University of the West of England
BRISTOL

ACADEMIC SERVICES

PROGRAMME SPECIFICATION

Part 1: Basic Data	
Awarding Institution	University of the West of England and Taylor's University
Teaching Institution	University of West of England Taylor's University
Delivery Location	Frenchay Campus University of the West of England Coldharbour Lane Bristol BS16 1QY, England Taylor's University Taylor's Lakeside Campus No.1, Jalan Taylor's, 47500 Subang Jaya, Selangor, Malaysia
Study abroad / Exchange / Credit recognition	Taylor's University and University of the West of England, Bristol, Dual Awards Framework, Academic Regulatory Framework
Faculty responsible for programme	Environment and Technology
Department responsible for programme	Computer Science and Creative Technologies
Modular Scheme Title	
Professional Statutory or Regulatory Body Links	Malaysian Quality Assurance (MQA) http://apps.emoe.gov.my/qad/main.html UWE: British Computer Society (BCS)
Highest Award Title	UWE: BSc (Hons) Forensic Computing and Security TU: Bachelor of Computer Science (Honours) (Computer Security and Forensics)
Default Award Title	
Fall-back Award Title	
Interim Award Titles	Cert HE Forensic Computing and Security Dip HE Forensic Computing and Security BSc Forensic Computing and Security
UWE Progression Route	
Mode(s) of Delivery	FT, SW
ISIS Codes	**G4H4** G4H4 (SW), G4H413 (FT
Relevant QAA Subject Benchmark Statements	Computing (primary) Law (secondary)

CAP Approval Date	4 June 2015 v1.3, Jan 2017 v3
Valid from	September 2017
Valid until Date	September 2020
Version	3

Part 2: Educational Aims of the Programme

The general aims of the programme are:

1. To prepare students for careers in computer security and computer crime-investigation (e.g. 'forensic technician')
2. To develop problem-solving, communication and other transferable skills applicable to a variety of careers
3. To prepare students for study for higher degrees in related subjects

The specific aims of the programme are

1. To develop knowledge of computer hardware and software systems
2. To provide an understanding of applicable law, court procedure and the role of the expert witness
3. To introduce a variety of approaches to both the analysis of the security requirements of computer systems and the investigation of computer crime

Programme requirements for the purposes of the Higher Education Achievement Record (HEAR)

Graduates in the field of Computer Security and Computer Forensics would be expected to have an excellent understanding of the internal operation of computers and operating and file systems. They would be able to use appropriate tools to investigate computer-based activities, deploy tools and techniques to prevent security breaches and investigate the mis-use of computer systems and other devices.. As much of this work is carried out either directly in support of legal processes an understanding of appropriate legal systems and law would be expected.

Part 3: Learning Outcomes of the Programme

The award route provides opportunities for students to develop and demonstrate knowledge and understanding, qualities, skills and other attributes in the following areas:

(A) Knowledge and understanding of:

On completion of the programme students will have developed an understanding of a complex body of knowledge, some of it at the current boundaries of the disciplines, in the areas of:

1. Computer systems and networks Trusted computing base, threats and security policy. Computer security mechanisms in networks and computers at various layers and levels. Security technology innovations.
2. Information, data and its representation and organisation in computer systems
3. National legal system and court procedure. Skills and responsibilities of a forensic computing practitioner and expert witness
4. Law pertaining to computer crime and digital evidence and its investigation and legal and commercial aspects of Computer Security and Forensics
5. Security management. Defining, modelling and describing the concepts of trust and security policy. Securing access to services and applications from various devices.
6. Tools and techniques for investigating computer crime such as data mining and profiling

(B) Intellectual Skills

On completion of the programme students will be able to:

1. Critical Thinking
2. Analysis
3. Synthesis of different types of information

Part 3: Learning Outcomes of the Programme

4. Evaluation
5. Problem Solving
6. Appreciate problem contexts
7. Balance conflicting objectives

(C) Subject/Professional/Practical Skills

On completion of the programme students will be able to*:*

1. Understand a variety of computer systems, configurations and networking topologies
2. Understand the professional and legal obligations of forensic computing investigations and be able to communicate with legal personnel at an appropriate level
3. Be able to assess a computer crime scene and formulate a strategy for securing the evidence, investigating it impartially, and produce a report in appropriate language
4. Describe the key security mechanisms used in access control, authentication, encryption and digital signatures and perform systems analysis in terms of computer security.
5. Use software libraries and toolkits to implement security aware applications conforming to appropriate designs
6. Employ a range of tools and notations to support the activities listed above.
7. Know the limits of their knowledge and how to extend those limits through self-managed learning

(D) Transferable skills and other attributes

On completion of the programme students will be able to :

1. Communication skills**:** to communicate orally or in writing, including, for instance, the results of technical investigations, to peers and/or to "problem owners".
2. Self-management skills: to manage one's own time; to meet deadlines; to work with others having gained insights into the problems of team-based systems development.
3. IT Skills in Context (to use software in the context of problem-solving investigations, and to interpret findings)
4. Problem formulation: To express problems in appropriate notations.
5. Progression to independent learning: To gain experience of, and to develop skills in, learning independently of structured class work. For example, to develop the ability to use on-line facilities to further self-study.
6. Comprehension of professional literature: to read and to use literature sources appropriate to the discipline to support learning activities.
7. Working with Others**:** to be able to work as a member of a team; to be aware of the benefits and problems which teamwork can bring.

