Imam Mohammad Ibn Saud Islamic University (IMSIU)

Master of Science in Information Systems Handbook

Information Systems Department

2023-24

Table of Contents

About the University

Imam Mohammad Ibn Saud Islamic University is one of the major state comprehensive academic institutions in Riyadh.

It started offering Islamic and humanities programs, before expanding to areas of sciences, engineering and medicine, to keep pace with the requirements and needs of the Saudi labor market, and to participate in supporting sustainable development in the Kingdom of Saudi Arabia.

It offers, through its colleges and institutes, several programs in various fields and sciences across a wide range of educational levels: diplomas, undergraduate and graduate programs, while achieving academic and research excellence.

The University creates an ideal academic environment recruiting distinguished faculty members, nurturing knowledge and creativity in the light of Islamic teachings and values.

It provides a full range of university facilities and integrated student services, to prepare competent graduates who are capable to cope with contemporary challenges while achieving social and economic development.

It has paid attention to academic research and the breadth of research domains, nationally and internationally.

The university publishes a number of peer-reviewed journals, and oversees research centers and a number of academic associations.

Drawing on its cultural and academic heritage in learning, teaching and academic research, it has maintained promoting knowledge exchange and international communication, and contributed to the creation, production and dissemination of knowledge.

Based on its endeavors to meet the standards of institutional quality assurance authorities, Imam Mohammad Ibn Saud Islamic University has obtained full institutional accreditation (until 2026) from the Education and Training Evaluation Commission represented by the National Center for Academic Accreditation and Evaluation.

About the College of Computer and Information Sciences (CCIS)

Imam Mohammad Ibn Saud Islamic University seeks to achieve the development goals of the Kingdom; therefore, it considers keeping pace with the information age by creating academic programs that meet society's growing needs for information technology. In order to achieve that vision, the Higher Education Council approved No. 4/11/1419 in its 11th session, held on 2/13/1419 H, to establish the Department of Computer and Information Systems in the college of Social Sciences. Studies in the department began in the first semester of the academic year 1420-1421 H.

The department continued to be expanded until the approval of the Higher Education Council No. 3/1422, dated 11/22/1422 H, which culminated in the approval No. 7/B/10465, dated 4/1/1423 H, to transform the department into the college of Computer and Information Sciences. The college includes a number of departments that grant bachelor's and master's degrees in specializations that represent important pillars for any effective scientific and research progress.

For more information about the college and its departments

College Dean Message

The decision to establish the college of Computer and Information Sciences was in line with the evolution of the enormous technical progress experienced by the world today, which requires educating, training, and developing faculty and staff to reach a desired comprehensive renaissance for all areas.

The college offers a wealth of opportunities for learning. We grant baccalaureate and master degrees in disciplines that represent important pillars of any scientific progress with effective research through college departments.

The college has adopted modern teaching methods, including high-quality, student-centered learning and hands-on training as an application of the college's mission to solve problems in the education process. These new methods have contributed to the application of technology to e-learning systems. Because of these efforts, we are considered to be one of the leading colleges at the Imam Muhammad Ibn Saud Islamic University for initiating the application of these methods to keep pace with global scientific developments. The college supports applied research in the various disciplines of computing through the establishment of research groups within the various departments and by collaborating with various local and international bodies. The college also offers programs for renewed community service such as workshops, training courses, and diplomas to achieve its objectives.

The college seeks to raise the level of the educational process and to provide better service to the community. In accordance with the latest regulations and with international quality and standards, it continues to support scientific research that encourages researchers' goals to build a strong joint collaborations with universities and research centers, both domestically and internationally.

Dr.Talal Albalawi

About the IS Department

The government of Saudi Arabia prioritizes utmost importance to the development of education in general, believing in its pivotal role in the progress, continuity, and success of countries. As an extension of the support of the king – may Allah protect him – for education and his efforts to develop it, and in line with the Kingdom's Vision 2030, the Information Systems Department at Imam Mohammad Ibn Saud Islamic University constitutes an important knowledge stream in the journey of achieving this vision.

The department was established by decision of the Higher Education Council in the year 1419 H. It was affiliated in its beginnings with the College of Social Sciences. Due to the increase in the number of students, it was transferred with the Department of Computer Science to the College of Computer and Information Sciences, which was established in the year 1422 H. The department has grown rapidly since then and has become one of the largest departments at the university and Kingdom levels in terms of the number of students enrolled.

The establishment of the Information Systems Department meets society's growing needs for computer technologies and participates effectively in our country's development plans. Since its establishment, the department has striven to achieve its mission of preparing distinguished graduates who possess the knowledge and skills necessary to work in the field of information systems.

Highlights of IS Department

Outstanding Academic Program(s)

They comply with international standards and covers various aspects of information systems, such as: databases, systems analysis and design, application development, computer networks, information and cybersecurity, Business Intelligence, E-Business, and IS strategy and policy.

Qualified Faculty Members

They are keen to provide their best to students and provide them with the skills and knowledge necessary to succeed in the labor market.

Future Career and Employment

It provides wide career opportunities for graduates to start their own business or work in various sectors, such as: banks, companies, government institutions, and universities.

State-of-Art Computing Facilities

Computer laboratories equipped with the latest hardware and software, which gives students the opportunity to apply what they have learned in practice.

Diverse Student Activities

Enriches knowledge and develops skills, such as: workshops, seminars, and competitions.

Scientific Research Support

The department believes in the importance of scientific research in the community evolution, so it encourages participation in scientific conferences and seminars, and provides support to students wishing to complete their postgraduate studies.

