of Basic Modeling Techniques and DBMS Concepts - Components and Functions of a DBMS - Query processing and optimization - Concurrency Control - Security - Recovery - Integrity in DBMSs - Distributed Databases - Study of Intelligent Database Systems - Study of different Object-Oriented Data Models - Introduction to XML technologies - Project: Development of a database application.

CSC 586: Hypermedia and Geographical Information Systems (3+0)
Multimedia and hypermedia Systems - Different Development Methodologies - Architectures - Query processing and Browsing Tools - Development of Hypermedia Systems on the World Wide Web (www) Databases - WWW and its Browsing Tools - Data Modeling Techniques and Development of Data Warehouse in an Architectured Environment - Conceptual Modeling and Analysis of Spatial Data - Spatial Reasoning - Query Processing - Indexing Techniques - Data Storage - Hypermaps - Spatial Knowledge - different application domains - Project: Development of a prototype system.

CSC 587: Web Databases and Information Retrieval (3+0)
Modeling - Query operations - Markup languages - XML technologies and its applications - Searching the Web - IR models and Languages - Indexing and Searching - Digital libraries - Project: Designing and developing parts of IR Systems.

CSC 588: Data Warehouse and Mining Systems (3+0)
Introduction to Decision Support Systems (DSS) - Development of DSS - Data Modeling Techniques and Development of Data Warehouse in an architectured Environment - Study of different Data Warehouse Architectures and Development Techniques - User-Interface for Data Warehouses - Data Mining - Application Domains for Data Warehouse and Mining - Project: Development of a Prototypical Data Warehouse/Mining System

CSC 589: Selected Topics in Database Systems (3+0)
Contemporary topics - recent research directions.

CSC 590: Selected Topics in Computer Applications (3+0)
Selected Topics in Computer Applications.

CSC 595: Seminar and Discussions (2+0)

The student is supposed to carry out a survey research study (theoretical and technical) on topics agreed upon with the course instructor – The student will present his findings in a written report and in a seminar.

CSC 597: Project 1 (2+0)

Projects are of applied type and are meant to solve problems arising from business, governmental, or other sectors. The student selects one of the projects proposed by staff. The department project committee will manage the projects announcement and assignment. The student will present his findings in a written report that conforms to the requirements and specifications set up by the department. This course is dedicated to the first part of the project, the analysis and design part.

CSC 598: Project 2 (3+0)

This course is dedicated to the second part of the project, the implementation and test part.

CEN 523: Fail-Tolerant Computer Systems (3+0)

Systems and their failures - Faults - errors and failures - Structuring and faults - Fault error detection - Damage assessment and confinement - Error recovery and fault diagnoses.

CEN 545: Digital Image Processing (3+0)

Physical descriptions of continuous images - Sampling and quantization of images - Matrix representation of image forming - Filtering - Restoration and enhancement - Feature extraction and scene analysis.

CSC 600: Thesis

The thesis research topic is chosen by the student and approved by the Department Council.

d. Rules and Regulations

Rules and regulation for graduate studies in computer science department follow the Unified Law Organizing the Graduate Studies in Saudi Universities and The Organizational and Executive Rules and Procedures for Graduate Studies at King Saud University.

Admission Requirements

- The Deanship of Graduate Studies admits students into graduate programs and registers them in coordination with the Deanship of Admission and Registration. Admission procedures are as follows:
    - Applicants should apply and submit full documents to the Deanship of Graduate Studies the first semester of the academic year preceding the one they would wish to enroll in.
    - The Deanship of Graduate Studies forwards documents to the department.

- Department Council recommends students for admission, and documents of applicants are returned to the Deanship of Graduate Studies in two weeks' time from the date of recommendation.
- The Graduate Studies Deanship Council issues decisions of students' admission.
- The Deanship of Graduate Studies forwards all documents to the Deanship of Admission and Registration (keeping copies in the meanwhile); and provides department with lists of admitted students at least two weeks prior to registration period.

