PROGRAM SPECIFICATION

MASTER IN
INFORMATION TECHNOLOGY ENTREPRENEURSHIP

PROGRAM PROFILE

INTRODUCTION

The Malaysian Government has launched the Malaysia Digital Economy Action Framework (MyDigital) and is expected to create 500,000 job opportunities in the field of information technology that need to be filled by local IT experts. This program aligns with the current needs of the Fourth Industrial Revolution (IR4.0) and 21st-century learning using a transdisciplinary approach. The program, designed in a transdisciplinary manner, has the potential to attract a larger number of student admissions from various fields, targeting candidates with a Bachelor's degree in any field from any recognized Higher Education Institution by the Senate of Universiti Teknologi Malaysia. The program also incorporates future skills development, including aspects of business (including business law and intellectual property) and exposure to and use of the latest technology, supported by industry panels and other stakeholders. Furthermore, the program has produced knowledgeable entrepreneurs providing technology-based solutions and digital business. It is expected to meet current market needs, remain relevant, and attract the interest of many prospective students. Graduates of this program are capable of running IT-based businesses and indirectly creating job opportunities for the public.

Meanwhile, the offering of the Bachelor's-Master's Integration Program (PRISMS) to students can encourage postgraduate student enrollment in this program. The program also accepts student applicants through APEL A and APEL C, considering work experience and credit transfer. The Teaching and Learning Methodology (PdP) for courses in this program is student-centered, employing active learning. In addition to face-to-face learning, the program will also use blended learning methods assisted by digital applications, such as online meeting applications like WEBEX and UTM e-Learning, for synchronous or asynchronous online learning implementation. A transformative 21st-century delivery-based PdP is also applied in this program. The methods used are based on the New Academia Learning Innovation (NALI), such as:

i. Problem-Based Learning
ii. Case Studies
iii. Collaborative Assignments

In addition to traditional assessments, courses in this program will also use alternative assessments. Alternative assessment is a method that measures

the level of student mastery compared to the level of student knowledge through Project-Based Assessment and Case Study-Based Assessment methods. It refers to the understanding of students in completing an assignment by utilizing existing knowledge.

ENTRY REQUIREMENT

Admission requirements for students entering the Master in Information Technology Entrepreneurship program are as follows:

i. A Bachelor's degree in Information Technology, Computer Science, Science, Technology, Engineering, Mathematics, Social Sciences, or its equivalent, recognized by the University Senate; and
ii. A Bachelor's degree or its equivalent with a minimum CGPA of 2.50; or
iii. A Bachelor's degree or its equivalent with a CGPA of at least 2.00 but not achieving 2.50 requires a thorough internal assessment.
iv. A Bachelor's degree or its equivalent, but not achieving a minimum CGPA of 2.00, must have a work experience of at least five (5) years in the relevant field.

Prerequisite Courses
There are no prerequisite course requirements for candidates who do not meet the criteria.

Admission Requirements for APEL (T-7)
This program accepts admission requirements from candidates who possess the Accreditation of Prior Experiential Learning (APEL) certificate with entry into the Master's degree program (APEL T-7) in the field of Information Technology.

APEL C Requirements
APEL C (Accreditation of Prior Experiential Learning - Credit Transfer) requirements for the purpose of awarding credits for this program are as follows: Students are allowed to apply for credit transfer for experiential learning-based courses, including learning obtained through non-formal and informal learning. This process allows credits for these courses to be counted as part of the graduation credit requirements for this program. Courses that have received credit transfer through APEL (C) will be given a Credit Transfer (APEL C) status in the student's academic transcript. The maximum percentage of credit transfer through APEL (C) is 30% of the total graduation credits for any study program.

Terms for Persons with Disabilities (OKU)

This program accepts student applicants from the category of Persons with Disabilities (OKU) as follows:

i. Category of physical disabilities only, as defined by the Public Service Commission (SPA).
ii. Applicants must be able to use their hands for writing and typing, as well as communicate effectively verbally.