Head of Department Message

All praises to Allah, the lord of all the worlds, and may peace and blessings of Allah be upon the most Honored of messengers our Prophet Mohammad and upon all his family and companions.

Welcome to the department of Information Systems in the College of Computer and Information Sciences at Imam Mohammad Ibn Saud Islamic University. In today's fast-paced business environment, organizations and businesses challenge in structuring their business processes and operations to meet vibrant global competition. Nowadays, goods and services are increasingly managed and supplied by world-wide networks of firms, utilizing modern information technology to share information and coordinate activities. In this information-centric environment, organizations cannot gain competitive advantages just by amassing physical capital: they must make investments in systems and technologies to maximize the value of their information assets. Organizations that do not possess these capabilities will fall behind in the highly-competitive and quickly-changing business environment.

The establishment of the department of Information Systems meets the needs of the growing community of computer technologies, and to participate effectively in the development plans in our country. It was established in 1997/1998 under the Faculty of Social Sciences. Due to the increase in number of students, it was transferred along with the department of Computer Science into a newly established College of Computer and Information Sciences in 2001/2002. The department grew rapidly since then and became the largest department in the university in terms of the number of accommodated undergraduate students and the largest Information Systems department in the country.

The department of Information Systems has a team of highly qualified and professional faculty members with impressive academic and industrial credentials. The faculty members are committed to provide excellent teaching and personal advisory services to the students. In addition, they are making significant contributions to the professional and research communities with high-quality consultation and research works.

We are proud to welcome students with a diverse background to our creatively designed courses. The department offers one undergraduate and one graduate degree programs for the students to enjoy research-led and practices driven teaching environment. Whatever your career objective, you will find that knowledge of information systems will increasingly become a prerequisite for holding a decision-making position within an organization. Our programs provide the foundation to succeed in these careers

Dr. Hatoon Saleh AlSaqri

Vision-Mission of IS Department

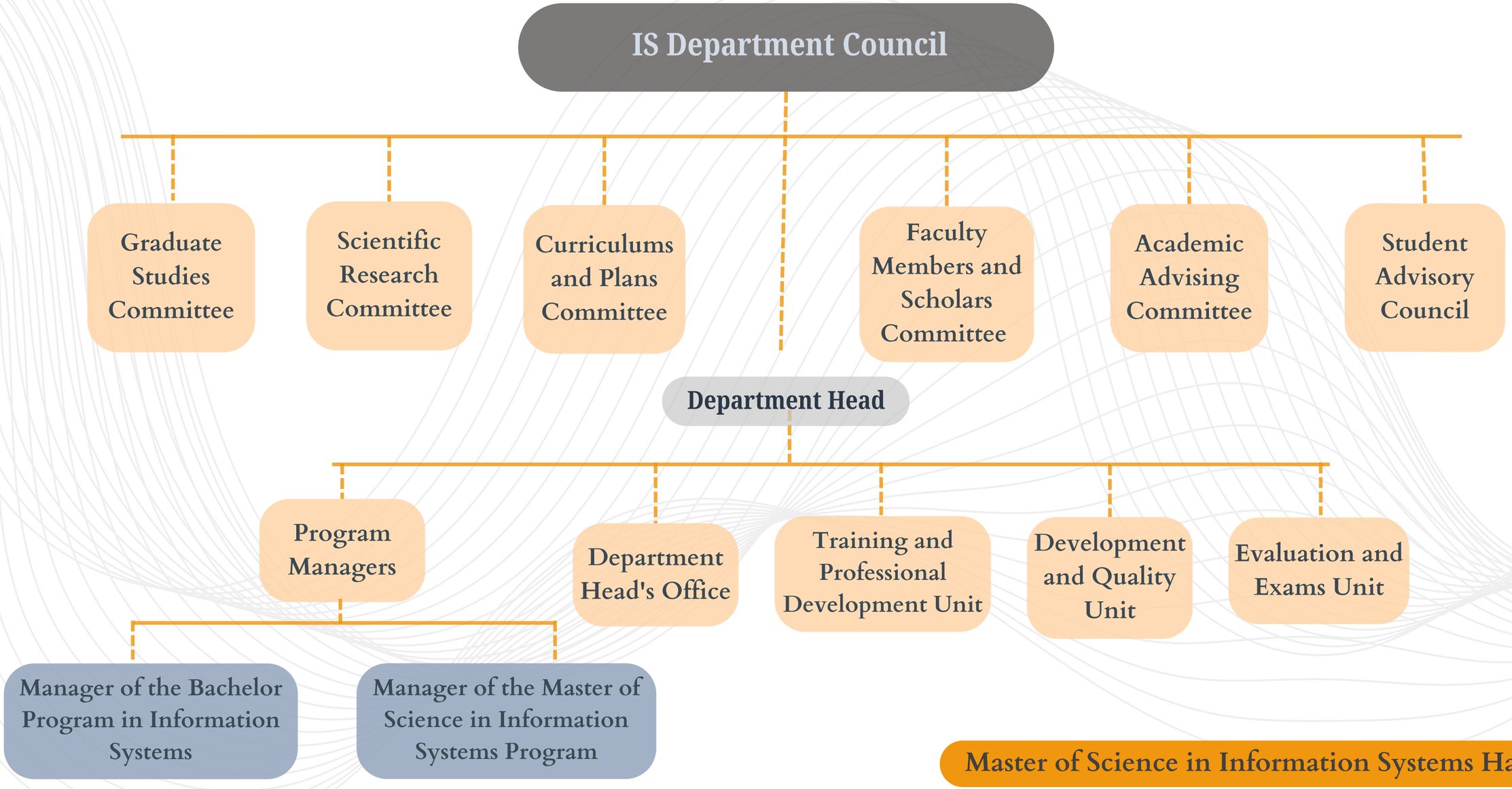
Vision

To be regionally recognized as a department of choice for students and organizations seeking academic excellence and professional services.