- No student shall be allowed enrolment in two graduate programs at the same time.

DROP AND POSTPONEMENT

- **Admission Postponement**:

Department Council, College Dean and the Dean of Graduate Studies may approve postponement of students' admission into a program for a maximum period of two semesters; the period will not be counted within the time limit for obtaining the degree. Requests for postponement should be submitted at least two weeks before the start of the semester.

- **Registration Postponement:**

Department Council, College Dean and the Dean of Graduate Studies may approve postponement of students' registration under the following conditions:

- The student must have successfully completed at least one semester in the program or covered a substantial part of the thesis.
- The time limit of postponement should not exceed four semesters (two years of study).
- Requests for postponement should be submitted at least two weeks before the start of the semester.
- Postponement Period will not be counted within the maximum time limit for obtaining the degree.

- **Drop of a Semester**

The student may (after registering) drop all courses of the semester according to the following regulations:

- Applying to the Head of the Department at least five weeks before the final exam period.
- Receiving approval of Department Council and Deans of both College and Graduate Studies.
- Semester should not be part of the Additional Opportunity period.
- Semester counts as part of Postponement Period.

- Student shall be considered as having failed all courses he registered in (in the dropped semester) if not abiding by the above rules of dropping.

WITHDRAWAL AND INTERRUPTION

- **Withdrawal**

A student who voluntarily withdraws from a master program will be treated as a new applicant on deciding to rejoin. All updates of conditions will be applied to his case. Withdrawal becomes effective when accorded with the following regulations:

- The student should apply (for withdrawal) to the Deanship of Graduate Studies before commencement of final exams.
- The Deanship of Graduate Studies ought to notify both the Deanship of Admission and Registration and the department of a student's withdrawal in two weeks' time from the date of completion of withdrawal procedures.

- **Interruption of Study**

The student shall be considered as a dropout and his record as closed in the following cases:

- If accepted in the program and did not register on time.
- If registered in the courses and did not attend them.

- **Termination of Enrolment**

Student's enrolment in the graduate program will be terminated by a decision of the Graduate Studies Deanship Council in the following cases:

- If accepted in the program and did not register during regular registration period.
- If failed to pass supplementary courses (where applicable) in accordance with its required conditions.
- If dropping courses for a whole semester or withdrawing from the program without an acceptable excuse.
- If proving not to be serious in study or neglecting academic obligations stated in (Item 7) of above Regulations.
- If cumulative average drops below "Very Good" in two consecutive semesters.
- If using up all permissible postponement periods, identified in (Item 4), without completing the degree.
- If breaching ethics during course work or thesis writing, or breaking university rules or regulations.
- If failing the comprehensive exam (where applicable) twice.

- If thesis exam committee finds it not discussable before or unacceptable after the defense.
- If not obtaining degree within maximum time limit specified in (Item 16).

Resuming Study:

A dropout or a terminated student who was impeded by personal obstacles, that both Department and College Councils excuse, may resume studying in a program on the subsequent recommendation of the Graduate Studies Deanship Council and the final approval of the University Council. However, the following conditions should also be taken into account:

- On the lapse of more than six semesters, a terminated student shall be treated as a new student regardless of the number of semesters completed in the program.

- On return after six semesters or less, a terminated student may be asked to repeat some of the courses already covered. Courses should be specified by Department and College Councils and approved by the Graduate Studies Deanship Council; the courses studied earlier are to be counted within the cumulative grade average after resuming study; the period spent in the program before termination is also to be counted within the maximum time limit for obtaining the degree.

Additional Opportunities

- With the exception of Clause (5) of Item (8), the student whose grade average drops to less than "Very Good," may exceptionally be granted an extension period (technically called an additional opportunity) not exceeding in length two semesters to continue in the program; the recommendation of both Department and College Councils and approval of the Graduate Studies Deanship Council are necessary in this case.