ENGLISH REQUIREMENTS

a) Local Students

Competency in the English language is not mandatory.

b) International Students

International students who wish to enroll in postgraduate programs at UTM must meet the English language competency requirements as stipulated below:

i. Malaysian University Entrance Test (MUET) with a minimum score of Band 4.0 and above; or
ii. IELTS with a minimum score of Band 6.0 and above; or
iii. TOEFL iBT with a minimum score of 60 and above; or
iv. Cambridge English Qualifications (CEQ) B2 First (FCE), C1 Advanced (CAE), C2 Proficiency (CPE), with a minimum score of 168 and above; or
v. Pearson Test of English (PTE) Academic with a minimum score of 59 and above; or
vi. Any examination aligned with The Common European Framework of Reference (CEFR) with a minimum score of B2.

Exemptions from the English language requirement may be granted to international students from countries where English is the official language or international students who hold academic qualifications from institutions that use English as the primary language of instruction and intend to pursue higher studies in Malaysia.

Meanwhile, international students who do not meet these requirements may enroll in the Intensive English Programme (IEP) to improve their English proficiency at the Language Academy, UTM, or the Certified Intensive English Program (CIEP) at any ELS Language Centre in Malaysia for a maximum period of one year from the date of registration. Upon completion, students must take the MUET examination or any examination as specified in items (i) to (vi) to qualify for admission to the main study courses at UTM.

PROGRAM EDUCATION OBJECTIVES

The Master in IT Entrepreneurship program aims to produce digital entrepreneurs who are:

PEO 1:
Competent in developing businesses through IT platforms.

PEO 2:
Proficient in demonstrating entrepreneurial and communication skills to various stakeholders, thereby initiating and leading entrepreneurial ventures to achieve sustainable and innovative business goals.

PEO 3:
Committed to practicing professional ethics and demonstrating the qualities of a digital entrepreneur through lifelong learning, establishing continuous collaboration with various stakeholders.

PROGRAM LEARNING OUTCOMES

At the end of this program, the graduates will be able to:

PROGRAM LEARNING OUTCOMES (PLO)
(a)Technical Skills
PLO 1: Integrate digital technologies and entrepreneurial knowledge in business activities.
PLO 2: Propose appropriate digital solutions based on identified business opportunities.
PLO 3: Apply the latest skills in developing unique value propositions and business models for digital business solutions.
(b)Generic Skills
PLO 4: Demonstrate continuous collaboration with multiple stakeholders.
PLO 5: Demonstrate competencies in delivering ideas and solutions to various stakeholders.

PLO 6: Use diversified digital tools to develop and implement digital business solutions.
PLO 7: Apply quantitative and qualitative tools in analyzing data to understand a business environment.
PLO 8: Practice significant autonomy, leadership, and responsibility to achieve business goals.
PLO 9: Demonstrate self-advancement and principles of lifelong learning.
PLO 10: Initiate and maneuver digital-based entrepreneurial ventures in business.
PLO 11: Adhere to business ethics and professionalism, and contribute to the development of business practices.

CURRICULUM STRUCTURE

Code	Courses	Credit
Core Courses		
MFMS1013	Digital Business Application Domain	3
MFMS1023	Digital Business Research Methodology	3
MFMS1033	Emerging Issues in Digital Business Innovation	3
MFMS1043	Digital Business Project Management	3
MFMS1053	Product Creativity and Innovation	3
MFMS1073	Digital Product Design & Development	3
MFMS1083	Entrepreneurial Finance & Accounting	3
MFMS1093	Digital Product Marketing & Sales	3
IT Entrepreneurship Project		
MFMS1063	Project I: Product and Business Proposal	3
MFMS1164	Project II: Prototype Development and Business Strategy	4
MFMS2015	Project III: Production, Sales and Marketing	5
Elective Courses – 6 credits: Choose 2		
MFMS1103	Digital Business Leadership	3
MFMS1123	Digital Business Security	3
MFMS1133	Digital Business Analytic Tool	3
MFMS1143	Business Law and Intellectual Property	3
MFMS1153	Negotiation and Consultancy	3
University General Course – 3 credits: Choose 1		
U--- 6XX3	REFER UNIVERSITY GENERAL COURSES	3
TOTAL		**45**