Mission

To pursue the department vision by offering and maintaining best educational programs derived from world-class academic establishments. It is committed to discover, teach and disseminate skills and renowned knowledge concerning the design of intelligent interactive information systems and to leverage the power of information technology to provide solutions in organizational contexts.

Organizational Structure of IS Department



IS Department Programs

The Department of Information Systems is one of the largest departments in the College of Computer Science and Information Systems. This specialty is the link between technical specializations and different fields.

The Information Systems Department offers several programs in the Information Systems specialty:

- Bachelor Program in Information Systems
- Master of Science in Information Systems Program

About Master of Science in IS

The Master of Science in Information Systems program was established in 2011, and since then nine batches have graduated from the program, with the first batch graduated in 2015. Since that time until today, the program has achieved many achievements in various fields. The program contributes to enriching human knowledge in information systems through specialized scientific studies and research. The program also enables distinguished students with university degrees to continue their graduate studies locally. In addition, the program helps develop specialized scientific and professional competencies and highly qualify them in the field of information systems. Moreover, the program works to encourage scientific competencies to keep pace with rapid progress in science and technology, push them to creativity and innovation, develop scientific research, and direct them to address the issues of Saudi society. The program has made notable efforts in developing its curriculum, as it has presented three curriculums since the beginning of the program. The latest curriculum was presented in 2023. The program follows a continuous development approach to keep pace with everything new in the field of information systems.

Master of Science in IS Program Mission

To provide graduate students with advanced knowledge and skills related to the IS discipline by offering high-quality education in a stimulating environment that qualifies them to compete in the fields of development, innovation, and scientific research thus contributing to building a knowledge economy for Saudi society and serving the community through a program that keeps pace with the latest contemporary educational standards.

Statistics and Figures

Number of graduates in Previous 5 Years

51 Graduates

Faculty members in 2023

Faculty members holding PhDs

Females	Males
18	32

Lecturers/Teacher Assistants

Females	Males
22	6

Program Learning Outcomes (PLOs)

The program learning outcomes are the attributes of graduates at the time of their graduation and are used in NCAAA quality processes.
Upon successful completion of all program requirements, graduates will be able to attain the following PLOs :

Knowledge and Understanding

K1- Outline principles, practices and processes of modern information systems.

K2- Articulate existing and emerging information systems methodologies and technologies with their latest applications to answer globalization challenges.

K3- Review academically-sound research to comprehend modern developments in the area of information systems.

Skills

S1- Perform research in scientific manner in order to identify gaps and to solve complex problem with innovative solutions in IS.

S2- Apply advanced IS skills, theories and principles to develop innovative solutions based on standard business processes in an information system for enterprise.

S3- Utilize IS procedures, processes and models to perform a variety of tasks and actions in the context of IS.

S4- Use the advanced technological and telecommunication tools and their applications to conduct both qualitative and quantitative analysis tasks with the goal of communicating knowledge, skills and research outcomes in the field of IS for general as well as specialized audiences.

Values

V1- Show professional and responsible behavior especially in contacts with stakeholders using various communication tools to deliver knowledge and research outcomes.

V2- Demonstrate ethics-based IS leadership qualities and information system management talents.

V3- Work effectively in individual setting as well as team member to accomplish a common goal.

Program Accreditations

NCAAA: National Commission for Academic Accreditation and Assessment.

The Master of Science in Information Systems Program is presently addressing the quality requirements stipulated by NCAAA.

Contact Details of Program Administration

Name	Administrative Position	Contact Information
Dr. Hatoon Saleh Al-Saqri	Head of Information Systems Department	Office phone: 0112581875 Email: ccis.is.chair@imamu.edu.sa
Mrs. Afnan Alhamdan	Director of Department's Head Office	Office phone: 0112597749 Email: is.office.f@imamu.edu.sa
Mr. Abdul Majeed Al-Harbi	Secretary of Information Systems Department	Office phone: 0112586823 Email: is.office@imamu.edu.sa
Dr. Mona Gibran Al-Shahrani	Secretary of Department Council	Office phone: 0112597675 Email: ccis.is.secretary@imamu.edu.sa
Mr. Abdul Majeed Al-Harbi	Administrative Communications Unit	Email: is.admin@imamu.edu.sa
Dr. Abeer Abdulaziz Al-Sanad	Manager of Master of Science in Information Systems Program	Office phone: 0112597675 Email: IS.MSc.Manager@imamu.edu.sa
Mrs. Yara Ibrahim Al-Muhanna	Manager of the Bachelor Program in Information Systems	Office Phone: 0112597027 Email: IS.BS.Manager@imamu.edu.sa
Prof. Abdul Khader Jilani Saudagar	Head of Development and Quality Unit	Email: ccis.is.qac@imamu.edu.sa
Dr. Mona Gibran Al-Shahrani	Head of Training and Professional Development Unit	Email: is.training@imamu.edu.sa
Mrs. Yara Ibrahim Al-Muhanna	Head of Evaluation and Exams Unit	Email: is.Exam@imamu.edu.sa

