



UNIVERSITY  
of  
TECHNOLOGY,  
MAURITIUS



## **School of Innovative Technologies and Engineering**

**Department of Industrial Systems Engineering**

**&**

**Polytechnics Mauritius Ltd (PML)**

# **BSc (Hons) Emerging Technologies (Top-Up)**

## **PROGRAMME DOCUMENT**

VERSION 1.1

*BET VI.1*

October 2021

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**University of Technology, Mauritius**

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## **BSC (HONS) EMERGING TECHNOLOGIES (TOP-UP)**

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### **A. PROGRAMME INFORMATION**

This BSc (Hons) Emerging Technologies Top-Up programme is designed to give students a solid grounding within the technical themes of evolving technologies, namely, the Internet of Things, Big data, cloud computing, serverless computing, creation of smart solutions amongst others, as well as IT project management and team building and more generally within the theme of professional development. The graduates can take up demanding, responsible and exciting positions in the rapidly expanding industries that are embarking on creating solutions using emerging technologies. Additionally, the technologies within each module will be delivered in the context of business enablers, giving the students an insight into how businesses might deploy the technologies for competitive advantage

The Top-Up programme has been developed in consultation with the Polytechnics Mauritius Ltd (PML) and industry partners. It is geared mainly towards specific industry-used products and technologies that represent an extended way to deepen the technical expertise of the diploma holders from PML who have successfully completed a diploma in Information Technology with specialization in the Internet of Things and Big Data Analytics or a diploma in Emerging Technologies. The Top-Up programme is also open to students with a relevant diploma in Information & Communication Technology discipline from a recognized institution acceptable to the APL/APEL committee.

### **B. PROGRAMME AIMS**

The aims of the Top-Up programme are :

- (i) to bridge the gap between available skills in the current labour market and industry requirements
- (ii) to provide the diploma holders with the opportunity to upgrade their skills and knowledge in specific industry focussed technologies.

### **Employment Prospects**

There are many and varied career opportunities for graduates in the fields of emerging technologies in this evolving industry. These companies and organisations are large and strong in Mauritius and the region. Also, due to the global nature of this field, there are also career opportunities in other parts of the World. Possible jobs include Technical Consultant, System Analyst, System Programmer (AI & machine learning), Team Leader, Database Administrator, Software & Hardware Tester, Cloud support analyst, etc.

In addition, the programme can also lead to further studies and research such as an MSc or MPhil/PhD degree.

### **C. PROGRAMME OBJECTIVES**

After successful completion of the BSc (Hons) Emerging Technologies Top-Up programme, the graduates will have a systematic understanding of the key concepts and applications evolving in the area of computing and will widen their arsenal of tools, making them a valuable asset to the industry.

Upon completion of the programme, the graduates would have the ability:

- (i) to identify, formulate, and solve complex computing problems by applying their knowledge from the programme
- (ii) to communicate effectively with a range of audiences and to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
- (iii) to develop and conduct appropriate applications to capture, store, analyze and interpret data, and draw conclusions in complex environments
- (iv) to develop innovative applications in the area of mobile computing, the Internet of Things, Cloud computing, and data management.

## REGULATIONS

### D. GENERAL ENTRY REQUIREMENTS

As per UTM'S Admission Regulations, and 'Admission to Programmes of Study at First Degree Level' at Level 3.

### E. PROGRAMME ENTRY REQUIREMENTS

Holding either a Diploma in Information Technology (Big Data Analytics) or a Diploma in Information Technology (Internet of Things) or a Diploma in Emerging Technologies or a Diploma relevant in Information & Communication Technology from a recognized institution, pitched at level 6 of the National Qualifications Framework (NQF), acceptable to the APL/APEL committee.

### F. PROGRAMME MODE AND DURATION

Full-Time: Minimum 1 year (2 semesters) and Maximum 3 years (6 semesters)

Part-Time: Minimum 1.5 years (3 semesters) and Maximum 3.5 years (7 semesters)

### G. TEACHING AND LEARNING STRATEGIES

In general, for this programme, modules will be conducted via face-to-face mode. However, to cater for the impact of the COVID-19 pandemic and other similar situations, and matters connected, consequential, or related, the course may be run either via online or blended modes. The student would be expected to perform a substantial amount of self-learning both for the theoretical and practical parts of the modules and adopt a research-oriented approach, as far as possible.

To summarise, teaching and learning activities may include

- Lectures (L), Tutorials (T) and Practical (P) sessions
- Class Tests and Assignments
- Participating in quiz-based exercises
- Workshops / Seminars / Lab Sessions
- Industry visits so that students may observe company cultures and may network with industry professionals
- Structured Discussions & Self Development Study (SD)
- Case Study materials & scenarios.

### H. STUDENT SUPPORT AND GUIDANCE

- Academic tutoring and Counselling: Group tutorials or individual tutorials are arranged for students upon request.
- Supervision of mini-projects, group assignments, and final year capstone projects.