SYNOPSIS OF COURSES

1) CORE COURSES

- **Code: MFMS1013**
  Course: Digital Business Application Domain

Synopsis: This course aims to expose students to the various domains of digital business and demonstrate how digital technology supports organizational operations. This exposure will provide students with a clear understanding of how digital solutions are implemented to solve real-world problems. These experiences will offer insights into current trends in digital business, with special attention given to identifying business opportunities based on advanced digital solutions.

- **Code: MFMS1023**
  Course: Digital Business Research Methodology

Synopsis: This course will equip students with the knowledge, understanding, and necessary skills to conduct business research needed to address a business problem. Topics covered include the identification of the business domain, generation of a business idea, conducting a literature review related to the business domain, developing a business research methodology to realize the business idea, as well as exploring types of data collection, data analysis, and ethics in business research. By the end of this course, students will produce an Initial Business Research Proposal.

- **Code: MFMS1033**
  Course: Emerging Issues in Digital Business Innovation

Synopsis: This course enables students to explore current issues, research solutions, and emerging technologies in digital business, digital technologies, and analytics. The course is divided into three parts. In the first part, students will explore current issues in digital business, digital technologies, and analytics. The second part involves conducting a literature review of papers from reliable journals and technical sources, exposing students to research solutions and emerging technologies related to current issues in digital business, digital technologies, and analytics. In the third part, students will discuss and provide opinions on the issues, research solutions, and emerging technologies in digital business, digital technologies, and analytics through both written and verbal communication.

- **Code: MFMS1043**
  Course: Digital Business Project Management

Synopsis: This course provides a hands-on perspective on digital business project management. It aims to assist students in planning and implementing

their digital business/IT projects effectively. Students will also utilize the latest tools for understanding, reviewing, communicating, and managing projects. Teams of students are expected to work on real projects, achieving agreed Key Performance Indicators (KPIs). Additionally, students will be able to demonstrate an understanding of consultancy activities, opportunities, and responsibilities.

- **Code: MFMS1053**
  Course: Product Creativity and Innovation

Synopsis: This course aims to introduce students to the fundamentals of innovation and the relationship between creativity and innovation. Students will also explore the importance of innovation as a strategy for business success and delve into the innovation process and sources of creativity. Subsequently, students will be exposed to the history of ICT innovation, understanding how information technology has evolved and shaped the global community. The course will further examine the significance of ICT-enabled transformations, helping students understand and appreciate the opportunities and threats presented by a new, technology-driven global economy. Students will develop a heightened awareness of how leading organizations use ICT to create transformations, and how they can leverage technology to improve their lives, remain competitive in the workforce, and thrive in this era of constant change and reinvention. Additionally, this course will equip participants with skills to understand and apply the processes of creativity and innovation. They will practice tools that significantly enhance creativity and effectiveness in problem-solving. Participants will be able to apply these skills both personally and professionally.

- **Code: MFMS1073**
  Course: Digital Product Design & Development

Synopsis: This course aims to introduce the process of digital product design and development. Students will explore various types of designs, developments, and maintenance of hardware and software technology products and applications. By the end of this course, it is expected that students will have a much clearer understanding of various digital product design and development processes. This understanding will enable them to simulate and advance their proposed ideas, allowing for accurate realization of their designs and aiding in the transformation of their ideas into workable prototypes.