- With the exception of Clause (10) of Item (8), a student (whose time limit for obtaining the degree has expired) may exceptionally be granted an extension, or additional opportunity (not exceeding in length two semesters). A report from the supervisor is to initiate procedures in this case, to be followed by the recommendation of Department and College Councils, the Graduate Studies Deanship Council, and the final approval of University Council.

- **Transfer to the University**

  Transfer of students to the university from another accredited university is possible upon the recommendation of both Department and College Councils and the Graduate Studies Deanship Council, taking into account the following regulations:

  - Local conditions for admission should apply to transfer students, in addition to any further conditions this department may deem necessary.
  - Student should not have been dismissed (regardless of reasons) from the transferring university.
  - Courses studied earlier may be transferred, according to the following regulations:
  - Courses should not have been completed more than six semesters ago.
  - Course content should be directly related to the program transferred to.
  - Courses transferred should not exceed in ratio thirty percent of the courses of the program transferred to.
  - Student's grade in transferred courses should minimally be "Very Good."
  - Courses transferred are not included in the computation of new cumulative average.
  - Transfer of courses should be based on recommendation of Department Council and the approval of both College and Graduate Studies Deanship Councils.

- **Transfer inside the University**

  The student may transfer from one major to another in the university on the recommendation of the department and college councils and approval of Graduate Studies Deanship Council. The following regulations should be taken into account:

  - Current conditions for admission should apply to transfer students in addition to any further conditions this department may deem necessary.
  - Courses already studied at the university may be transferred if the department find them corresponding to its program; they will be included in computing students' cumulative average.
  - Student's registration in previous department should not for any reason have been repealed.
  - Time spent in the program transferred from shall be counted within the maximum time limit for obtaining the degree.
  - Transfer from one program to another is allowed only once during the period set for obtaining the degree.

Exams of graduate courses in a master or doctorate program and recording of scores are conducted in accordance with the regulations in effect on the undergraduate level as issued by the Higher Education Council on its second session held on 11/6/1416 H, with the exception of the following:

- The passing grade in a graduate course is an average of "Good."
- Decisions on makeup exams and incomplete courses are made by Graduate Studies Deanship Council on recommendation of Department Council and approval of College Council.

e. FINANCIAL SUPPORTS

- Non-Employee Student is illegible for:
  - A monthly Incentive allowance 900 SR.
  - A yearly books and references allowance limited for regular period. The drop semester and postponement semester are not included.
  - an amount of 3000 SR printing allowance after discussion and the granting of the master degree and 5000 SR printing allowance for PhD student.

- Student employed at King Saud University is illegible for:
  - Books and references allowance twice during the academic year. The amount is specified according to the first grade of salary scale.
  - 3000 SR printing allowance after the discussion and the granting the master degree.

- Student employed in public sector outside the university does not deserve any allowances and bonuses.

- Student employed in the private sector has the same financial rights as non-Employee student.

a. KACST Supports for Graduate Studies' Researches

King Abdulaziz City for Science and Technology (KACST) provides Grant Program for Higher education such as Master's or PhD degrees. Graduate students are financially and technically supported by KACST.For more information and a research proposal submitting, Follow the link:http://gdrg.kacst.edu.sa/eng/default.aspx

b. Deanship of Scientific Research Supports

Research Center of the Female Scientific and Medical Colleges provides funds for graduate students with up to twenty thousand Saudi Riyals. Grants' regulations and criteria of graduate students are as follows:

- The proposal must have been approved by the Deanship of Graduate Studies.
- Publishing in ISI-indexed journals.
- When Publishing in ISI-indexed journals, writing acknowledgement for Research Center of the Female Scientific and Medical Colleges with the following format: "*This research project was supported by a grant from the "Research Center of the Female Scientific and Medical Colleges", Deanship of Scientific Research, King Saud University.*"

- Providing the Research Center with copy of the published research.

