



Sana'a University

Faculty: **Computer Science and IT**

Department: **Information Technology**

Program: **Master of Information Technology**

جامعة صنعاء

كلية: الحاسوب و تكنولوجيا المعلومات

القسم: تكنولوجيا المعلومات

برنامج/ ماجستير تكنولوجيا المعلومات

وثيقة مواصفات برنامج ماجستير تكنولوجيا المعلومات Program Specification of Master of IT

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وثيقة مواصفات برنامج ماجستير / ماجستير تكنولوجيا المعلومات

مقدمة Introduction

تواكب كلية الحاسوب وتكنولوجيا المعلومات التطور والنمو المتزايد في مجال الحاسوب وتكنولوجيا المعلومات لمواكبة احتياجات المجتمعات المتسارعة لإحداث نهضة نوعية في بيئتها من خلال استخدام التكنولوجيا ونظمها لتحسين أداء المجتمع علميا وبحثيا. كما يعمل قسم تكنولوجيا المعلومات على نشر العلم والمعرفة التقنية والتكنولوجية لكافة الطلاب بكل حيادية ونزاهة ومهنية عالية دون الالتفات الى اي اعتبارات، هدفها الطالب أولا والرسالة السامية للقسم لتخرج طلبة يكونوا لبنة صالحة وفاعلة في المجتمع المحلي والاقليمي. لذا يسعى القسم الى تطوير تخصص ماجستير يدرس وفق أحدث وأرقى اساليب التدريس الجامعي باستخدام الأساليب والوسائل الحديثة في التعليم.

ونتيجة لذلك برزت الحاجة للتوسع في برامج الدراسات العليا نظرا لأهمية هذه التخصصات ومدى إحتياج المجتمع اليمني والمجتمعات الإقليمية المجاورة للكفاءات المتخصصة والمهارات الاحترافية في تكنولوجيا المعلومات. لذا فان القسم يسعى إلى تقديم برنامج دراسات عليا (ماجستير) في تخصص تكنولوجيا المعلومات بحيث يكون نوعي ومنافس وبما يلبي الإحتياج المتزايد للسوق المحلية والإقليمية.

The College of Computer Science and Information Technology keeps pace with the growing development and growth in the field of computing and information technology. This is in line with the needs of rapidly evolving societies, and aims to bring about a qualitative renaissance in their environment through the use of technology and its systems to improve society's scientific and research performance. The Department of Information Technology also works to disseminate scientific and technological knowledge to all students with impartiality, integrity, and high professionalism, regardless of any considerations. Its goal is to put students first, and the department's lofty mission is to graduate students who will be a valuable and effective building block in the local and regional community. Therefore, the department seeks to develop a master's degree program taught in accordance with the latest and most advanced university teaching methods, utilizing modern educational methods and tools.

As a result, the need to expand graduate programs has emerged, given the importance of these specializations and the need of Yemeni society and neighbouring regional communities for specialized competencies and professional skills in information technology. Therefore, the department seeks to offer a qualitative and competitive postgraduate program (Master's) in information technology, meeting the growing needs of the local and regional market.

معلومات عامة عن البرنامج Program Identification and General Information

1	اسم البرنامج والدرجة العلمية:	ماجستير تكنولوجيا المعلومات
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2	الجهة المسؤولة عن منح الدرجة العلمية (الكلية/المركز/المعهد):	كلية الحاسوب وتكنولوجيا المعلومات
3	الجهة المسؤولة عن تنفيذ البرنامج (القسم العلمي):	قسم تكنولوجيا المعلومات
4	الأقسام العلمية المشاركة في تنفيذ البرنامج:	قسم تكنولوجيا المعلومات
5	لغة الدراسة في البرنامج:	عربي/ English
6	عام البدء بالدراسة (للبرامج الجديدة):	2026/2025
7	أسلوب الدراسة في البرنامج (انتظام/ عن بعد...الخ):	انتظام
8	نوع برنامج الماجستير (مقررات دراسية ورسالة/ مقررات دراسية ومشروع بحثي/ رسالة)	مقررات دراسية ورسالة
9	مكان تنفيذ البرنامج (في الجامعة أم خارجها):	الجامعة – كلية الحاسوب وتكنولوجيا الجامعات
10	نظام الدراسة في البرنامج (نظام ساعات معتمدة، فصلي، سنوي...):	فصلي
11	الزمن الكلي للبرنامج (إجمالي السنوات والساعات المعتمدة لمنح المؤهل):	عامين- 36 ساعة
12	المهنة/ المهن التي يعد البرنامج الخريج للالتحاق بها:	1. مهندس شبكات Network Engineer: إدارة البنية التحتية للشبكات، وضمان أمان واستقرار الاتصال داخل المؤسسة. 2. مدير مشاريع تقنية المعلومات IT Project Manager: قيادة فرق العمل التقنية وتنفيذ المشاريع ضمن الوقت والميزانية المحددة. 3. مدير تكنولوجيا المعلومات IT Manager / CIO: الإشراف على البنية التقنية الكاملة للمؤسسة ووضع استراتيجيات التطوير التقني. 4. مهندس إنترنت الأشياء IoT Engineer: ربط الأجهزة الفيزيائية بالإنترنت وتطوير حلول ذكية متكاملة و آمنة. 5. محاضر أو باحث أكاديمي في مجال تكنولوجيا المعلومات: تدريس وتطوير البحوث في الجامعات والمعاهد. 6. محلل مخاطر تقنية المعلومات IT Risk Analyst: تقييم وإدارة المخاطر التقنية في الأنظمة المعلوماتية. 7. مدير بيانات Data Manager: يدير البيانات كأصل مهم من أصول المؤسسات ويستخرج منها المعرفة لرفع مستوى المؤسسات
13	مستوى/ مستويات التأهيل المستهدفة في البرنامج (نوع الشهادة التي تمنح للطالب في حال التعثر):	(مثلاً: الطالب الملتحق بالمتنشر - الذي لا يستطيع إكمال البرنامج يمكن أن يوفر له البرنامج نقاط خروج مبكرة بمستوى تأهيل دبلوم متوسط)
14	المؤهل المطلوب للالتحاق بالبرنامج:	بكالوريوس في أي تخصص في الحاسوب
15	المعدل/ التقدير المطلوب للالتحاق بالبرنامج:	
16	شروط أخرى:	
17	اسم منسق البرنامج:	أ.م.د. إبراهيم أحمد البلطه
18	تاريخ آخر اعتماد لمواصفات البرنامج:	



University Vision, Mission and Aims رؤية الجامعة ورسالتها وأهدافها

University Vision رؤية الجامعة

To excel in providing high-quality education, pioneering scientific research, and impactful community service.

التميز في نوعية التعليم والبحث العلمي وخدمة المجتمع.

University Mission رسالة الجامعة

Sana'a University is dedicated to delivering high-quality education, promoting scientific research, contributing to community development by producing highly qualified graduates according to international quality standards, addressing the labor market needs, and striving for excellence and competitiveness locally and regionally.

تلتزم جامعة صنعاء بتقديم خدمات التعليم والبحث العلمي، والإسهام في تنمية المجتمع من خلال رفده بالكوادر البشرية المؤهلة وفقاً لمعايير الجودة والتفاعل الإيجابي مع تلبية احتياج سوق العمل من خلال التركيز على النوعية والتميز والمنافسة محلياً وإقليمياً.

Aims of the University أهداف الجامعة

1. Enhancing the University's academic and administrative performance to support the educational process.
2. Elevating the quality of the educational process.
3. Developing a robust framework for scientific research.
4. Providing opportunities for innovation and creativity that contribute to sustainable development.
5. Strengthening the University's partnerships with the community.

1. رفع كفاءة الأداء الأكاديمي والإداري للجامعة بما يخدم العملية التعليمية.

2. رفع مستوى جودة العملية التعليمية.

3. تطوير منظومة البحث العلمي،

4. إتاحة فرص الابتكار والإبداع بما يخدم التنمية المستدامة.

5. تعزيز الشراكة المجتمعية.

Faculty Vision, Mission and Aims رؤية الكلية ورسالتها وأهدافها

Faculty Vision رؤية الكلية

الريادة وطنياً والتميز إقليمياً في التعليم والبحث والابتكار والأثر المجتمعي في مجالات الحوسبة والتكنولوجيا.

To achieve a leading position locally and excellence regionally in education, research, innovation, and community impact in the fields of computing and technology.

■ رسالة الكلية Faculty Mission

تقديم تعليم نوعي في مجالات الحوسبة والتكنولوجيا لإعداد كوادر مؤهلة ملتزمة بأخلاقيات المهنة، وإنتاج بحوث مبتكرة، ضمن بيئة مُحفزة وشراكات مجتمعية فاعلة، تُلبّي متطلبات سوق العمل وتُسهم في تحقيق التنمية المستدامة والتحول الرقمي.