- **Code: MFMS1083**
  Course: Entrepreneurial Finance & Accounting

Synopsis: This course aims to provide a thorough understanding of finance and accounting aspects related to starting and running a business. It focuses on the financial decision-making process, primarily from the perspective of the CEO of an entrepreneurial venture, covering stages from very early to very late. The course adopts a two-pronged approach. First, it exposes students to

the tools and concepts of corporate finance relevant to modeling, valuation, control, and investment decisions within an entrepreneurial context. Second, it utilizes case studies involving firms at different stages of their life cycles, from initial angel or venture capital investments through exit decisions. This approach allows students to explore the practical application of these principles and understand the issues that arise in real-world scenarios.

- **Code: MFMS1093**
  Course: Digital Product Marketing & Sales

Synopsis: This course aims to familiarize students with the role of marketing research in determining marketing strategy for a marketing plan. Students will be introduced to effective and feasible procedures when engaging in a market research study. They will then be guided through the steps of preparing the marketing plan. The course will explore various creative strategies and tools, including ICT, that may be used to differentiate or position the products or services of a new venture.

2) INFORMATION TECHNOLOGY ENTREPRENEURSHIP PROJECT

- **Code: MFMS1063**
  Course: Project I: Product and Business Proposal

Synopsis: This course introduces students to apply the knowledge and skills acquired from other subjects and real-world experiences to generate ideas for solving problems or exploiting identified opportunities. It involves exploring and organizing all data and information through conducting a literature review, as well as performing market research to support business ideas. Additionally, the course focuses on the development and presentation of IT-based business idea proposals with high commercial value.

- **MFMS1164**
  Course: Project II: Prototype Development and Business Strategy

Synopsis: This course focuses on the implementation of a product based on the application specification. Students will use appropriate technologies and skills to produce the application prototype as a proof of concept within the context of creating commercialized products. Additionally, students will conduct testing for the application prototype they have produced.

- **MFMS2015**
  Course: Project III: Production, Sales and Marketing

Synopsis: This course aims to continue and complete the prototype development, leading to the production of the beta prototype. Based on the completed prototype, students are required to design and produce the marketing and sales strategy for that specific product. Moreover, students are tasked with identifying potential partners and/or investors for potential

collaborations or investments. Thus, in this course, students are expected to produce a marketing strategy, prepare a sales strategy, and develop a thesis for evaluation at the end. Additionally, students should be able to finalize a business plan, incorporating the preliminary business plan from Project II and other enhanced components such as a financial plan, marketing plan, and sales plan, utilizing the knowledge and skills acquired throughout the course.

3) ELECTIVE COURSES – 6 CREDITS: CHOOSE 2

- **Code: MFMS1103**
  Course: Digital Business Leadership

Synopsis: This course aims to expose students to the principles of leadership and equip them to become effective leaders in an era of digital technology, adapting to current changes. The course is divided into three parts: the characteristics of adept digital leadership, transformation drivers, and assuming the role of a team leader in business sustainability. Students will have the opportunity to master the concepts of digital leadership through up-to-date course content, supported by various assessment approaches, including assignments, presentations, and projects.

- **Code: MFMS1123**
  Course: Digital Business Security

Synopsis: The course aims to provide the knowledge necessary for the administration and management of the principles and practices of information security and privacy. It consists of three parts. In the first part, students will be introduced to information security. The second part of the course will cover information privacy. The third part will focus on digital ethics. Throughout the course, topics such as threats, risks, technologies, and management will be discussed in each part.

- **Code: MFMS1133**
  Course: Digital Business Analytic Tool

Synopsis: This course enables students to explore current tools for data analytics. It consists of three parts. In the first part, students will explore internal and external organizational data as well as data management. In the second part, students will conduct data analytics using current analytic tools on the organizational data. In the third part, students will perform data analytics using current analytic tools on online organizational data. At the end of the course, students are required to produce a report in both written and verbal formats.

- **Code: MFMS1143**
  Course: Business Law and Intellectual Property

Synopsis: This course aims to expose students to the broad areas of law that affect business transactions and provides a comprehensive view of intellectual property rights. It deals with the principles, legal issues, and, where appropriate, practical considerations that are currently relevant to the needs of the technology-based industry. The course also introduces students to various aspects of infringement, remedies, exploitation, and protection provided under the law in addressing new challenges related to business and intellectual property issues.