Contact Details of Program Administration

Name	Administrative Position	Contact Information
Dr. Abeer Abdulaziz Al-Sanad	Head of Post Graduate Studies Committee	Email: is.grad@imamu.edu.sa
Prof. Abdul Khader Jilani Saudagar	Head of Scientific Research Committee	Email: is.research@imamu.edu.sa
Dr. Mona Awad Al-Khattabi	Head of Curriculums and Plans Committee	Email: is.curriculum@imamu.edu.sa
Dr. Riyad Al-Makki	Head of Faculty Members and Scholars Committee	Email: IS.Members@imamu.edu.sa
Dr. Mohamed Saad	Head of Academic Advising Committee	Male email: is.academic-advisor@imamu.edu.sa Famel email: IS.Advising.f@imamu.edu.sa
Dr. Waleed Rashaidah	Head of Graduation Projects Committee	Email: IS.GP.m@imamu.edu.sa Email: IS.GP.f@imamu.edu.sa
Mrs. Anaam Alhoti	Coordinator of Student Advisory Council	Email: IS.S.Council@imamu.edu.sa

Faculty Members

Professors

Prof. Saleh bin Ghormallah Al-Zahrani
Prof. Abdul Khader Jilani Saudagar
Prof. Abdullah bin Abdulaziz Al Tamim
Prof. Mutlaq bin Badr Al-Dajani

Associate Professors

Dr. Abdulaziz bin Asouj Al-Shammari
Dr. Hatem M. Bahig Ibrahim
Dr. Mona Awad Awaid Al-Khattabi
Dr. Muhammad Badruddin Khan
Dr. Muhammad Ahmed Ali Al Khathami
Dr. Omaima Nizar Ahmed Al-Mustawi
Dr. Omar bin Abdullah Al-Shathri
Dr. Sheeraz Akram Muhammad Akram
Dr. Waleed Mohammad Rashaidah

Faculty Members

Assistant Professors

Dr. Abdulaziz bin Abdullah Al-Sahli
Dr. Abdulaziz bin Munie Al Munie
Dr. Abeer Abdulaziz Al-Sanad
Dr. Abeer Abdullah Al-Harbi
Dr. AlKhansa Abdul Rahman Abu Hashem
Dr. Ayat Othman Hamad Ali
Dr. Badr bin Suleiman AlSamaani
Dr. Fahd bin Sulaiman Al-Ayed
Dr. Fareeha anwar yasir
Dr. Habib Oladabo
Dr. Hatoon Saleh Ali AlSaqri
Dr. Hala Abdulaziz Al aSheikh
Dr. Hisham bin Rashid Al Talib
Dr. Hala bint Abdullah Al Rumaih
Dr. Haya Abdullah Al-Haqbani
Dr. Hisham Abdul Rahman Al-Haleel
Dr. Loujain Abdullah Al-Dahsh
Dr. Majid Abdulaziz Al-Braithen
Dr. Muhammad Saad Morsi Saleh
Dr. Muhammad Othman Khaled
Dr. Mona Gibran Al-Shahrani
Dr. Moudi Abdul Hamid Al aSheikh
Dr. Maysoon Suleiman AlDakhil
Dr. Nujoud Ibrahim Al-Ashban
Dr. Noha Muhammad Al-Shuqairan
Dr. Owais Ahmed
Dr. Riyad Saleh Al-Makki
Dr. Salem Saleh Al-Janaah
Dr. Saad Nasser Saad AlTamimi
Dr. Shafiq Rahman
Dr. Saleha Farhan Al-Otaibi
Dr. Taher Abdullah Al-Zahrani
Dr. Wael Juma bin Obaidullah
Dr. Yasser Kotb Alsayed Kotb
Dr. Youssef Ahmed Al-Dariwish

For more information about contacting faculty members

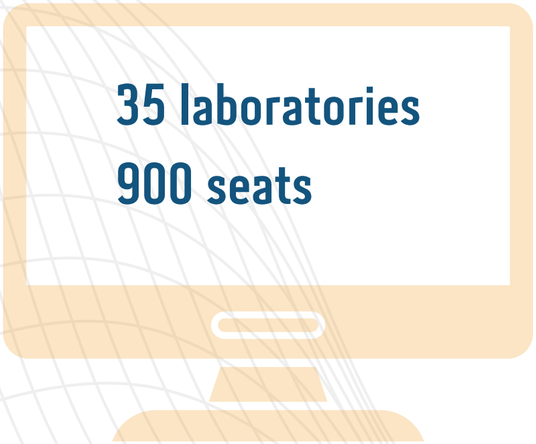
Students Admission

Annually, the Deanship of Admission and Registration – Vice Deanship of Graduate Studies announces in the university website the dates, criteria, and procedure for admission in the Master of Science in Information Systems Program

Facilities and Services

Classrooms and Laboratories

The college has many classrooms equipped with the latest educational equipment such as: electronic platforms, smart boards, visual communication device, and data show devices. In addition, there are a number of state-of-the-art computer labs hosting many commercial software tools and systems which provide students with modern software development environments. All the labs have high-speed Internet access and adequate printing facilities: Specifically, the lab facilities are:



- Dual operating system laboratories (Windows – Linux): The college contains 31 laboratories equipped with two operating systems and includes a wide range of basic software for the student, such as:

MS Office Professional, SharePoint, Visual studio Professional, Adobe Reader, Cygwin, JCreator Pro, NetBeans, Bloodshed Dev-C++, xampp, ArcGIS, Odoo, Rational Rose, Oracle, ubuntu, eclipse, gcc, Open Office, etc.