Providing distinguished education in the fields of computing and technology to prepare qualified graduates committed to professional ethics and produce innovative research, within a stimulating learning environment and effective community partnerships, addressing labor-market needs and contributing to the achievement of sustainable development and digital transformation.

■ أهداف الكلية Aims of the Faculty

- 1- تقديم تعليم نوعي في مجالات الحوسبة والتكنولوجيا لرفد المجتمع بكوادر مؤهلة ملتزمة بأخلاقيات المهنة قادرة على المنافسة والإبداع في سوق العمل تُسهم في تحقيق التنمية المستدامة والتحول الرقمي.
- 2- تصميم وتطوير برامج أكاديمية وبحثية نوعية، متوافقة مع معايير الجودة والاعتماد، وتواكب التحديات والتطورات واحتياجات سوق العمل.
- 3- توفير وتطوير بيئة أكاديمية مُحفزة تُنمّي التعلّم النشط، والتعليم، والبحث، والابتكار، والإبداع، وريادة الأعمال.
- 4- إنتاج بحوث مبتكرة وحلول تقنية في الحوسبة والتكنولوجيا تسهم في تحقيق التنمية المستدامة.
- 5- تطوير واستقطاب الكفاءات المتميزة بما يعزّز التعليم والبحث العلمي وخدمة المجتمع.
- 6- بناء وإدامة شراكة أكاديمية ومجتمعية فاعلة تعزز التعليم والتعلم والبحث العلمي.
- 7- تقديم الاستشارات التقنية والتدريب المتخصص، ونشر الثقافة الرقمية لتمكين القطاعات المختلفة ودعم التحول الرقمي.

1. Providing distinguished education in the fields of computing and technology to graduate qualified professionals committed to professional ethics, capable of competing and innovating in the labor market, and contributing to sustainable development and digital transformation.
2. Designing and developing distinguished academic and research programs, aligned with quality and accreditation standards, and responsive to evolving challenges and labor-market needs.
3. Offering and improving a stimulating academic environment that fosters active learning, teaching, research, innovation, creativity, and entrepreneurship.
4. Producing innovative research and technological solutions in computing and technology that contribute to sustainable development.
5. Developing and attracting distinguished cadres to enhance education, scientific research, and

community service.

6. Building and sustaining effective academic and community partnerships that enhance education, learning, and scientific research.
7. Providing technical consultations, specialized training, and spreading digital culture to empower various sectors and support digital transformation.

رسالة القسم العلمي وأهدافه Department Mission and Aims

■ رسالة القسم Department Mission

تقديم تعليم نوعي، وإنتاج بحوث مبتكرة في مجالات تكنولوجيا المعلومات مع الالتزام بأخلاقيات المهنة، من خلال بيئة محفزة وشراكة مجتمعية فاعلة، تُلبّي متطلبات سوق العمل، وتسهم في تحقيق التنمية المستدامة والتحول الرقمي.

Providing high-quality education and producing innovative research in the fields of information technology, with a commitment to professional ethics, through a stimulating environment and effective community partnerships that meet labor-market needs and contribute to the achievement of sustainable development and digital transformation.

■ أهداف القسم Department Aims

يهدف القسم إلى:

- 1- تقديم تعليم نوعي في مجالات تكنولوجيا المعلومات لرفد المجتمع بكوادر مؤهلة ملتزمة بأخلاقيات المهنة، قادرة على المنافسة والإبداع في سوق العمل، وتسهم في تحقيق التنمية المستدامة والتحول الرقمي.
 - 2- تقديم وتطوير برامج أكاديمية وبحثية نوعية تواكب التغيرات التكنولوجية في مجالات تكنولوجيا المعلومات وفقا لمتطلبات الجودة وسوق العمل.
 - 3- الإسهام في توفير بيئة أكاديمية محفزة تدعم التعليم والتعلم، وتشجع على الإبداع والابتكار، وتنمي قدرات الباحثين البحثية والتطبيقية.
 - 4- إنتاج بحوث علمية مبتكرة في مجالات تكنولوجيا المعلومات، ترتبط بحاجات المجتمع، وتسهم في إيجاد حلول رقمية فعالة تدعم التنمية المستدامة.
 - 5- تطوير واستقطاب الكوادر الأكاديمية والبحثية المتميزة، بما يعزز التميز التعليمي والبحثي.
 - 6- بناء شراكات أكاديمية ومجتمعية فاعلة تعزز التعليم والتعلم والبحث العلمي وخدمة المجتمع.
 - 7- تقديم الاستشارات والتدريب ونشر المعرفة المتخصصة في مجالات تكنولوجيا المعلومات.
- 1- Providing high-quality education in information technology to equip society with qualified professionals committed to professional ethics, capable of competing and innovating in the labor market, and contributing to sustainable development and digital transformation.

- 2- Providing and developing high-quality academic and research programs that keep pace with technological developments in information technology, in line with quality standards and labor-market needs.
- 3- Contributing to a stimulating academic environment that supports teaching and learning, fosters creativity and innovation, and develops students' research and applied competencies.
- 4- Producing innovative scientific research in information technology that responds to societal needs and contributes to effective digital solutions supporting sustainable development.
- 5- Developing and attracting distinguished academic and research talent, thereby strengthening excellence in education and research.
- 6- Building effective academic and community partnerships that enhance teaching and learning, scientific research, and community service.
- 7- Providing consultancy and training, and disseminating specialized knowledge in information technology.

رسالة البرنامج وأهدافه Program Mission and Aims

■ رسالة البرنامج Program Mission

إعداد كوادر مؤهلة في مجالات تكنولوجيا المعلومات مزودين بالمعارف والمهارات المتقدمة وملتمزين بأخلاقيات المهنة، قادرة على التفكير النقدي وتقديم حلول تقنية وبحثية متقدمة تلبى احتياجات سوق العمل الوطني والإقليمي من خلال بيئة محفزة وخدمة مجتمعية فاعلة.

Preparing qualified professionals in information technology, equipped with advanced knowledge and skills, committed to professional ethics, and capable of critical thinking to deliver advanced technical and research solutions that meet national and regional labor-market needs, through a stimulating environment and active community service.

■ أهداف البرنامج Program Aims

تصاغ أهداف البرنامج بحيث تكون واضحة وموضوعية قابلة للقياس، وتظهر من خلال المقررات الدراسية، وأن تحقق: (الأهداف التعليمية، الأهداف البحثية، الأهداف المهارية، أهداف خدمة المجتمع)

يهدف البرنامج الى:

- 1- إعداد كوادر مؤهلة في مجالات تكنولوجيا المعلومات، تتمتع بالكفاءة البحثية والمهنية، وتلتزم بأخلاقيات المهنة، وقادرة على الإبداع والمنافسة، وتقديم حلول متقدمة تلبى احتياجات المجتمع الوطني والإقليمي.
- 2- تزويد الباحثين بالمعارف والمهارات المتقدمة في مجالات تكنولوجيا المعلومات من خلال بيئة محفزة، وتطوير قدراتهم في البحث العلمي، التفكير النقدي، والعمل الجماعي وروح المبادرة.

3- إنتاج بحوث علمية في تكنولوجيا المعلومات ترتبط بتحديات المجتمع، ومتطلبات سوق العمل المحلي والإقليمي.

4- تقديم خدمة مجتمعية فاعلة تلبى الاحتياجات المحددة للسياقات الوطنية والإقليمية.

- 1- Preparing qualified professionals in information technology, well-equipped with research and professional competences, committed to professional ethics, capable of creativity and competition, and able to deliver advanced solutions that meet national and regional needs.
- 2- Equipping students with advanced knowledge and skills in information technology through a stimulating environment, and developing their capacities in scientific research, critical thinking, teamwork, and initiative.
- 3- Producing specialized scientific research linked to societal challenges and the requirements of the local and regional labor market.
- 4- Providing effective community service that addresses the specific needs of national and regional contexts.

مرجعيات البرنامج Program Benchmarks

إلى ماذا استند القسم العلمي في تطوير البرنامج مثلاً:

1. اللوائح والأنظمة الصادرة عن وزارة التربية والتعليم والبحث العلمي.
2. معايير التخصص الوطنية (نارس).
3. المعايير المرجعية لهيئات الاعتماد الإقليمية والعالمية.
4. البرامج المماثلة في الجامعات الأخرى (مسمى الدرجة/ عدد الساعات المعتمدة/ عدد الساعات طبيعة البرنامج/ عدد وأسماء المقررات) ... الخ

أسماء البرامج المرجعية المماثلة:

- Master of Information Technology, Virginia Tech, USA
<https://www.vt.edu/academics/graduate-school.html>
- Master in Information Technology, Batangas State University, Philippines
<https://batstateu.edu.ph/programs/informatics-and-computing-sciences/>
- Master in Computer Information, The University of Jordan, Jordan
https://computer.ju.edu.jo/Lists/OurPrograms/School_Postgraduate.aspx
- Open University Malaysia, Faculty of Technology & Applied Sciences, Master's degrees in Computer Science & IT
<https://www.mastersportal.com/search/master/computer-science-it>
- King Suad University, College of Computer and Information sciences, Master of science in IT, Information Technology, KSA.
<https://ccis.ksu.edu.sa/en/it>

ملحق (1) المعايير الأكاديمية للمحتوى لهيئة الاعتماد.