### I. ATTENDANCE REQUIREMENTS

As per PML's Regulations and Policy.

## J. CREDIT SYSTEM

This programme is aligned with the European Credit and Transfer System (ECTS). The programme promotes a unified procedure for academic recognition of study periods performed. The system introduces standards for assessment and comparison of study levels in various academic institutions and enables to recognition of diplomas at the European job market. ECTS credits are assigned to each module in the programme amounting to 60 credits for each level.

For each level, on average there will be 1500 hours of learning. One module is worth 6 credits and will carry 150 hours of learning to comprise 45 hours of delivery which could be any combination of face-to-face, blended, online, seminar, workshop, or joint session. The remaining 105 hours will cover self-learning, self-study, guest lecture, etc. The Capstone Project is assigned 12 credits.

## K. STUDENT PROGRESS AND ASSESSMENT

For the award of the degree, all modules must be passed overall with passes in the examinations, coursework, and other forms of assessment. All modules will carry 100 marks and will be assessed as follows (unless otherwise specified):

- (i) Written examinations will carry a weightage of 60% unless otherwise specified.
- (ii) Continuous assessment will normally carry a weightage of 40% unless otherwise specified.
- (iii) Continuous assessment for the following specific modules (Project Management & Team Working, Emerging Networks and Programming, Smart Solution for Mobile Devices) shall be 100% of the total marks. Continuous assessment can be based on a combination of assignments, field studies, workshops, and class tests.
- (iv) The overall pass mark for a module is 40%.

### Grading

Grade	Marks x (%)
A	$x \geq 70$
B	$60 \leq x < 70$
C	$50 \leq x < 60$
D	$40 \leq x < 50$
F	$x < 40$
A - D	Pass
F	Referred

## L. EVALUATION OF PERFORMANCE

The percentage mark contributes a 100% weighting towards the BSc degree classification.

## M. AWARD CLASSIFICATION

### Overall weighted mark $y$ (%)

$y \geq 70$
$60 \leq y < 70$
$50 \leq y < 60$
$45 \leq y < 50$
$40 \leq y < 45$
$y < 40$

### Classification

1st Class Honours
2 <sup>nd</sup> Class 1st Division Honours
2 <sup>nd</sup> Class 2 <sup>nd</sup> Division Honours
3rd Class Honours
Pass Degree
No Award

For the award of an Honours Degree, a total of 60 credits is required. Students who fail to qualify for the award of the degree will not be awarded.

## N. PROGRAMME ORGANISATION AND MANAGEMENT

**Contact Details :** Tel: 207-5250 Fax: 234-1767

**Email:** site@umail.utm.ac.mu or contact@poly.ac.mu

## O. PROGRAMME STRUCTURE (Full-Time)

YEAR 1 (Level 3 – 60 Credits)							
Semester 1				Semester 2			
Code	Modules	Hrs/Wk L/T/P+SD	Credits	Code	Modules	Hrs/Wk L/T/P+SD	Credits
BET3101C	Project Management & Team Working	3+7	6	BET3206C	Smart Solution for Mobile Devices	3+7	6
BET3102C	Analytical Databases	3+7	6	BET3207C	Emerging Networks and Programming	3+7	6
BET3103C	Cryptography for Security	3+7	6	BET3208C	User Experience Design	3+7	6
BET3104C	Blockchain Essentials	3+7	6	BET3209C	Serverless Computing	3+7	6
BET3005C	EmergiTech Capstone Project	-	-	BET3005C	EmergiTech Capstone Project	-	12

## P. PROGRAMME STRUCTURE (Part-Time)

YEAR 1 (Level 3 – 36 Credits)							
Semester 1				Semester 2			
Code	Modules	Hrs/Wk L/T/P+SD	Credits	Code	Modules	Hrs/Wk L/T/P+SD	Credits
BET3101C	Project Management & Team Working	3+7	6	BET3104C	Blockchain Essentials	3+7	6
BET3102C	Analytical Databases	3+7	6	BET3206C	Smart Solution for Mobile Devices	3+7	6
BET3103C	Cryptography for Security	3+7	6	BET3207C	Emerging Networks and Programming	3+7	6
				BET3005C	EmergiTech Capstone Project	-	-
→ Start of Level 3							

YEAR 2 (Level 3 – 24 Credits)							
Semester 3							
Code	Modules	Hrs/Wk L/T/P+SD	Credits				
BET3208C	User Experience Design	3+7	6				
BET3209C	Serverless Computing	3+7	6				
BET3005C	EmergiTech Capstone Project	-	12				
End of Level 3 →							

Total Number of ECTS Credits = 60.

Total Number of ECTS Hours = 1200 (excluding the number of hours spent to complete the Capstone project).

The first version (Version 1.1) was approved and launched in October 2021.