Specialized Laboratories

- **Digital Lab:** It is dedicated to the practical application of digital circuits.

- **Network Lab:** It is dedicated to practical training for computer network courses.
  - NW Cabinet,
  - 5 CISCO Switches,
  - 3 Cisco Routers

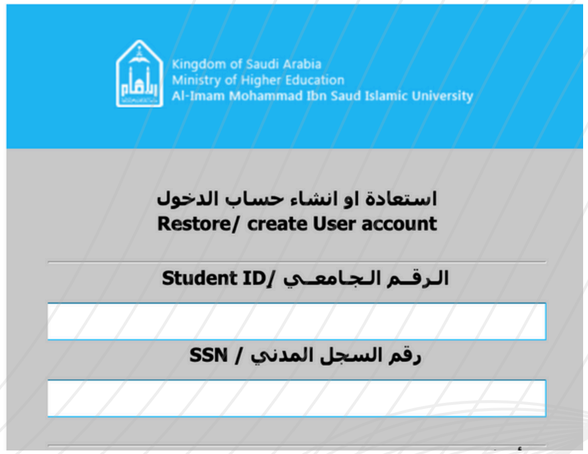
- Design lab:
  - iMAC i7 4.2GHz, 8GB RAM, 500GB HD, 27’ Retina

- 3D printing lab:
  - HP eliteone 800 g4 i7, 24" LCD
  - 3Ultimaker 3D Printer

Electronic Services

Microsoft Office 365 email:

- The university provides its students with an official email address on the university's domain "@imamu.edu.sa."
- The university also provides its students with a free, complete copy of the "Office 365" programs that can be installed on five different types of devices (computer, mobile phone, tablet) and remain licensed for use throughout the student's attendance at the university.



Microsoft® Outlook Live

System Manual

Access Link

Electronic Services

Student Self-Services System (Banner)

It is a system to manage the educational processes that provides multiple services to male and female students, some important services are:

- Update personal information.
- View general student information.
- Enter preparatory program student's desires.
- Register, delete and/or withdraw courses.
- View the academic schedule.
- Searching for academic courses' sections and their requirements.
- Transfer between colleges and preparatory programs.
- Transfer from external studies (distance education) program to internal studies (on-campus) program and vice versa.

Access Link

Reset Passward Manual

Courses Registration and Withdrawal Manual

Study Postponement - Apology- Exceptional Opportunities - Re-enrollment Manual

Electronic Services

Blackboard (BB):

It is a system for education management and follow-up of students and monitoring the efficiency of the educational process in the educational institution. The system provides the following tools for the students:

- Accessing course content
- Assignments submission
- Online exams
- Viewing grades
- Communicating with the course instructor outside the lecture room.

Blackboard

System Manual

Access Link

Electronic Services

Academic Advisory System:

Through this system, the student can communicate with the academic supervisor and vice versa to ensure that the advising process runs smoothly and conveniently.

المملكة العربية السعودية
جامعة الإمام محمد بن سعود الإسلامية
نظام الإرشاد الأكاديمي

الإرشاد الأكاديمي

System Manual

Access Link

Electronic Services

Saudi Digital Library:

The Saudi Digital Library, which includes thousands of e-books and scientific papers. Any student or faculty member can access it through the college website.

SDL
المكتبة الرقمية السعودية
Saudi Digital Library

System Manual

Access Link

Electronic Services

Tawasol System:

It enables students to raise complaints, inquiries, and suggestions regarding programs, services, student activities, rewards, and allowances.

المملكة العربية السعودية
وزارة التعليـــم
جامعة الإمام محمد بن سعود الإسلامية

تواصل

System Manual

Access Link

Student Counseling Unit

The Student Counseling Unit is concerned with providing:

- Academic Advisory Services.
- Social and Psychological Counseling Services.
- Vocational Counseling Services.

To communicate with:

Students Affairs – Male: IS.Academic-Advisor@imamu.edu.sa / Female: Ccis.std.f2@imamu.edu.sa

Psychological and Social Services Unit – Ccis.Spg.Z.n@imamu.edu.sa

Academic Advisory – Male: is.academic-advisor@imamu.edu.sa / Famel: IS.Advising.f@imamu.edu.sa

Student Counseling Unit

Students' Guidelines of University Regulations and Exams

Study Regulations and Executive Rules.

Academic Advisory Handbook

Calculation of GPA and Academic Warnings

Course Equivalency Regulations and Procedures.

University Students Rights and Duties.

Disciplinary Regulations.

University Student Grievance Rules and Procedures.

Students Advisory Council

A council composed of a group of male and female students from the Information Systems Department, which looks into student affairs related to academic aspects, activities and services.

Council duties:

1/ Study the problems related to academic affairs, student services, and activities that the department's male and female students face in order to help them solve them.

2/ Presenting, discussing and raising the views of the department's male and female students related to academic affairs and student services.

3/ Monitoring the quality of services provided to male and female students at the college, institute or university.

4/ Developing plans for activities, programs and events targeting male and female students in the department in cooperation with specialized and general clubs.

5/ Supporting student initiatives within the department, working to activate them in a positive manner, and coordinating with the Deanship of Student Affairs in this regard.

Council members:

General Supervisor of the Council: Head of the Scientific Department / Dr. Hatoon Al-Saqri

Council coordinator from the administrative staff: A. Inaam Al-Huwaiti

Council email: IS.S.Council@imamu.edu.sa

President: Noha Ibrahim Al-Hamid: 442013385@sm.imamu.edu.sa

Alumni Unit

The entity is responsible for managing and overseeing the affairs of Graduates within the college.