ملحق (2) مسح أسماء البرامج المماثلة للبرنامج الحالي.

ملحق (3) مسح مخرجات التعلم في البرامج المماثلة للبرنامج الحالي.

ملحق (4) مسح الساعات المعتمدة للبرامج المماثلة للبرنامج الحالي.

ملحق (5) مسح المقررات الدراسية في البرامج المماثلة للبرنامج الحالي.



ملخص مسح البرامج المرجعية المماثلة للبرنامج الحالي

البرنامج الحالي	البرامج المرجعية المماثلة					البيانات المطلوبة
	البرنامج الخامس	البرنامج الرابع	البرنامج الثالث	البرنامج الثاني	البرنامج الأول	
Master of Information Technology	Master of science in IT	Master of Information Technology	Master in Computer Information	Master in Information Technology	Master of Information Technology	اسم البرنامج:
Faculty of Computer Science and IT	College of Computer and Information sciences	Faculty of Technology & Applied Sciences	Faculty of King Abdullah II – School for Information Technology	College of Information and Computing sciences	Jointly offered by the College of Engineering and Pamplin College of Business	اسم الكلية/ المركز/ المعهد:
Sana'a University	King Suad Univ.	Open University Malaysia	The University of Jordan	Batangas State University	Virginia Tech	اسم الجامعة:
Yemen	KSA	Malaysia	Jordan	Philippines	USA	اسم الدولة:
مقررات و اطروحة	مقررات و اطروحة	مقررات و اطروحة	مقررات و اطروحة	مقررات و اطروحة	مقررات فقط	طبيعة الدراسة في البرنامج (مقررات واطروحة/ مقررات فقط/ اطروحة فقط)
انتظام	انتظام	انتظام/ عن بعد	انتظام	انتظام	عن بعد	أسلوب الدراسة في البرنامج (انتظام/ عن بعد)
2 Year	2 Year	6 semesters	2 Year	2 Year	2 Year	عدد الفصول الدراسية (ان وجدت)
30	30	30	24	30	33	إجمالي عدد الساعات المعتمدة للبرنامج (بدون اطروحة)
24	15	21	15	30	12	عدد الساعات المعتمدة للمقررات الإلزامية
6	15	9	9	0	21	عدد الساعات المعتمدة للمقررات الاختيارية
8	5	7	5	10	4	عدد المقررات الإلزامية
2	5	3	3	0	7	عدد المقررات الاختيارية
نعم	نعم	نعم	لا	نعم	لا	وجود مقررات إضافية تكميلية للالتحاق بالبرنامج وعددها
6	4	10	9	6	-	عدد الساعات المعتمدة للاطروحة
36	34	40	33	36	33	عدد الساعات المعتمدة (مقررات + أطروحة)
سنة	أكثر من فصل دراسي	سنة	سنة	من 4 الى 12 شهر	-	المدة المحددة لإنجاز الاطروحة
سنتين	سنتين	سنتين	سنتين	سنتين	15 شهر	الحد الأدنى لإنهاء البرنامج
3 سنوات	5 سنوات	4 سنوات	3 سنوات	5 سنوات	5 سنوات	الحد الأعلى لإنهاء البرنامج

مخرجات التعلم المقصودة للبرنامج (ILOs) Intended Learning Outcomes

أولاً: مجال المعرفة والفهم (A) Knowledge and Understanding

بعد الانتهاء من البرنامج بنجاح سوف يكون المتخرج قادراً على ان:

A1 - إظهار المعرفة العميقة بالنظريات الأساسية والمفاهيم والأدوات والمنهجيات ذات الصلة بتكنولوجيا المعلومات.

Demonstrate an in-depth knowledge of the foundational theories, key concepts, tools, and methodologies pertinent to Information Technology.

ثانياً: مجال المهارات الذهنية (B) Intellectual Skills

بعد الانتهاء من البرنامج بنجاح سوف يكون المتخرج قادراً على ان:

- | | |
|---|--|
| <p>B1 - تحليل وتقييم مشاكل الحوسبة المعقدة والمتقدمة، والاستفادة من أدوات وتقنيات الحوسبة لتطوير حلول مبتكرة.</p> <p>Analyze and evaluate complex and advanced computing problems, leverage computing tools and techniques to develop innovative solutions.</p> | |
| <p>B2 - اقتراح حلول مبتكرة تعتمد على الحوسبة تجمع بين وجهات نظر متنوعة، بما في ذلك الشبكات وإدارة البيانات والمشاريع والأمن السيبراني وإنترنت الأشياء والحوسبة الطرفية، لضمان الاستدامة والتحول الرقمي.</p> <p>Propose creative computing-based solutions combining diverse perspectives, including networking, data and project management, cybersecurity, and IoT and edge computing, to ensure sustainability and digital transformation.</p> | |

ثالثاً: مجال المهارات العملية والمهنية (C) Professional and Practical Skills

بعد الانتهاء من البرنامج بنجاح سوف يكون المتخرج قادراً على ان:

- | | |
|--|--|
| <p>C1 - تصميم ودمج وتطوير ونشر حلول الحوسبة الآمنة بطريقة إبداعية لتلبية متطلبات العمل في مجال تخصص البرنامج.</p> <p>Creatively design, integrate, develop, and deploy secure computing-based solutions to meet business requirements in the context of the program's discipline.</p> | |
| <p>C2 - إجراء البحوث العلمية لحل و سد أحدث الفجوات البحثية والتقنية المتعلقة بتكنولوجيا المعلومات</p> <p>Conduct scientific research to overcome and fill the gaps of the current state of the art related to Information Technology.</p> | |

رابعاً: مجال المهارات العامة (D) General Skills

بعد الانتهاء من البرنامج بنجاح سوف يكون المتخرج قادراً على ان:

- | | |
|---|--|
| <p>D1 - التواصل شفهيًا وكتابيًا لأداء المهام بكفاءة في أدوار مختلفة لتحقيق مشاريع عالية المستوى ومتطلبات البحث.</p> <p>Communicate verbally and in writing to perform tasks proficiently in various roles to fulfill high standard projects and research requirements.</p> | |
| <p>D2 - إظهار التزام صارم بالسلوك الأخلاقي والامتنال المنتظم لأفضل الممارسات لتحقيق المسؤوليات الأكاديمية والمهنية مع المشاركة النشطة في التطوير المهني المستمر.</p> <p>Demonstrate a strong commitment to ethical conduct and regularity compliance with the best practices to achieve academic and professional responsibilities while actively engaging in continuous professional development.</p> | |

ملحق (6) موازنة أهداف البرنامج مع مخرجات التعلم.

ملحق (7) موازنة مخرجات التعلم المقصودة للبرنامج مع المعايير الوطنية.

ملحق (8) موازنة مخرجات التعلم للبرنامج مع المعايير المرجعية للمحتوى العلمي.

هيكل البرنامج:

- الحد الأدنى لعدد الساعات المعتمدة أو الوحدات الدراسية لنيل درجة الماجستير في تخصص معين (30) ساعة معتمدة / وحدة دراسية، ويخصص إضافة لذلك (6) ساعات معتمدة للرسالة العلمية.
- يتكون هيكل البرنامج من المتطلبات التالية:

الوزن النسبي %	الساعات المعتمدة	عدد المقررات	المتطلبات
0%	يعتمد على سجل درجات المتقدم للدراسة في البرنامج	يعتمد على سجل درجات المتقدم للدراسة في البرنامج	مقررات استدراكية
66.67%	24	8	مقررات إجبارية
16.67%	6	2	مقررات اختيارية
16.66%	6	1	الرسالة
100.0%	36	11	الإجمالي

وفيما يلي تفصيل بمتطلبات هيكل البرنامج:

أولاً: المقررات الاستدراكية للبرنامج:

يجب على المتقدمين غير الحاصلين على خلفيات أكاديمية مناسبة أن يجتازوا مقررات دراسية تمهيدية والتي قد تكون أي من أو جميع المقررات التالية (بحسب قرار لجنة القبول وفق سجل مقررات الطالب):

المتطلبات القبليّة Pre-Requisites	الساعات المعتمدة Credit Hours				اسم المقرر Course Title	
	الإجمالي Total C.H	تمارين / سمنار Tut.	عملية Pr.	نظرية Th.		
	3		1	2	Programming Language	1
	3		1	2	Data Structures and Algorithms	2
	3		1	2	Principles of Databases	3
	3		1	2	Principles of Computer Networks	4
	3		1	2	Operating Systems	5
	3		1	2	Network Management and Protocols	6
	3		1	2	IT Project Management	7
	3		1	2	Information Security	8
	24		8	16	إجمالي الساعات المعتمدة	

ثانياً: المقررات الإجبارية:

المتطلبات القبليّة Pre-Requisites	إجمالي الساعات المعتمدة للمقرر	عدد الايام الدراسية للمقرر	الساعات المعتمدة Credit Hours				رمز المقرر Code/ NO.	اسم المقرر Course Title	
			الإجمالي Total C.H	تمارين / سمنار Tut.	عملية Pr.	نظرية Th.			
	42	14	3			3		Advanced Data Management	1
	42	14	3			3		Selected Topics in Networking	2
	42	14	3			3		Emerging Topics in IT	3

	42	14	3			3		Research Methodology	4
	42	14	3			3		Selected Topics in Cybersecurity	6
	42	14	3			3		IoT Technology and Applications	7
	42	14	3			3		Edge and Cloud Computing	8
	42	14	3			3		Software Development	9
	336	112	24			24		إجمالي الساعات المعتمدة	

ثالثاً: المقررات الاختيارية

المتطلبات القبليّة Pre- Requisites	اجمالي الساعات المعتمدة للمقرر	عدد الايام الدراسية للمقرر	الساعات المعتمدة Credit Hours				رمز المقرر Code/ NO.	اسم المقرر Course Title		
			الاجمالي Total C.H	تمارين/ سمنار Tut.	عملية Pr.	نظرية Th.				
	42	14	3			3		IT Management	Elective 1	1
	42	14	3			3		IT Auditing		2
	42	14	3			3		Technology Innovation and Strategy	Elective 2	3
	42	14	3			3		Seminar		4
	84	28	6			6		إجمالي الساعات المعتمدة		

رابعاً: رسالة الماجستير

تعد رسالة الماجستير واحدة من المتطلبات الرئيسية لنيل درجة الماجستير في برنامج تكنولوجيا المعلومات بواقع 6 ساعات معتمدة. يسمح للطلاب بتسجيل رسالة الماجستير بعد أن يجتاز كل المقررات الدراسية بنجاح و الحصول على معدل عام بما لا يقل عن 75%.

A master's thesis is one of the main requirements for obtaining a master's degree in information technology, consisting of 6 credit hours. Students are permitted to register for the master's thesis after successfully completing all courses and achieving a minimum overall GPA of 75%.

خارطة المنهج (تسكين/ موازنة مخرجات التعلم مع مقررات البرنامج):

Intended Learning Outcomes Mapping (Curriculum Map)

مخرجات البرنامج Program ILOs							المقررات Courses
D2	D1	C2	C1	B2	B1	A1	
√	√	√		√	√	√	Advanced Data Management
√	√	√	√	√	√	√	Selected Topics in Networking
√	√	√	√	√	√	√	Emerging Topics in IT



Program ILOs مخرجات البرنامج							المقررات Courses
D2	D1	C2	C1	B2	B1	A1	
√	√	√			√	√	Research Methodology
√	√	√	√		√	√	Elective (1)
√	√	√	√		√	√	Selected Topics in Cybersecurity
√	√	√	√	√	√	√	IoT Technology and Applications
√	√	√	√	√	√	√	Edge and Cloud Computing
√	√	√	√	√	√	√	Software Development
√	√	√			√	√	Elective (2)

Teaching Strategy		استراتيجيات التدريس (التعليم والتعلم):
تذكر استراتيجيات التدريس التي سوف تستخدم لتحقيق مخرجات تعلم البرنامج خلال تدريس مقرراته (المحاضرة، السمنار، التطبيق العملي، المجموعات ... وغيرها)، مع وصف لكيفية استخدام كل منها بإيجاز.		
وصف كيفية استخدامها	استراتيجية التدريس	م
These are interactive lectures weekly conducted in the class and supported with variety of teaching formats including, lectures and multimedia presentations, use of whiteboard and solved examples, and class discussions, in which concepts, approaches, and case studies are presented, explored, and shown students what they need to know.	Lectures/Interactive Lectures	1
Illustrations performing an activity so that learners can observe how it is done in order to help prepare learner to transfer theory to practical application. Moreover, this strategy involves the teacher showing learners how to do something	Illustrations	2
Assigned project is given to student and he must give a seminar to present his project.	Seminar/ Project/Presentation	3
Discussions are carried out about some aspects. related to the subject. It involves a large or small group activity that encourages students to focus on a topic and contribute to the free flow of ideas. The teacher may begin a brainstorming session by posing a question or a problem, or by introducing a topic. Students then express possible answers, relevant words and ideas	Discussions	4
Students are encouraged to undertake independent study to both supplement and consolidate what are being learned.	Directed self- study	5
This allows students to become more active in their learning as they work out which information they need to find out how to solve a particular problem.	Problem Solving	6
It is a process for generating multiple ideas/options in which judgment is	Brainstorming	7



suspended until a maximum number of ideas has been generated. It is a common teaching approach that is often used by organizing a meeting of a group of students in a round circle, so that students combined focus their thinking on solving a problem in creative ways, and this strategy is usually followed in educational meetings and work sessions to stimulate students, their thinking and discussion.

استراتيجيات التقييم		Assessment Strategy
تذكر نظم وقواعد وشروط الجلوس للامتحانات (هل للبرنامج نظمه وقواعده وشروطه الخاصة أم يخضع لنظم وقواعد وشروط الامتحانات المعمول بها في الكلية/المركز / المعهد المعني. وتتضمن وصفا لأساليب تقويم التعلم ذات العلاقة بمخرجات تعلم البرنامج)، مع وصف لكيفية استخدام كل منها بإيجاز.		
م	استراتيجية التقييم	وصفها (في أي المقررات تستخدم ومعدل استخدامها)
1	Written Examinations	Mid. term & Final exams for each course is required for all courses except Graduation Projects. These exams will evaluate the extent in which the student understanding of theoretical and applied subjects
2	Assignments	Home works and assignments will evaluate students according to their ability to explain and illustrate the assignments they are given.
3	Oral exams	Oral exams is useful to evaluate the extent of understanding the different subjects of the course.
4	Quizzes	Quizzes asses' student ability to follow the lecturer during the study course.
5	Writing Technical/Project Report	Assessing students to their ability to write theoretical and lab reports as well as the understanding of organizing the reports. The practical lab sessions are required for some courses.
6	Coursework Activities	Coursework Activities is one of the assessment methods by which it can evaluate students.
7	Presentations	Is an assessment of the ability to organize and the way of presentation.
8	Seminar	

نظام وأسلوب الدراسة في البرنامج:
نظام الدراسة: انتظام
أسلوب الدراسة: مقررات + رسالة
مدة البرنامج: سنتين
عدد الساعات لإكمال البرنامج: 36 ساعة معتمدة



الخطة الدراسية لبرنامج Study Plan:

تكتب أسماء المقررات باللغتين العربية والانجليزية

First Semester						الفصل الأول		
المتطلبات القبليّة Pre- Requested	Credit Hours المعتمدة				رمز المقرر Code / No	اسم المقرر Course Title		
	Total C.H.	تمارين/ سمنار Tut.	عملي Pr.	نظري Th.				
	3			3		ادارة بيانات متقدم	Advanced Data Management	1
	3			3		مواضيع مختارة في الشبكات	Selected Topics in Networking	2
	3			3		مواضيع ناشئة في تكنولوجيا المعلومات	Emerging Topics in IT	3
	3			3		مناهج بحث	Research Methodology	4
	3			3		اختياري (1)	Elective (1)	5
	15			15		اجمالي الساعات المعتمدة Total Credit Hours		

Second Semester						الفصل الثاني		
المتطلبات القبليّة Pre- Requested	Credit Hours المعتمدة				رمز المقرر Code / No	اسم المقرر Course Title		
	Total C.H.	تمارين/ سمنار Tut.	عملي Pr.	نظري Th.				
	3			3		مواضيع مختارة في الأمن السيبراني	Selected Topics in Cybersecurity	1
	3			3		تقنية انترنت الاشياء وتطبيقاتها	IoT Technology and Applications	2
	3			3		الحوسبة الطرفية والسحابية	Edge and Cloud Computing	3
	3			3		تطوير البرمجيات	Software Development	4
	3			3		اختياري (2)	Elective (2)	5
	15			15		اجمالي الساعات المعتمدة Total Credit Hours		

المتطلبات القبليّة Pre- Requested	Credit Hours	رمز المقرر Code / No	اسم المقرر Course Title
	6	—	رسالة الماجستير

متطلبات/ شروط القبول في البرنامج Admission Requirements for the Program

تحديد متطلبات القبول في البرنامج وتذكر فقط الشروط التي لم تنص عليها اللائحة الموحدة للدراسات العليا وقواعدها التنفيذية بالجامعة

التخصصات المطلوبة:	أي درجة بكالوريوس في الحوسبة أو برامج ذات صلة بالحوسبة
درجة اللغة المطلوبة TOEFL / IBT	--
مهارات الحاسوب (ICDL)	--
شروط أخرى: مثل (اختبار القبول/ المقابلة الشخصية)	- أي شروط أخرى معتمدة من مجلس الكلية او الجامعة

متطلبات التخرج من البرنامج Graduation Requirements

بالإضافة إلى المتطلبات المنصوص عليها في لائحة الدراسات العليا والبحث العلمي بالجامعة، يُمنح الطالب درجة الماجستير إذا أكمل بنجاح 36 ساعة معتمدة، وذلك وفقاً للشروط والمتطلبات التالية:

1. يجب على الطالب إكمال 30 ساعة معتمدة، موزعة على عشرة مقررات دراسية.
2. يُعد الطالب ناجحاً في المقرر إذا حصل على 65% على الأقل من إجمالي درجات المقرر.
3. يجب على الطالب الحصول على معدل تراكمي لا يقل عن 75% ليتمكن من التسجيل في رسالة البحث.
4. يجب إكمال رسالة الماجستير والدفاع عنها بنجاح، بإجمالي 6 ساعات معتمدة.
5. يجب نشر بحث واحد على الأقل في مجلة علمية محكمة كجزء من رسالة الماجستير.

