

INFORMATION SYSTEMS

Admission to Program

Admission to the program is explained in the HCT Admission Policy described in the Academic Policies section of this Catalogue.

Program Mission

Prepare graduates to be successful Information Communication Technology (ICT) professionals in technical and organizational leadership roles, embracing innovation and discovery and striving for professional growth through life-long learning in the field of Information Systems and associated domains.

Program Description

The Bachelor of Information Systems program prepares students to apply ethical values to complex and unpredictable problems and to plan, design, implement, evaluate, and manage an organization's ICT infrastructure. The program provides students with the required knowledge, skills, and competencies in the areas of information technology assets, archival, and information processing systems. Throughout the program, students learn to apply fundamental concepts and skills from a variety of information technologies and develop an understanding of the role of information systems within organizations.

Students also develop professional work competencies to complement their technical skills and apply high level special administrative responsibilities including leading multiple and complex groups. Within each concentration, students learn to apply current and advanced techniques, skills, and tools; analyze organizations and user needs; create and evaluate computer-based solutions, and implement information systems solutions in a given organizational environment.

The program offers concentrations in:

- **Business Solutions**
- **Data Science**

Students are eligible for one year Work Experiential Learning during their study.

Program Goals

- Provide Information Systems professionals with the technical knowledge and skills required by the industry to develop, design, and maintain Information Systems to the highest level of industry standards.
- Prepare graduates for a successful career as effective decision makers with strong communication and teamwork skills and an understanding of global, ethical and social implications of the industry and Information Systems profession.
- Prepare graduates with technical and entrepreneurial leadership qualities, who support the development of innovative computing solutions in response to local, regional, or global challenges.
- Provide graduates with strong commitment to lifelong learning, continuing education, and professional growth.

Program Learning Outcomes

1. Demonstrate an understanding of critical analysis, research systems and methods, and evaluative problem-solving techniques, showing

familiarity with sources of current and new research in the field of computing. [QFE Knowledge]

2. Analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions.
3. Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
4. Communicate effectively in a variety of professional contexts.
5. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
6. Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
7. Support the delivery, use, and management of information systems within an information systems environment.

Program Learning Outcomes (PLOs) - Concentrations

8. Produce effective solutions to business problems by applying current and emerging industry practices using advanced business software tools. [Business Solutions]

8. Apply theory, techniques, and tools throughout the data analysis lifecycle and employ the resulting knowledge to satisfy stakeholders' needs. [Data Science]

Requirements

Completion Requirements

Bachelor of Information Systems

Students must successfully complete a minimum of 135 credits, including:

Code	Title	Credit Hours
Information Systems Core Courses		81
Concentration Courses		15
4000 Elective Courses		6
General Studies		33
Total Credit Hours		135

To qualify for the Bachelor's degree, a student is required to:

- Successfully complete the required number of credits and courses specific to the program with a minimum cumulative GPA of 2.0.
- Complete 100 hours of volunteering.
- Meet the residency requirement that a minimum of 50% of the program credit requirements have been completed at the HCT

Code	Title	Credit Hours
Information Systems Core Courses		
Required Credits: 81		
CIS 1103	Hardware and Networking	3
CIS 1203	Web Technologies	3
CIS 1303	Database Systems	3
CIS 1403	Fundamentals of Programming	3
CIS 2003	Statistics and Probability	3
CIS 2013	Ethics and Sustainability for Computing	3
CIS 2023	Applied Discrete Mathematics	3

CIS 2103	Principles of Information Assurance, Security and Privacy	3
CIS 2303	Systems Analysis and Design	3
CIS 2313	Database Development	3
CIS 2403	Object Oriented Programming	3
CIS 2413	Data Structures and Algorithms	3
CIS 2423	Programming for Data Analytics	3
CIS 2806	Work Related Experience I	6
CIS 3023	Inferential Statistics	3
CIS 3113	Object Oriented Analysis & Design	3
CIS 3123	Big Data Technologies	3
CIS 3213	Business Process Management	3
CIS 3403	Artificial Intelligence	3
CIS 3413	Data Mining for Business	3
CIS 3603	Project Management	3
CIS 3613	Enterprise Resource Planning	3
CIS 3806	Work Related Experience II	6
CIS 4933	Capstone Project I	3
CIS 4943	Capstone Project II	3

Information Systems Program Electives

Required Credits: 6

CIB 4003	E Business Applications Development	3
CIS 4403	Cloud Computing	3
CIS 4703	Blockchain Applications and Coding	3
CSF 4003	Security and Risk Management	3

or any 4000-level course from an IS concentration not selected for study

Additional Electives may be added later

General Studies

Required Credits : 33

English, Arabic, or other Languages	12
Humanities or Art	3
Information Technology or Mathematics	6
The Natural Sciences	3
The Social or Behavioral Sciences	9

**Students are required to select one of the two concentrations offered

Concentration Name: Business Solutions

Total Credit Hours: 15

Concentration Curriculum:

Concentration Code : CBS

Code	Title	Credit Hours
CIB 4113	Accounting and Finance Analytics	3
CIB 4203	Customer Relationship Management Systems	3
CIB 4213	Information Technology Strategy and Governance	3
CIB 4303	Emerging Technologies in Business	3
CIB 4403	Digital Marketing and Analytics	3

Concentration Name: Data Science

Total Credit Hours: 15

Concentration Curriculum:

Concentration Code : CDS

Code	Title	Credit Hours
CDS 4003	Data Science for Business Applications	3
CDS 4103	Data Visualization	3
CDS 4203	Data Governance	3
CDS 4303	Machine Learning for Data Science	3
CDS 4403	Time Series for Forecasting	3