Email: Ccis-G.U.F@imamu.edu.sa

Deanship of Library Affairs

- Prince Sultan Library for Science and Knowledge – Male students
- The Central Library in King Abdullah City – Female students

Deanship Services:

The deanship provides a number of electronic services, such as booking books, requesting dissertations, training, and others, as shown in the link:

Deanship Contacts:

البريد الالكتروني	Libraries@imamu.edu.sa
تبويب في نظام تواصل	crm.imamu.edu.sa
منصة x	@Imamu_Libraries
الهاتف	0112591060

College Partnerships

Imam Mohammad Ibn Saud Islamic University has memoranda of understanding in the field of training and scientific research with the following entities:

- EC-Council Academy
- ZOHO Corporation
- Autism Research Center at King Faisal Specialist Hospital
- BAE Systems
- Communications and Information Technology Regulatory Authority (CITRA)

Research, Funding, and Awards

Scientific research is extremely important in achieving academic excellence and accelerating national development. In line with its mission and objectives, the University has established several centers to advance research and development activities in the areas of science and technology and increase the visibility of the university internationally. Among those centers, Research and Scientific Consulting Center in the College of Computer and Information Sciences, established on 14-05-1426 H aims to achieve the following:

- Contribute to the preparation of strategic plans of scientific research at the university.
- Provide ways to support researchers in the College and develop their potential.
- Facilitate cooperation and integration in the field of scientific research among the academic departments of the College.
- Facilitate the faculty members of the College to communicate with the Deanship of Scientific Research.
- Achieve integration in the field of scientific research among various research units within the University.

Research, Funding, and Awards

The Department's research broadly covers the areas of Information Systems Analysis and Design, Organizational Informatics, Enterprise Architecture, Business Intelligence, Artificial Intelligence, Blockchain, Knowledge Management, etc. Students have opportunities to participate in cutting-edge research projects formulated by department faculty members and gain valuable experience in applying the techniques learned through the taught courses on real-life problems as in the following graduate students' publications:

- Arabic Grammatical Error Detection Using Transformers-based Pretrained Language Models
- Toward Patient-Centric Healthcare Systems: Key Requirements and Framework for Personal Health Records Based on Blockchain Technology
- Personal Health Records: Blockchain-Based Identity Management and Data Ownership
- Eye Blink Detection and Alarm System to Reduce Symptoms of Computer Vision Syndrome

For More Publications:

Research, Funding, and Awards

The Deanship of Scientific Research provides incentives and awards to distinguished researchers and allows applications for awards and incentives through the Wafi platform and the starting time of the application is announced via the official online accounts of the Deanship.

For more details:

Career Opportunities

All graduates of the program will have the knowledge and skills to be practitioners and innovators in the field of Information Systems. Graduates with a Master of Science in Information Systems will have various career opportunities including the following:

- Analyst and Information Systems Designer.
- Information Systems Consultant.
- Project Manager.
- Database Administrator.
- Business Analyst.
- Business Developer.
- Data Scientist.
- Researcher.
- Faculty Member.

Professional Development

Students in the program are offered various avenues for advancing their professional skills and experience, including:

- Student visits within and outside the Kingdom.
- Specialized training courses.
- Competitions.
- Research and Publications support and awards.
- Initiatives, which include sessions on Artificial Intelligence, are conducted in partnership with Innovation Leadership and Entrepreneurship.

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Curriculum

Curriculum Study Plan

Semester:	One	IS	8 Hours
Course Code	Course Name		Credit Hours
IS 6113	IS Strategy and Policy		4
IS 6114	Data Analytics		4

Semester:	Two	IS	8 Hours
Course Code	Course Name		Credit Hours
IS 6123	Digital Transformation		4
IS 6124	Project and Change Management		4

Semester:	Three	IS	8 Hours
Course Code	Course Name		Credit Hours
IS 6133	IT Infrastructure		4
IS 6134	Advanced Database Management		4

Semester:	Four	IS	6 Hours
Course Code	Course Name		Credit Hours
IS 62xx	Selected Topic 1		4
IS 6297	Research Methods and Ethics		2

Semester:	Five	IS	6 Hours
Course Code	Course Name		Credit Hours
IS 62xx	Selected Topic 2		4
IS 6298	Research Study		2

Semester:	Six	IS	12 Hours
Course Code	Course Name		Credit Hours
IS 6299	Thesis		12

Elective Courses

Business Intelligence and Data Analysis Courses		
Course Code	Course Name	Credit Hours
IS 6221	Fundamentals of Data Science	4
IS 6222	Advanced Data Analysis	4
IS 6223	Business Analysis	4
IS 6224	Data Visualization	4
IS 6225	Business Smart Systems	4
IS 6226	Data Mining and Information Warehouse	4

Information Systems Quality Management		
Course Code	Course Name	Credit Hours
IS 6231	Supply Chain Management	4
IS 6232	Developing the Performance of Operations and Services	4
IS 6233	Quality Management in Information Systems	4
IS 6234	Statistical Control of Processes and Quality Tools	4
IS 6235	Risk Management	4

Core Courses Descriptions

IS6113: IS Strategy and Policy

This course gives a top management perspective for aligning competitive strategy, core competencies, and information systems. It focuses on the development and implementation of policies and plans to achieve organizational goals. It is about defining the systems that support the operational, administrative, and strategic needs of the organization, its business units, and individual employees. It deals with approaches to managing the functions of information systems in organizations. This includes examination of the dual challenges of effectively controlling the use of well-established information technologies, while experimenting with selected emerging technologies. It also highlights the role of CIO. This course acquaints students with the issues, procedures, and opportunities associated with the organizational use of information technology and with the management of the information system functions. It provides them with a perspective for aligning competitive strategy with information systems. Topics include development and implementation of policies and plans to achieve organizational goals and relating them to IS projects that support the operational, administrative, and strategic needs of the organization.