In addition to the requirements stipulated in the university's Graduate Studies and Scientific Research Regulations, which must be met, a student is awarded a master's degree if they successfully complete 36 credit hours according to the following conditions and requirements:

1. The student must successfully complete 30 credit hours, consisting of ten courses.
2. The student is considered to have passed the course if they obtain at least 65% of the total course grade.
3. The student must obtain a cumulative GPA of at least 75% to be able to register for the research thesis.
4. The master's thesis must be successfully completed and defended, with a total of 6 credit hours.
5. At least one research paper must be published in a peer-reviewed journal as part of the master's thesis.

المصادر والتجهيزات والامكانات اللازمة لتنفيذ البرنامج:

Resource and equipment's needed for Program Implementations

مثل: مصادر التعلم/ التجهيزات والأدوات والمواد التعليمية/ المعامل والمختبرات وغيرها...

- 1- المراجع المطبوعة مثل الكتب والدوريات
- 2- اشتراكات في دور النشر العالمية لتسهيل الوصول الى احدث الابحاث المحلية والعالمية

الكادر التدريسي:

أستاذ مساعد	أستاذ مشارك	أستاذ	
3	4	2	الكادر المطلوب
3	4	2	الكادر المتوفر
جميع الكادر متوفر			ملاحظة



تقويم البرنامج وتحسينه Program evaluation and improvement		
العينة Sample	طريقة التقويم Assessment method	الفئة المستهدفة Targeted
All candidates	Interviews questionnaires	Final Year Students
All candidates	Interviews questionnaires and meetings	Graduates
As many as possible	Survey questionnaires	Employers
Experts from CAQA, ministry of higher education	Reports	Council of Accreditation and Quality Assurance (CAQA)

وصف مقررات البرنامج:

م	المقرر	الوصف
1	Advanced Data Management	This course provides an in-depth exploration of advanced concepts, techniques, and tools for managing, processing, and analyzing large-scale, complex, and heterogeneous data. It builds on foundational database and information management knowledge, equipping students with the skills necessary to design efficient data systems, ensure data quality, and support modern applications such as big data analytics, cloud-based systems, and AI-driven decision making. Students will critically engage with cutting-edge research and technologies in data management while applying theoretical principles to real-world case studies. Emphasis is placed on scalability, security, integration, and governance in contemporary data ecosystems, preparing students for both academic research and professional practice in data-intensive fields.
2	Selected Topics in Networking	The goal of this course is to expose students to recent topics in wired and wireless networks, with a focus on the architectural and protocol aspects underlying the design and operation of such networks. It includes a broad range of topics such as routing protocols, quality-of-service, traffic control, flow control, protocols for both wired and wireless, ad hoc networks, sensor networks, next-generation networks, data centers, network security, etc. They will also use simulations to evaluate the performance of various design concepts.
3	Emerging Topics in IT	This course explores current and rapidly evolving areas in Information Technology (IT), providing students with advanced insights into cutting-edge innovations that shape the future of computing, data, and digital society. Unlike traditional IT courses, this subject focuses on emerging paradigms, disruptive technologies, and future-oriented practices that influence research, industry, and policy. The course emphasizes critical analysis of trends, practical experimentation with selected technologies, and discussion of their societal, ethical, and



		organizational implications. Students will engage with case studies, research papers, and hands-on projects to understand how emerging IT domains transform business models, scientific inquiry, and everyday life.
4	Research Methodology	The Research Methodology course is intended to introduce the students to the fundamentals of methodologies and methods of academic research. students will examine the major components of a research framework and be effectively exposed to them, namely problem definition, research design, data collection, ethical research concerns, report writing, and submission. In particular, the course focuses on developing students' skills in writing research proposals, reports, dissertations, and choosing appropriate methodologies for different types of study. At the end of the course, Students should become competent in planning, conducting, evaluating, and presenting a research project.
5	Selected Topics in Cybersecurity	The purpose of this course is to provide students with an overview of Cybersecurity and some cutting-edge topics. Topics as Cybersecurity methodologies, standards, threats, and vulnerabilities, security models, software security and digital forensics, risk management and policy development, social media and intrusion detection, Industrial control systems, Cybersecurity legal frameworks and Cybersecurity automation will be introduced. Further emphasis will be placed on technologies that help to prevent, detect, and respond to cybersecurity incidents. Students will be asked to search for new technologies in cyber security as IoT and blockchain, among many others.
6	IoT Technology and Applications	This course provides a comprehensive exploration of the technologies, architectures, and applications of the Internet of Things (IoT). It covers both the theoretical foundations and practical implementation of IoT systems, emphasizing the integration of sensors, communication protocols, data processing, and intelligent decision-making in diverse domains such as healthcare, smart cities, industry, and environmental monitoring. Students will gain hands-on experience with IoT platforms, cloud-based services, and edge computing frameworks. The course also highlights issues of scalability, interoperability, security, and privacy, enabling students to design and evaluate IoT solutions that address real-world challenges.
7	Edge and Cloud Computing	This course explores the theories, architectures, technologies, and applications of edge and cloud computing as the backbone of modern distributed systems. It provides a comprehensive understanding of how large-scale computing infrastructures are designed and deployed to support data-intensive and latency-sensitive applications such as IoT, AI, 5G/6G, and real-time analytics. Students will learn to critically evaluate cloud service models, design scalable and fault-tolerant systems, and integrate edge devices with cloud platforms for optimized performance. The course emphasizes not only technical foundations but also challenges in security, resource management, sustainability, and compliance. Through case studies and hands-on projects, students will acquire advanced skills to architect, manage, and innovate in edge-cloud ecosystems for both academic and industrial applications.



8	Software Development	This course offers a comprehensive study of advanced principles, methodologies, and practices in software development. It is designed for graduate students who seek to deepen their expertise in designing, building, and maintaining high-quality, scalable, and secure software systems. Emphasis is placed on modern development paradigms, software architecture, agile practices, DevOps, testing strategies, and emerging technologies. The course integrates both theoretical foundations and hands-on practice through real-world projects, case studies, and collaborative development. Students will critically evaluate development processes, tools, and frameworks, while acquiring the ability to architect complex systems that meet evolving user and business requirements.
9	Technology Innovation and Strategy	This course examines the strategic role of technology and innovation in shaping competitive advantage, organizational transformation, and long-term sustainability. It provides a multidisciplinary perspective that integrates theories of innovation management, strategic decision-making, entrepreneurship, and emerging technologies. Students will explore how organizations identify opportunities, design and implement innovation strategies, and adapt to disruptive technological changes in global markets. Through case studies, simulations, and applied projects, students will critically analyze real-world examples of successful and failed innovations. The course emphasizes both analytical frameworks and practical tools for developing innovation strategies that align with organizational goals, industry dynamics, and societal needs.
10	IT Auditing	This course provides graduate-level students with a comprehensive understanding of the theories, practices, and methodologies of Information Technology (IT) auditing in modern organizations. It focuses on the evaluation of IT systems, controls, and processes to ensure confidentiality, integrity, availability, and compliance with standards and regulations. Students will explore frameworks, tools, and best practices used to assess IT risks, audit information systems, and assure governance, security, and operational efficiency. The course balances conceptual foundations with practical applications, preparing students to critically analyze IT infrastructures, identify vulnerabilities, design audit programs, and recommend improvements. Emphasis will be placed on the integration of IT auditing with enterprise risk management, cybersecurity, and regulatory compliance.
11	IT Management	This course offers a comprehensive exploration of advanced concepts, strategies, and practices in Information Technology (IT) management, emphasizing the role of IT as a strategic enabler of organizational performance and innovation. It equips students with the theoretical frameworks and practical tools required to design, implement, and manage IT systems that align with business goals in dynamic and competitive environments. Students will develop expertise in IT governance, digital transformation, enterprise systems, and emerging technologies. Special focus is placed on the integration of IT strategy with organizational objectives, the management of IT resources, and the evaluation of IT's impact on innovation, competitiveness, and



		sustainability. Case studies, research insights, and practical applications prepare students for leadership roles in IT management across diverse industries.
12	Seminar	This seminar provides a platform for graduate students to critically engage with contemporary research, debates, and methodologies in [discipline/field]. The course emphasizes scholarly discussion, critical reading, academic writing, and presentation skills. Students will explore recent advancements, examine seminal works, and evaluate ongoing challenges in the field. The seminar fosters independent thinking, intellectual exchange, and the ability to situate research within broader theoretical, practical, and interdisciplinary contexts. Through weekly readings, student-led discussions, and research presentations, participants will deepen their subject knowledge, refine their analytical skills, and prepare for thesis work, academic publishing, or professional research practice.