For more information and a funding support request submitting, follow the link http://dsrs.ksu.edu.sa/

c. Attending Conferences Funding

Graduate Student Conference Funding is provided by the Deanship of the Graduate Studies. The goal of the funding is to enable more KSU graduate students to make presentations at key conferences/ exhibitions in their fields or attend conferences and learn about the broader field of study to which they belong. This funding opportunity is available to individual graduate students.

- **Conference Funding Details**

  - Round-trip plane ticket costs, also for the companion of female student.
  - Registration fees for attending the conference.
  - Lump sum for the student with amount two thousand Saudi Riyals for local conferences, three thousand and five hundred Saudi Riyals for Arabic countries conferences, and five thousand Saudi Riyals for other countries.

- **Attending Conferences Regulations**

For the regulations of attending conferences and the application form, check Appendix A.

d. Reward of Scientific Publishing for Graduate Students

As a part of University vice Presidency of Graduate Studies and Scientific Research's keenness to encourage scientific publishing for graduate studies students, financial rewards for researchers are provided in accordance with following regulations:

- A ten thousand Saudi riyals reward is paid for each single publication derived from the Masters or PhD thesis and published in ISI journals.
- The reward is paid equally between the student and her supervisor.

- Rewards are a maximum of two publications for the Master's thesis, and four publications for the PhD's thesis.

Applications should be submitted with the Directory of publishing in ISI-indexed journals by the end of each semester to the Deanship of the Graduate Studies through this link:https://eservices.ksu.edu.sa/StudentResearchRewards/

f. Electronic Services

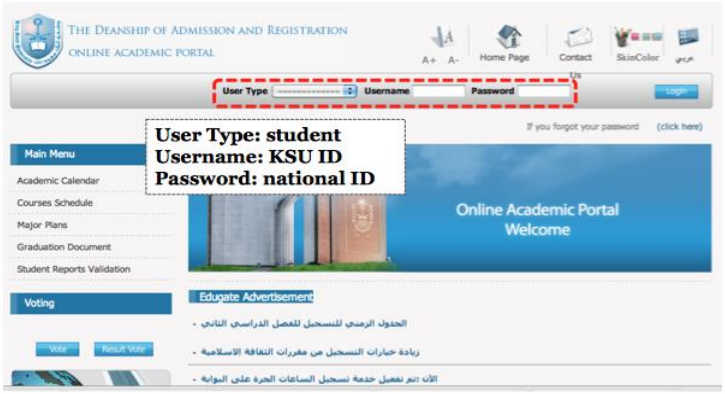
EduGate

The online academic portal provides arange of academic services that students can access including their schedules, results and study plan.

EduGateURL: https://edugate.ksu.edu.sa/ksu/init

Login:

To use edugate the student must login to the system using her Student ID as username and national ID as password. Student can change her password later



List of services:

Edugate provides list of service for student including

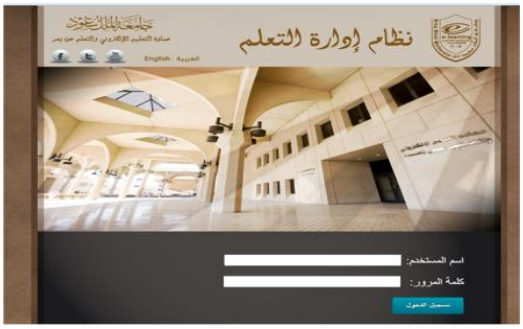
- Add/Drop Courses
- Offered Courses
- Withdrawal on a course
- Enter Academic Transaction (Withdrawal/ Postponement/ …)
- Academic Transcript
- Courses Results

STUDENT EMAIL

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

LMS is an 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.
LMS URL: http://lms.ksu.edu.sa/webapps/login/custom/BBLEARN/login.jsp



E-LIBRARY

The Central library at KSU strives for excellence in its research academic library system, which is constantly being reviewed, upgraded, and developed to serve faculty and students.