Core Courses Descriptions

IS 6114: Data Analytics

This course introduces concepts and skills that can help the students tackle real-world data analysis challenges. It covers concepts from probability, statistical inference, linear regression, and machine learning. It also helps in development of skills such as R programming, data wrangling, data visualization, predictive algorithm building, file organization with UNIX/Linux shell, version control with Git and GitHub, and reproducible document preparation. The course uses motivating case studies that realistically mimic a data scientist's experience. The statistical concepts used to answer the case study questions are also introduced.

IS 6123: Digital Transformation

Every business begun before the Internet now faces the same challenge: How to transform to compete in a digital economy? Globally recognized digital experts argue that digital transformation is not about updating your technology but about upgrading your strategic thinking. This course shows how pre-digital-era companies can reinvigorate their game plans and capture the new opportunities of the digital world. The courses show why traditional businesses need to rethink their underlying assumptions in five domains of strategy—customers, competition, data, innovation, and value. It reveals how to harness customer networks, platforms, big data, rapid experimentation, and disruptive business models—and how to integrate these into your existing business and organization.

Core Courses Descriptions

IS 6124: Project and Change Management

Information Technology Project Management addresses project management in the context of information technology. The course focuses on how to create measurable organizational value through IT projects. It also introduces the concepts of lifecycles, methodologies, and processes for managing and developing the project's product, service, or system and how to conceptualize and start a project. Defining the project infrastructure and the importance of resource management on projects, including the current state of the global IT workforce and future implications for IT. The topic also discusses the role of soft skills in IT project management and highlights the importance of good communications as one means of achieving project success. In addition to that, explain the importance of project stakeholder management throughout the life of a project.

Core Courses Descriptions

IS 6133: IT Infrastructure

IT infrastructure subject is describing all hardware and software components needed to run IT applications. And infrastructure architecture describes the overall design of that infrastructure. This subject explains how infrastructure components work on an architectural level. It does not provide in- depth details needed by technicians but describes the main architectural building blocks and concepts. IT infrastructures are complex by nature and provide non-functional qualities like performance, availability, and security to applications. This subject describes each infrastructure component and their specific performance, availability, and security concepts.

IS 6134: Advanced Database Management

There has been a rapid growth and development in the field of relational database management systems. This course provides an in-depth analysis of advanced database areas as well as the basics of database management systems. It explores the different SQL concepts, starting from the very basic DDL and DML statements to constraints and views. The theme of this course is the potential of various database management systems. The course combines advanced techniques with practical advice and many new ideas, methods and examples for database management students, system specialists and programmers.

Core Courses Descriptions

IS6297: Research Methods and Ethics

This course covers the fundamentals of conducting research in the field of Information Systems. In this course, the students will learn how to do research and they will undergo a substantial project that will help them realize the skills taught in the theoretical portion of the course. The student will deliver a detailed report about his/her implemented project.

IS 6298: Research Study

This research study course is a pre-requisite for registering the master thesis. Initially, students are associated with potential supervisors based on research interests. Then, students are guided by those supervisors towards writing a complete master thesis proposal. This course is conducted as weekly lectures and meetings in which students and supervisors discuss research topics with the aim to write a complete thesis proposal.

Core Courses Descriptions

IS6299: Thesis

This course is the Information Systems graduation thesis. The students are expected to propose, analyze, and/or design an Information structure/system under direct supervision of a faculty member. This research work will particularly focus on topics which are at the cutting edge in the field of Information Systems and should be implemented and tested by the end of the course. The course requires students to synthesize and apply materials learnt in previous courses. This course will equip students with the basic skills to conduct and manage research in a narrow topic within the field of Information Systems, writing technical thesis and mid-work progress reports and the skills for presenting the work to audiences. The course will also provide guidance to the students in selecting business-focused, state-of-the art topics, understanding the research process as well as the tools needed to support implementing the system, writing its documentation, presentation skills and ethical issues such as avoiding plagiarism. Finally, the student is required to present his/her work in front of an examination committee consisting selected faculty members of the college.

Examples of Thesis Topics

- User Experience Evaluation Framework for E-Government Services.
- The Impact of Using zSpace System as a Virtual Learning Environment in Saudi Arabia: A Case Study of Al-Hamra School for Girls in Jeddah.
- Arabic Sentiment Analysis Using Machine Learning Algorithms of Twitter Data Based on Spatial and Temporal Analysis – Case Study.
- Personal health records: Blockchain-based on identity management and data ownership.
- Enhancing Biogeographical Ancestry Prediction with Deep Learning: A Long Short-Term Memory Approach
- Exploring the Barriers of Government Health Services Integration: Case of Saudi Arabia

Elective Courses Descriptions

Business Intelligence and Data Analysis – Concentration

IS6221: Fundamentals of Data Science

Data Science is a field which uses methods and algorithms for extraction of information from structured or unstructured data. Due to growth in data and evolution in technology, the domain of data science has seen a tremendous rise. This course is designed to give you a comprehensiveeve introduction to data science and analytics landscape. You will learn to apply statistical techniques and machine learning algorithms to draw insights and build predictive models while adhering to ethical guidelines.