فريق الاعداد

1. أ.م.د. إبراهيم احمد البلطه
2. أ.م.د. ناجي علي الشيباني
3. أ.د. شرف عبدالحق الحُمدي
4. أ.م.د. عمار ثابت زهاري
5. أ.م.د. عدنان يحيى المتوكل



الملاحق *Appendixes*

المعايير: Academic Content Standards of the Accreditation Commission: **Appendix 1:** الأكاديمية للمحتوى لهيئة الاعتماد

III. GENERAL CRITERIA FOR MASTER'S LEVEL PROGRAMS

General Criteria for Stand-Alone Master's Programs

Criterion MS1. Students Student performance and progress toward completion of programs of study must be monitored and evaluated. The program must have and enforce policies and procedures to ensure that a program of study with specific educational goals is developed for each student. The program must document and enforce procedures to ensure that students who graduate meet all graduation requirements.

Criterion MS2. Program Educational Objectives The program must have published program educational objectives that are consistent with the mission of the institution, the needs of the program's various constituencies, and these criteria. There must be a documented, systematically utilized, and effective process, involving program constituencies, for the periodic review of these program educational objectives that ensures they remain consistent with the institutional mission, the program's constituents' needs, and these criteria.

Criterion MS3. Student Outcomes The program must have documented and publicly stated student outcomes that enable graduates to attain a mastery of a specific field of study or area of professional practice consistent with the program's discipline. These outcomes must include (1) through (5) below and any outcomes required by applicable Program Criteria. The program may define additional outcomes.

Graduates of the program will have an ability to:

1. analyze a complex problem and apply principles of computing and other relevant disciplines to elaborate solutions to it,
2. design, implement, and evaluate a computing-based solution to meet a given set of



Computing Accreditation Commission

CRITERIA FOR ACCREDITING COMPUTING PROGRAMS

Effective for Reviews during the 2025-2026 Accreditation Cycle

Incorporates all changes approved by the ABET Board of Delegates
Computing Area Delegation as of October 25, 2024



requirements in the context of the program's discipline,

3. communicate effectively in a variety of professional contexts,
4. recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles, and
5. function effectively as a member and leader of a team engaged in activities appropriate to the program's discipline.

Criterion MS4. Continuous Improvement The program must regularly use appropriate, documented processes for assessing and evaluating the extent to which the student outcomes are being attained. The results of these evaluations must be systematically utilized as input for the program's continuous improvement actions. Other available information may also be used to assist in the continuous improvement of the program.

Criterion MS5. Curriculum The program curriculum must provide adequate content for each element of the curriculum, consistent with the student outcomes and program educational objectives, to ensure that students are prepared to enter the profession. The curriculum must include:

1. a minimum of 30 semester credit hours (or equivalent) beyond the baccalaureate level,
2. topics in a specific field of study or area of professional practice consistent with the program name and at a level beyond baccalaureate-level programs, and
3. a project or research activity resulting in a set of deliverables that demonstrates both the mastery of the subject matter and a high level of communication skills.

Additionally, graduates of the program must have completed a set of educational and professional experiences of at least 30 semester credit hours (or equivalent) that includes mathematics appropriate to the discipline as well as up-to-date coverage of fundamental and advanced computing topics that provide both breadth and depth. The documented experiences must include computing topics covering:

1. techniques, skills, and tools necessary for computing practice,
2. principles and practices of privacy and security in computing, and
3. local and global impacts of computing solutions on individuals, organizations, and society.

Each student's overall program of post-secondary educational and professional experience must satisfy the curricular components of the Program Criteria relevant to the master's level program name.

Criterion MS6. Faculty Each faculty member teaching in the program must have competency and currency within the program's discipline consistent with the contributions to the program expected from the faculty member. The competency of faculty members must be demonstrated by such factors as education, professional credentials and certifications, professional experience, ongoing professional development, contributions to the discipline, teaching effectiveness, and communication skills. Collectively, the faculty must have the breadth and depth to cover all curricular areas of the program.

The faculty serving in the program must be of sufficient number to maintain continuity, stability, oversight, student interaction, and advising. The faculty must have sufficient responsibility and authority to improve the program through definition and revision of program educational objectives and student outcomes as well as through the implementation of a program of study that fosters the attainment of student outcomes. Faculty teaching graduate-level courses must have appropriate educational qualifications by education or experience.



Criterion MS7. Facilities Classrooms, offices, laboratories, and associated equipment must be adequate to support attainment of the student outcomes and to provide an atmosphere conducive to learning. Modern tools, equipment, computing resources, and laboratories appropriate to the program must be available and systematically maintained and upgraded to enable students to attain the student outcomes and to support program needs. Students must be provided appropriate guidance regarding the use of the tools, equipment, computing resources, and laboratories available to the program. The library services and the computing and information infrastructure must be adequate to support the scholarly and professional activities of the students and faculty.

Criterion MS8. Institutional Support Institutional support, resources, and leadership must be sufficient to:

- ensure the quality and continuity of the program;
- attract, retain, and provide for the continued professional development of a qualified faculty;
- acquire, maintain, and operate infrastructures, facilities and equipment appropriate for the program; and
- create and foster a respectful environment among the program's students, faculty, staff, and administrators such that the student outcomes can be attained. Resources include institutional services and policies, financial support, and administrative and technical staff.

General Criteria for Integrated Baccalaureate-Master's Programs

Criterion MI1. Students Student performance must be evaluated. Student progress must be monitored to foster success in attaining student outcomes, thereby enabling graduates to attain program educational objectives. Students must be advised regarding curriculum and career matters. The program must have and enforce policies for accepting both new and transfer students, awarding appropriate academic credit for courses taken at other institutions, and awarding appropriate academic credit for work in lieu of courses taken at the institution. The program must have and enforce procedures to ensure and document that students who graduate meet all graduation requirements. The program must have and enforce policies and procedures to ensure that an individual program of study with specific educational goals is developed for each student as part of the master's level component of the program.

Criterion MI2. Program Educational Objectives The program must have published program educational objectives that are consistent with the mission of the institution, the needs of the program's various constituencies, and these criteria. There must be a documented, systematically utilized, and effective process, involving program constituencies, for the periodic review of these program educational objectives that ensures they remain consistent with the institutional mission, the program's constituents' needs, and these criteria.

Criterion MI3. Student Outcomes The baccalaureate-level component of the program must support student outcomes specified in Criterion 3 of the General Criteria for Baccalaureate Level Computing Programs and any outcomes required by applicable baccalaureate Program Criteria appropriate to the program's discipline. In addition, the program must have outcomes for the master's level component that prepare graduates to attain a mastery of a specific field of study or area of professional practice consistent with the program name.

Criterion MI4. Continuous Improvement The baccalaureate-level component of the program must support the process of continuous improvement as prescribed in Criterion 4 of the General Criteria for Baccalaureate Level Computing Programs. The master's level component of the program must have a documented and operational process for assessing, maintaining and enhancing the quality of the program.



Criterion MI5. Curriculum The program's requirements must be consistent with its program educational objectives and designed in such a way that each of the student outcomes can be attained. The baccalaureate-level curriculum component of the program must be consistent with the requirements of Criterion 5 of the General Criteria for Baccalaureate Level Computing Programs and any curriculum required by applicable baccalaureate Program Criteria appropriate to the program's discipline. The curriculum must also include:

1. a minimum of 30 semester credit hours (or equivalent) beyond the baccalaureate level,
2. a limited number of credit hours may be shared between the baccalaureate and master's programs but must be credit hours allowable in the master's level curriculum, and
3. topics in a specific field of study or area of professional practice consistent with the program name and at a level beyond the baccalaureate level.

Criterion MI6. Faculty Each faculty member teaching in the program must have competency and currency within the program's discipline consistent with the contributions to the program expected from the faculty member. The competency of faculty members must be demonstrated by such factors as education, professional credentials and certifications, professional experience, ongoing professional development, contributions to the discipline, teaching effectiveness, and communication skills. Collectively, the faculty must have the breadth and depth to cover all curricular areas of the program. The faculty serving in the program must be of sufficient number to maintain continuity, stability, oversight, student interaction, and advising. The faculty must have sufficient responsibility and authority to improve the program through definition and revision of program educational objectives and student outcomes as well as through the implementation of a program of study that fosters the attainment of student outcomes. In addition, faculty teaching graduate level courses must have appropriate educational qualifications by education or experience.