Description	Data
Total Required Credits	135
Maximum Duration of Study	6 years
Minimum Duration of Study	4 years
Cost Recovery Program	No
Program Code	BCINS
Concentration Codes	CBS, CDS

Ideal Study Plan

Recommended Sequence of Study

Business Solutions Concentration**Year 1**

Semester 1		Credit Hours
CIS 1103	Hardware and Networking	3
CIS 1203	Web Technologies	3
ICT 2013	Computational Thinking and Coding	3
LSC 1103	Professional Communication and Reporting	3
LSS 1003	Life and Future Skills	3
Credit Hours		15

Semester 2

CIS 1303	Database Systems	3
CIS 1403	Fundamentals of Programming	3
AES 1033	Islamic Culture	3
AES 1013	Arabic Communications	3
LSM 1003	Applied Mathematics	3
Credit Hours		15

Year 2**Semester 3**

CIS 2003	Statistics and Probability	3
CIS 2303	Systems Analysis and Design	3
CIS 2103	Principles of Information Assurance, Security and Privacy	3
CIS 2413	Data Structures and Algorithms	3
LSS 1123	Basic Research Methods	3
Credit Hours		15

Semester 4

CIS 2013	Ethics and Sustainability for Computing	3
CIS 2023	Applied Discrete Mathematics	3
CIS 2313	Database Development	3
CIS 2403	Object Oriented Programming	3
CIS 2423	Programming for Data Analytics	3
Credit Hours		15

Summer

CIS 2806	Work Related Experience I	6
Credit Hours		6

Year 3**Semester 5**

CIS 3213	Business Process Management	3
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CIS 3023	Inferential Statistics	3
CIS 3413	Data Mining for Business	3
CIS 3113	Object Oriented Analysis & Design	3
AES 1003	Emirati Studies	3
LSC 2223	Future Skills Capstone	3

Credit Hours 18

Semester 6

CIS 3603	Project Management	3
CIS 3123	Big Data Technologies	3
CIS 3613	Enterprise Resource Planning	3
CIS 3403	Artificial Intelligence	3
BUS 2403	Innovation and Entrepreneurship	3

Credit Hours 15

Summer

CIS 3806	Work Related Experience II	6
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Credit Hours 6

Year 4

Semester 7

CIB 4203	Customer Relationship Management Systems	3
CIB 4113	Accounting and Finance Analytics	3
CIS 4933	Capstone Project I	3
CIB 4303	Emerging Technologies in Business	3
4000 Level Elective		3

Credit Hours 15

Semester 8

CIB 4213	Information Technology Strategy and Governance	3
CIB 4403	Digital Marketing and Analytics	3
CIS 4943	Capstone Project II	3
CIS 4003	Green Computing	3
4000 Level Elective		3

Credit Hours 15

Total Credit Hours 135

Data Science Concentration

Year 1

Semester 1

CIS 1103	Hardware and Networking	3
CIS 1203	Web Technologies	3
ICT 2013	Computational Thinking and Coding	3
LSC 1103	Professional Communication and Reporting	3
LSS 1003	Life and Future Skills	3

Credit Hours 15

Semester 2

CIS 1303	Database Systems	3
CIS 1403	Fundamentals of Programming	3
AES 1033	Islamic Culture	3
AES 1013	Arabic Communications	3
LSM 1003	Applied Mathematics	3

Credit Hours 15

Year 2

Semester 3

CIS 2003	Statistics and Probability	3
CIS 2303	Systems Analysis and Design	3
CIS 2103	Principles of Information Assurance, Security and Privacy	3
CIS 2413	Data Structures and Algorithms	3
LSS 1123	Basic Research Methods	3

Credit Hours 15

Semester 4

CIS 2013	Ethics and Sustainability for Computing	3
CIS 2023	Applied Discrete Mathematics	3

CIS 2313	Database Development	3
CIS 2403	Object Oriented Programming	3
CIS 2423	Programming for Data Analytics	3

Credit Hours 15

Summer

CIS 2806	Work Related Experience I	6
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Credit Hours 6

Year 3

Semester 5

CIS 3213	Business Process Management	3
CIS 3023	Inferential Statistics	3
CIS 3413	Data Mining for Business	3
CIS 3113	Object Oriented Analysis & Design	3
AES 1003	Emirati Studies	3
LSC 2223	Future Skills Capstone	3

Credit Hours 18

Semester 6

CIS 3603	Project Management	3
CIS 3123	Big Data Technologies	3
CIS 3613	Enterprise Resource Planning	3
CIS 3403	Artificial Intelligence	3
BUS 2403	Innovation and Entrepreneurship	3

Credit Hours 15

Summer

CIS 3806	Work Related Experience II	6
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Credit Hours 6

Year 4

Semester 7

CDS 4003	Data Science for Business Applications	3
CDS 4103	Data Visualization	3
CDS 4303	Machine Learning for Data Science	3
CIS 4933	Capstone Project I	3
4000 level Elective		3

Credit Hours 15

Semester 8

CDS 4203	Data Governance	3
CDS 4403	Time Series for Forecasting	3
CIS 4003	Green Computing	3
CIS 4943	Capstone Project II	3
4000 Level Elective		3

Credit Hours 15

Total Credit Hours 135

* Additional courses may be offered in each Summer Semester at the discretion of the academic faculty.

Faculty and Academic Staff

Alexandros Alexandropoulos, PhD (Computing), The University of Manchester, UK

Ali Khan, Doctor of Science (Software Engineering), Abo Akademi University, Finland

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