E-Library URL: http://library.ksu.edu.sa/en/

Deanship of Library Affair links the student to more than 37 databases to help with her research. Each database contains thousands of articles from different journals, which can be

searched simultaneously. The majority of resources can be accessed on and off campus, but student must login to the library portal on campus for the first time.

Database examples:

IMPORTANT LINK

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

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

Deanship of Graduate Studies
http://ksu.edu.sa/Deanships/DeanshipofGraduateStudies/Pages/Home.aspx

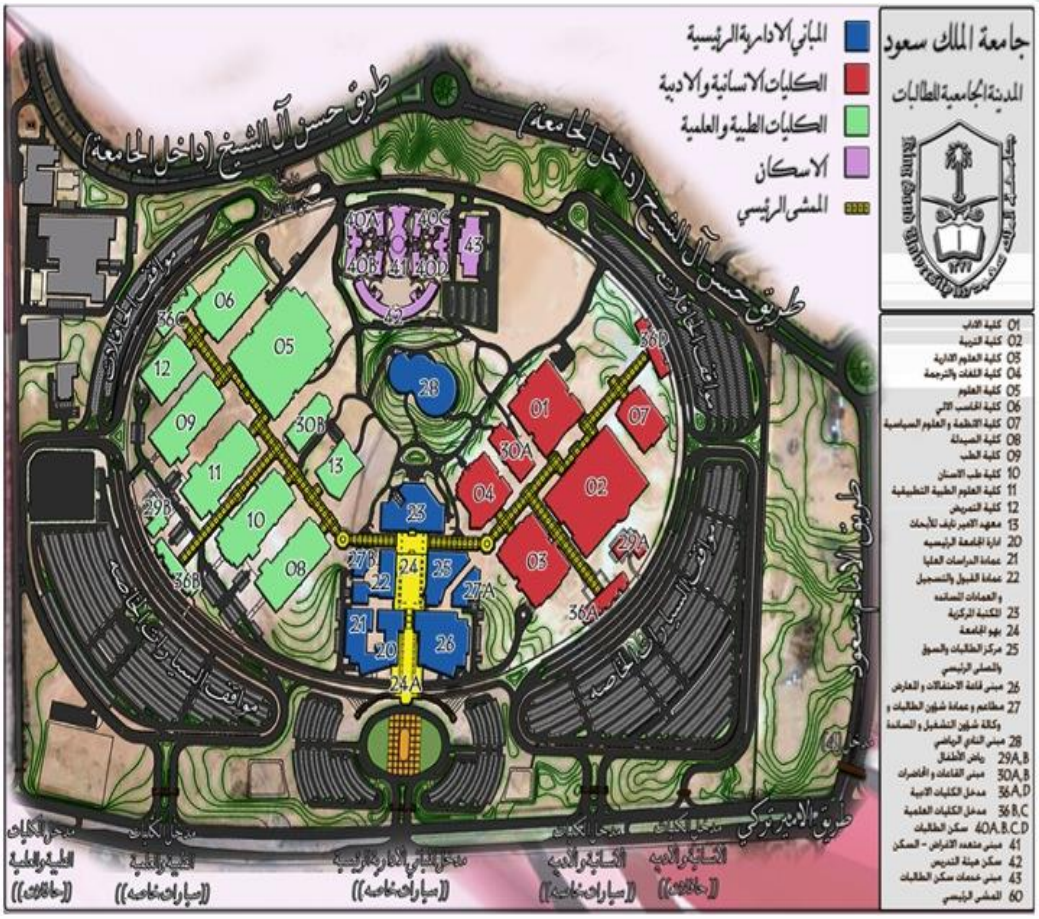
Online Academic Portal
https://edugate.ksu.edu.sa/ksu/ui/home.faces

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

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

Forms downloads
http://ksu.edu.sa/sites/KSUArabic/Deanships/Grad/publications-booklets/Pages/samples.aspx

COLLAGE MAP



KING SAUD UNIVERSITY, FEMALE CAMPUS