Criterion MI7. Facilities Classrooms, offices, laboratories, modern tools, computing resources, and associated equipment must be safely and systematically maintained and upgraded, and must be adequate to support attainment of the student outcomes, provide an atmosphere conducive to learning, and to support program needs. Students must be provided guidance on the appropriate and safe use of the tools, equipment, computing resources, laboratories, and other resources available to them. The library services and the computing and information infrastructure must be adequate to support the scholarly and professional activities of the students and faculty.

Criterion MI8. Institutional Support Institutional support, resources, and leadership must be sufficient to: a) ensure the quality and continuity of the program; b) attract, retain, and provide for the continued professional development of a qualified faculty; c) acquire, maintain, and operate infrastructures, facilities and equipment appropriate for the program; and d) create and foster a respectful environment among the program's students, faculty, staff, and administrators such that the student outcomes can be attained. Resources include institutional services and policies, financial support, and administrative and technical staff.



Appendix 2: Survey of Similar Accredited Programs at National and International Universities (Benchmarks)

Program No.	The Academic Program	The University	Website	The Faculty	The Department	The Country	Degree Award at Program Completion	Program Accrediting Body	Year of Accreditation	Study Duration
Current Program	Master of Information Technology	Sana'a University	https://su.edu.ye	Faculty of Computer and Information Technology (FCIT)	Information Technology	Yemen	Master of Information Technology	New	New	2 Years
The 1st Program	Master of Information Technology	Virginia Tech	https://www.vt.edu/academics/graduate-school.html	Jointly offered by the College of Engineering and Pamplin College of Business		USA	Master of Information Technology	ABET		2 Years
The 2nd Program	Master in Information Technology	Batangas State University	https://batstateu.edu.ph/programs/informatics-and-computing-sciences/	College of Information and Computing sciences	IT	Philippines	Master in Information Technology MIT			2 Years
The 3rd Program	Master in Computer Information	The University of Jordan	https://computer.ju.edu.jo/Lists/OurPrograms/school_Postgraduate.aspx	Faculty of King Abdullah II – School for Information Technology	Computer Information Systems	Jordan	Master in Computer Information	ABET		2 Years
The 4th Program	Master of Information Technology	Open University Malaysia	https://www.mastersportal.com/search/master-computer-science-it	Faculty of Technology & Applied Sciences	Information Technology	Malaysia	Master of Information Technology			6 Semester 2 - years (40) Cr.Hrs
The 5th Program	Master of science in IT	King Saud Univ.	https://ccis.ksu.edu.sa/en/it	College of Computer and Information sciences	Information Technology	KSA	Master of science in IT			2 Years



Appendix 3: Survey of PILOs for Similar Accredited Programs at National and International Universities

Current Program PILOs	Similar Accredited Programs						Accreditation Bodies
	The 1 st Program	The 2 nd Program	The 3 rd Program	The 4 th Program	The 5 th Program		ABET
A1	PILO1	A1,2; B10,11	PILO4	PILO1,4	A1, 2		SO 4
B1	PILO2	B8	PILO1, 7	PILO1,2	Value1, B.Skill1		SO 1
B2	PILO2	B9; C3,	PILO2	PILO1,2,5	Skill2; Value1	B1	SO 2
C1	PILO4	B2,3; C2	PILO6	PILO2	Skill2	C1	SO 1
C2	PILO1	C4,5,6	PILO6	PILO4	Skill3	C2	SO 2
C3	PILO1	A4; B7; C1	PILO7	PILO3,5	Skill 1	C3	SO 4
D1	PILO3	B1	PILO3, 5	PILO3	Skill 3	D1,2,3	SO 3, SO 5
D2	PILO1	A3; B3; C1	PILO4	PILO4,5	Value2; Skill3	D4,5,6	SO 4

King Saud University
program's Outcomes

A. Knowledge and Understanding:

The graduate student at this level will have:

- ❖ In depth and specialized body of knowledge and understanding covering theories, principles, and concepts in main areas of a discipline, profession, or field of work
- ❖ Advanced knowledge and understanding of recent developments in one or more disciplines, areas of practice, or professions.

B. Skills:

The graduate student at this level will have a range of advanced and specialized cognitive and communication skills to:

- ❖ Analyze a problem, identify requirements and design appropriate IT solution, and provide appropriate justification for the solutions and design
- ❖ Evaluate and explain findings of the developed systems/solutions.
- ❖ Communicate effectively in oral and in writing to both technical and general audiences.

C. Values, Autonomy and Responsibility

- ❖ Recognize the importance of standards of academic and professional integrity.
- ❖ Effectively collaborate and participate in research or professional projects or groups, undertake leadership roles, and take high responsibility of the work.



Appendix 4: Survey of Number of Courses and Credit Hours of Similar Programs

University		Sana'a University		Virginia Tech		Batangas State University		The University of Jordan		Open University Malaysia		King Saud Univ.		Average	
		CHs	No. of Courses	CHs	No. of Courses	CHs	No. of Courses	CHs	No. of Courses	CHs	No. of Courses	CHs	No. of Courses	CHs	No. of Courses
Program Name		Master of Information Technology													
Total CHs and Courses		36	10	33	11	30	10	33	8	30	10	34	10		
Requirement	Type	CHs	No. of Courses	CHs	No. of Courses	CHs	No. of Courses	CHs	No. of Courses	CHs	No. of Courses	CHs	No. of Courses	CHs	No. of Courses
University Requirements	Compulsory	0	0	--	--	--	--	--	--	--	--	--	--	--	--
	Electives	0	0	--	--	--	--	--	--	--	--	--	--	--	--
	Percentage	0%	0%	--%	--%	--%	--%	--%	--%	--%	--%	--%	--%	--%	--%
Faculty Requirements	Compulsory	0	0	--	--	--	--	--	--	--	--	--	--	--	--
	Electives	0	0	--	--	--	--	--	--	--	--	--	--	--	--
	Percentage	--%	--%	--%	--%	--%	--%	--%	--%	--%	--%	--%	--%	--%	--%
Department Requirements	Compulsory	0	0	--	--	--	--	--	--	--	--	--	--	--	--
	Electives	0	0	--	--	--	--	--	--	--	--	--	--	--	--
	Percentage	--%	--%	--%	--%	--%	--%	--%	--%	--%	--%	--%	--%	--%	--%
Program Requirements	Compulsory	24	8	12	4	30	10	15	5	21	7	15	5	--	--
	Percentage	66.67%	80%	36.36%	36.36%	100%	100%	45.45%	62.5%	70%	70%	44.12%	50%	--%	--%
	Electives	6	2	21	7	0	0	9	3	9	3	15	5	--	--
	Percentage	16.67%	5.56%	63.64%	63.63%	0%	0%	27.27%	37.5%	30%	30%	44.12%	50%	--%	--%
	Graduation Project/Thesis	6	1	--	--	6	1	9	1	10	1	4	1	--	--
	Percentage	16.67%	10%	--%	--%	20%	10%	27.27%	12.5%	33.33%	10%	17.76%	10%	--%	--%
	Summer Training	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Percentage	--%	--%	--%	--%	--%	--%	--%	--%	--	--	--	--	--%	--%
	Industrial Training	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Percentage	--%	--%	--%	--%	--%	--%	--%	--%	--	--	--	--	--%	--%
	Practical Skills	--	--	--	--	--	--	--	--	--	--	--	--	--	--



University		Sana'a University		Virginia Tech		Batangas State University		The University of Jordan		Open University Malaysia		King Saud Univ.		Average	
	Percentage	---	---	---	---	---	---	---	---					--	--
Total	CHs/Courses	36	11	33	11	36	11	0	0	0	0	0	0		
	Percentage	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%		
Other Courses		0	0	0	0	0	0	0	0	0	0	0	0	--	--
Total		36	10	33	11	30	10	33	8	30	10	34	10		
		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%		

Appendix 5: Comparison of Program Courses and Similar Programs Courses

#	Current Program			1 st Program			2 nd Program			3 rd Program			4 th Program			5 th Program		
	Course Name	Course Hours		Course Name	Course Hours		Course Name	Course Hours		Course Name	Course Hours		Course Name	Course Hours		Course Name	Course Hours	
		C	H		C	H		C	H		C	H		C	H		C	H
1	Advanced Data Management	3	3	Elective	3	3	Data Mining	3	3	Database System	3	3	Elective	3	3	Elective	3	3
2	Selected Topics in Networking			Elective	3	3	Advanced Operating Systems and Networking	3	3	-			Elective	3	3	Elective	3	3
3	Emerging Topics in IT			Elective						Elective	3	3	Methodology of Information System Development	3	3	Elective	3	3
4	Research Methodology									Research Methodologies	3	3	Research Methods	3	3			
5	Elective (1)			Elective	3	3				Elective	3	3	Elective	3	3	Elective	3	3
6	Selected Topics in Cybersecurity			Elective	3	3	Advanced Data Security	3	3	Elective	3	3	Information Security Management	3	3			
7	IoT Technology and Applications			Elective	3	3	IoT Technology Application & IoT Programming	3	3							Advanced Topics in Internet of Things	3	3
8	Edge and Cloud Computing	3	3	Elective	3	3										Advanced Topics in Web Technologies	3	3