IS6222: Advanced Data Analysis

Advanced Analytics is the autonomous or semi-autonomous examination of data or content using sophisticated techniques and tools, typically beyond those of traditional business intelligence (BI), to generate recommendations, make predictions and discover insights from complex and large datasets. The course is designed to provide students with the knowledge and skills needed to tackle complex data analysis problems and prepare them for a career in the field of data analytics or data science.

Elective Courses Descriptions

IS 6223:Business Analysis

Business Analysis is the practice of enabling change in an organizational context, by defining needs and recommending solutions that deliver value to stakeholders. This course is designed to develop students' skills in analyzing business problems and developing effective solutions. They will learn to apply industry-standard frameworks and methodologies to real-world business cases, with a focus on critical thinking, problem- solving, and communication skills. The set of business analysis tasks and techniques are defined in, "A Guide to the Business Analysis Body of Knowledge."

IS6224: Data Visualization

Data visualization refers to the use of graphical and visual representations to communicate insights and patterns in data. It involves creatingg charts, graphs, and other visual aids to represent complex data sets in a way that is easy to understand and interpret. This course covers principles, techniques, and tools used to create effective visual representations of data. Students would learn how to use tools such as Tableau, Python, and R to create effective visualizations.

Elective Courses Descriptions

IS6225: Business Smart Systems

Business Smart Systems describes the integration of business and technology to improve decision-making and organizational efficiency. These systems adopt emerging technologies in a way that delivers operational excellence in a cost-effective manner. The course covers topics such as data management, business analytics, and process automation. Students will learn about different smart systems and how they aggregate, analyze, and use data to make informed business decisions.

IS 6226: Data Mining and Information Warehouse

Data mining is considered as a process of extracting data from large data sets, whereas a Data warehouse is the process of pooling all the relevant data together. The course introduces students to the concepts and techniques used in discovering patterns and relationships within large sets of data, as well as the management and organization of such data. It covers a wide range of topics, including data pre-processing, data visualization, classification, and clustering techniques amongst others. Students will also learn about data warehousing, which involves the design and implementation of databases for the storage and management of large volumes of data.

Elective Courses Descriptions

Management and Quality of Information Systems – Concentration

IS6231: Supply Chain Management

The course broadens the learner's understanding of the fundamentals of the Supply Chain Management process, supply chain strategies, and the way these strategies need to be aligned to organizational goals and objectives. It gives an idea about the role of information technology in supply chain management and Enterprise Resource Planning (ERP). Further, it provides an overview of Logistics and Procurement Management, the challenges faced, and its plans and processes.

IS 6232: Developing the Performance of Operations and Services

Operational performance is the ability of enterprises to deliver products or services to customers using economical processes. This description of operational performance highlights its close association with lean manufacturing and Six Sigma methodologies to drive growth. The purpose of this course is to introduce concepts and models for effective and efficient operations management to the student. This course is to make the students familiar with the changes required in the operational strategy with changing environment.

Elective Courses Descriptions

IS 6233: Quality Management in Information Systems

This course introduces students to the concepts, tools, and techniques used in Total Quality Management, quality cultures, effective team structures, measurement of quality, productivity, and competitiveness in an industrial environment. The course not only introduces students to the concepts of quality assurance and quality control, but also connects leadership, supplier customer relationships, employee engagement, data collection and analysis, productivity, statistical process control, and other topics to quality and customer satisfaction. It provides documentation of a business' processes, functions and policies necessary for the continuous improvement of quality aimed to ensure customer expectations and requirements are met or exceeded.

Elective Courses Descriptions

IS 6234: Statistical Control of Processes and Quality Tools

Statistical Process Control (SPC) refers to the use of statistical techniques to control a process, production, or manufacturing method through monitoring of process behaviour, as a result discovering issues related to internal systems, and allowing for corrective actions to be taken before failure occurs. The best decisions are made using facts and data. The collection and interpretation of data is equally important in manufacturing and service environments. This course is focused on the concepts and practices of statistical process control.

IS6235: Risk Management

Risk management is the identification, evaluation, and prioritization of risks followed by coordinated and economical application of resources to minimize, monitor, and control the probability or impact of unfortunate events or to maximize the realization of opportunities. This course is focused on the concepts and practices of risk management related to information systems.

Conclusion

The Master of Science in Information Systems program is one of the most important postgraduate programs at the College of Computer and Information Sciences at Imam Mohammad Ibn Saud Islamic University. The program attracts an elite group of students every academic year, and graduates a number of distinguished students who are proficient in the field of Information Systems and hold a number of vital jobs in many governmental and private agencies. The program seeks continuous development to keep pace with everything new in the field of Information Systems. Its mission, goals, plan, and outcomes are measured every academic year. It is worth mentioning that, with the efforts of the program management and faculty members, and the constant and continuous support of its leaders, the program is in the process of obtaining accreditation from the National Authority for Academic Accreditation and Evaluation (NCAAA).

In conclusion, we hope that this guide in your hands has given you a comprehensive overview, benefited you, and answered your questions about the Master of Science in Information Systems program. We confirm that the program, its management and faculty members, are fully prepared to serve the students and provide them with all the necessary support and guidance they need.

Manager of the Master of Science in Information Systems Program

Dr. Abeer Abdulaziz AlSanad