- **Code: MFMS1153**
  Course: Negotiation and Consultancy

Synopsis: For entrepreneurs to effectively lead and administer any start-ups or business ventures, they must be capable of negotiating with both internal and external constituents in a manner that develops and maintains relationships, creates value, and can be utilized cross-culturally. Similarly, entrepreneurs must be able to identify situations that offer negotiation opportunities to benefit organizational and personal growth for key constituents. Furthermore, entrepreneurs must be proficient in consulting their offerings to clients. Therefore, this module applies practical skills, complemented with substantive knowledge, to round out the skill sets of the participants, making them highly effective leaders and entrepreneurs when dealing with negotiation and consultancy. Case studies are dissected, and in-depth experiences and reflection reports are requested to be developed as individual and team projects.

PROGRAM STRUCTURE

FULL TIME

YEAR 1				**YEAR 2**	
SEMESTER 1		**SEMESTER 2**		**SEMESTER 1**	
Courses	**Credit**	**Courses**	**Credit**	**Courses**	**Credit**
5 Cores	15	3 Cores	9	1 University General Course	3
		2 Elective Courses	6		
Project I	3	Project II	4	Project III	5
TOTAL	**18**	**TOTAL**	**19**	**TOTAL**	**8**
TOTAL CREDIT					**45**

TAUGHT COURSE IMPLEMENTATION

Students may graduate after successfully completing 45 credits and must obtain a final academic grade of at least 3.0 CGPA within a minimum study duration of 3 semesters (1½ years).

Students should:

- Achieve a total of 45 credit hours with a minimum CGPA of 3.0.
- Complete 42 credits:
  i. Core courses (24 credits)
  ii. IT Entrepreneurship Projects (12 credits)
  iii. Elective courses (6 credits)
- Complete 3 credits in University General Courses.

Upon meeting the above requirements, the student will be awarded the degree of **MASTER IN INFORMATION TECHNOLOGY ENTREPRENEURSHIP**.

CAREER OPPORTUNITIES

Graduates with a Master's in Information Technology Entrepreneurship can pursue various career paths that leverage their unique combination of information technology skills and entrepreneurial mindset. Here are some potential career options:

- Chief Technology Officer (CTO): Assume leadership roles within organizations to drive technology strategies, innovation, and digital transformation.
- Technology Entrepreneur: Graduates may choose to start their own technology-driven businesses, creating innovative products or services.
- Startup Consultant: Work as a consultant, advising startups and small businesses on technology adoption, business strategy, and entrepreneurship.
- Innovation Manager: Many larger companies hire professionals to lead innovation initiatives, ensuring the integration of cutting-edge technologies into their business models.
- Product Manager: Manage the development and launch of new technology products, ensuring they meet market needs and align with the company's business goals.
- Venture Capitalist/Investor: Graduates may work in venture capital firms, evaluating and investing in technology startups with high growth potential.
- Technology Strategist: Develop and implement technology strategies for businesses, ensuring that technology aligns with organizational objectives.

- E-commerce Entrepreneur: Start and manage an online business, leveraging technology to sell products or services.
- Digital Marketing Specialist: Use technology and digital platforms to create and implement marketing strategies for businesses.
- Technology Policy Analyst: Work in the public sector or for non-profit organizations, contributing to the development of technology policies and strategies.
- IT Project Manager: Oversee and manage technology projects within organizations, ensuring they are completed on time and within budget.
- Technology Consultant: Provide consulting services to businesses seeking guidance on technology adoption, optimization, and innovation.

The Master's in Information Technology Entrepreneurship equips graduates with a unique skill set blending technology expertise and entrepreneurial acumen, allowing them to thrive in a variety of roles within the technology and business sectors.