#	Current Program				1 st Program				2 nd Program				3 rd Program				4 th Program				5 th Program						
	Course Name	Course Hours			Course Name	Course Hours			Course Name	Course Hours			Course Name	Course Hours			Course Name	Course Hours			Course Name	Course Hours					
		C	H	LTP		C	H	LTP		C	H	LTP		C	H	LTP		C	H	LTP		C	H	LTP	C	H	LTP
	g																										
9	Software Development				Software Engineering	3	3		Advanced Systems Design and mplementat on	3	3		Software Engineer ng	3	3		Software Quality and Metrics	3	3		Elective	3	3				
10	Elective (2)				Elective	3	3						Electiv e	3	3		Elective	3	3		Elective	3	3				
11	Thesis	6							Thesis	6			Thesis	9			Thesis	10			Thesis	4					
	CHs Total	36				33				36				33				40				34					

Note: C H: Credit Hours; L: Lecture; T: Tutorial; P: Lab Session.

Appendix 6: Program Intended Learning Outcomes (PILOs)

I = Introduced; P=Practiced; M/A=Mastered/Advanced

No.	Course Code	Course Title	Program Intended Learning Outcomes (PILOs)							
			A1	B1	B2	C1	C2	C3	D1	D2
1		Advanced Data Management	√	√	√	√	√	√	√	√
2		Selected Topics in Networking	√	√	√	√	√	√	√	√
3		Emerging Topics in IT	√	√	√	√	√	√	√	√
4		Research Methodology	√	√	√	√	√	√	√	√
5		Elective (1)	√	√	√	√	√	√	√	√
6		Selected Topics in Cybersecurity	√	√	√	√	√	√	√	√
7		IoT Technology and Applications	√	√	√	√	√	√	√	√
8		Edge and Cloud Computing	√	√	√	√	√	√	√	√
9		Software Development	√	√	√	√	√	√	√	√
10		Elective (2)	√	√	√	√	√	√	√	√
11		Thesis	√	√	√	√	√	√	√	√

Program Intended Learning Outcomes (PILOs)

Upon successful completion of the graduate Information Technology Program, the graduates will be able to:

A1. Demonstrate an in-depth knowledge of the foundational theories, key concepts, tools, and methodologies pertinent to Information Technology.

B1. Analyze and evaluate complex and advanced computing problems, leverage computing tools and techniques to develop innovative solutions.

B2. Propose creative computing-based solutions combining diverse perspectives, including networking, data and project management, cybersecurity, and IoT and edge computing, to ensure sustainability and digital transformation.



C1. Creatively design, integrate, develop, and deploy secure computing-based solutions to meet business requirements in the context of the program's discipline.

C2. Conduct scientific research to overcome and fill the gaps of the current state of the art related to Information Technology.

D1. Communicate verbally and in writing to perform tasks proficiently in various roles to fulfill high standard projects and research requirements.

D2. Demonstrate a strong commitment to ethical conduct and regularity compliance with the best practices to achieve academic and professional responsibilities while actively engaging in continuous professional development.

Appendix 7: Alignment of Department Mission and Program Mission

Department Program	تقديم تعليم نوعي	مع الالتزام بأخلاقيات المهنة	إنتاج بحوث مبتكرة في مجالات تكنولوجيا المعلومات	من خلال بيئة محفزة و شراكة مجتمعية فاعلة	تلبية متطلبات سوق العمل	وتسهم في تحقيق التنمية المستدامة والتحول الرقمي
إعداد كوادر مؤهلة في مجالات تكنولوجيا المعلومات	✓				✓	✓
مزودين بالمعارف والمهارات المتقدمة	✓		✓			
وملتزمين بأخلاقيات المهنة		✓				
قادرة على التفكير النقدي وتقديم حلول تقنية وبحثية متقدمة			✓			✓
تلبية احتياجات سوق العمل الوطني والإقليمي					✓	✓
من خلال بيئة محفزة وخدمة مجتمعية فاعلة				✓	✓	✓

Appendix 8: Alignment of Program Graduate Attributes and Program Objectives

Attribute Objective	Attrib1	Attrib2	Attrib3	Attrib4	Attrib5	Attrib6	Attrib7
PObj1	✓		✓		✓	✓	
PObj2	✓	✓	✓	✓	✓	✓	✓
PObj3		✓	✓				✓
PObj4				✓	✓	✓	



Appendix 9: Alignment of Program Graduate Attributes and Program Intended Learning Outcomes

Attribute	Attrib1	Attrib2	Attrib3	Attrib4	Attrib5	Attrib6	Attrib7
A1	✓			✓	✓	✓	✓
B1		✓	✓				✓
B2	✓	✓	✓		✓		✓
C1	✓	✓	✓		✓	✓	✓
C2	✓			✓	✓	✓	✓
D1				✓	✓	✓	✓
D2		✓	✓	✓	✓	✓	✓

Appendix 10: Graduate Attributes:

Graduate Attributes:

Upon successful completion of Master of Information Technology Program, graduates will be able to:

Attrib1. Deep and comprehensive knowledgeable:

- Graduates have deep knowledge and comprehensive understanding of Information Technology theories, facts, tools, techniques, methodologies, and infrastructures.

Attrib2. Creative and critical thinker:

- Graduates will be able to creative thinking, analyze and evaluate the effectiveness of information technology strategies and solutions from various software and hardware perspective.

Attrib3. Complex system Developer and advanced problem Solver:

- Graduates have capabilities to develop complex information technology systems.
- Graduates have advanced skills to identify and resolve complicated technological issues, troubleshoot incidents, and choose effective countermeasures.

Attrib4. Project Manager and Collaborator:

- Graduates have professional IT project management skills and abilities.
- Graduates can able to work effectively individually or within a team work to achieve shared tasks.
- Graduates have the ability to clearly communicate with others via various means.

Attrib5. Professional and Responsible:

- Graduates will adhere to professional responsibilities and ethical conduct, act with integrity, and take of their actions and decisions to improve organization performance.

Attrib6. Researcher:

- Graduates will possess research skills to explore information technology emerging trends and challenges through independent study or research.

Attrib7. Self-learner:



Graduate Attributes:

- Graduates will be adhering to develop their knowledge and skills through self-study, professional development, and engagement with the information technology community.

Appendix 11: Program Intended Learning Outcomes (PILOs)

1. Program Intended Learning Outcomes (PILOs):

A. Knowledge and Understanding:

Upon successful completion of the graduate Information Technology Program, the graduates will be able to:

- A1. Demonstrate an in-depth knowledge of the foundational theories, key concepts, tools, and methodologies pertinent to Information Technology.

A. Cognitive/ Intellectual Skills:

Upon successful completion of the graduate Information Technology Program, the graduates will be able to:

- B1. Analyze and evaluate complex and advanced computing problems, leverage computing tools and techniques to develop innovative solutions.
- B2. Propose creative computing-based solutions combining diverse perspectives, including networking, data and project management, cybersecurity, and IoT and edge computing, to ensure sustainability and digital transformation.

B. Practical and Professional Skills:

Upon successful completion of the graduate Information Technology Program, the graduates will be able to:

- C1. Creatively design, integrate, develop, and deploy secure computing-based solutions to meet business requirements in the context of the program's discipline.
- C2. Conduct scientific research to overcome and fill the gaps of the current state of the art related to Information Technology.

C. General and Transferable Skills:

Upon successful completion of the graduate Information Technology Program, the graduates will be able to:

- D1. Communicate verbally and in writing to perform tasks proficiently in various roles to fulfill high standard projects and research requirements.
- D2. Demonstrate a strong commitment to ethical conduct and regularity compliance with the best practices to achieve academic and professional responsibilities while actively engaging in continuous professional development.



Appendix 12: Alignment of Program Objectives and Program Intended Learning Outcomes

Program Objectives Program PILOs	PObj1	PObj2	PObj3	PObj4
A1	✓			
B1		✓	✓	
B2			✓	
C1	✓			
C2			✓	
C3		✓		
D1				✓
D2				✓

Appendix 13: Program Structure

No	Requirements	No. of Courses	Credit Hours	Rational Weight %
1	University Requirements	Compulsory	--	0%
		Elective	--	
2	Faculty Requirements	Compulsory	-	0%
		Elective	--	
3	Department Requirements	Compulsory	--	0%
		Elective	--	
4	Program Requirements	Compulsory	8	0.83%
		Elective	2	
5	Field Training (if any)	Compulsory	--	---%
6	Thesis	Compulsory	1	0.17%
Total:		1 (10 Courses 2 + Thesis)	36	100%