Refer to Appendix 6 for detailed learning outcome mappings.

Part 4: Student Learning and Student Support

At UWE, Bristol there is a policy for a minimum average requirement of 12 hours/week contact time over the course of the full undergraduate programme. This contact time encompasses a range of face to face activities as described below. In addition a range of other learning activities will be embedded within the programme which, together with the contact time, will enable learning outcomes to be achieved and demonstrated.

On the Forensic Computing and Security programme teaching is a mix of scheduled learning, independent learning and, possibly, placement learning.

Scheduled learning includes lectures, seminars, tutorials, project supervision, demonstration,

Part 4: Student Learning and Student Support

practical classes and workshops. Scheduled sessions may vary slightly depending on the module choices made.

Independent learning includes hours engaged with essential reading, technical subject practice, case study preparation, assignment preparation and completion etc. Scheduled sessions may vary slightly depending on the module choices made.

Placement learning: At UWE the placement is optional, nonetheless, students are strongly encouraged to take up this opportunity. The University and the department provide support in preparation for the placement in a number of ways. For example, during the second year, the department arranges a series of talks from former placement students and industrialists, aimed at illustrating the benefits of the placement year. Support in applying for placements is also provided through CV workshops, advertising of placement vacancies and more general information on careers and employability. They may alternatively take a study year abroad, in which case they take the International Experience module. Students who elect not to do a year-long placement or study abroad year are encouraged to gain work experience in other ways, for example through volunteering, summer interships and entrepreneurial schemes.

If a student opts to take a placement year, they must also undertake the level-three module, Professional Experience, while they are undertaking the placement.

At TU all students undertake a 10 week Industrial Training module.

Teaching and learning strategies to enable learning outcomes to be achieved and demonstrated

This section specifies the features and minimum standards of support that could be expected at UWE and TU.

Class Activities The teaching and learning methods are determined by the Module Leader, and typically involves a combination of one or more lectures, tutorials, 'lectorials', laboratory classes, group activities and individual project work. Modules are often delivered by means of 'lectorials', classes for groups of 20-30 students with no distinction between lectures and tutorials, and this has proved to be an effective mechanism for modules at all levels.
Where modules are common with other programmes, students will typically be taught together (which gives students the opportunity to appreciate the material from the viewpoint of different computing disciplines). However, a specialist flavour may be given to a common module through the provision of discipline specific practical, laboratory or tutorial material supporting a core of common lectures.

Academic Support Academic advice and support is the responsibility of the staff delivering the module in question. Staff are expected to be available outside normal timetabled hours, either by appointment or during published "surgery" hours, in order to offer advice and guidance on matters relating to the material being taught and on its assessment..

Virtual Learning Environment
UWE uses the Blackboard virtual learning environment to support the delivery of modules. All students at UWE have access to Blackboard for all modules on which they are enrolled. For most modules course materials and announcements are provided through Blackboard and for many modules the additional facilities provided by Blackboard are utilised to (e.g.) run formative tests, provide online forums and provide access to provisional coursework marks.

Pastoral Care
At UWE the faculty offers pastoral care through its Student Advisers, a team of staff who provide comprehensive, full-time student support service on a drop-in basis or by appointment. All

students on the same route are allocated to the same Adviser, who is trained to provide advice on matters commonly of concern, including regulatory and other matters; the Adviser will, when necessary, advise the student to seek advice to from other professional services including UWE's Student Services Department or from members of academic staff.

Progression to Independent Study

Many modules require students to carry out independent study, such as research for projects and assignments, and a full range of facilities are available at all sites to help students with these. The philosophy is accordingly to offer students both guided support and opportunities for independent study. Guided support, mainly in the form of timetabled sessions, takes the form of lectures, tutorials, seminars and practical laboratory sessions. Students are expected to attend all sessions on their timetable, and this is especially important because of the high content of practical work in the programme.

The progression to independent study will also be assisted by the nature of the support offered in individual modules. Typically, module leaders will provide a plan for the module indicating the activities to be carried out and the forms of learning to be undertaken during the delivery of the module, with a view to encouraging students to plan ahead and to take responsibility for managing their time and resources.

LEARNING RESOURCES

At both UWE and TU all modules have teaching/learning resource booklets or electronic equivalent and most have set texts in accordance with the UWE's Reading Strategy. Additional support is provided through the library and an extensive student computing network. All undergraduate modules use the institutional Blackboard system to thus provide students with 24/7 access to module information and resources on and off campus.

At TU the Learning and Academic Study Skills Centre (LASC) provides generic study skills workshops and personal assistance for students requiring such support. Workshops in (i) Study Skills include note taking, time management, problem solving techniques, writing skills, referencing, studying for examinations, etc; and (ii) 'Soft' skills include Leadership skills, communications skills, resume writing, interview skills, organizational skills, presentation skills, etc.

STUDENT SUPPORT AND GUIDANCE

At both UWE and TU, student support is provided by academic staff, usually module leaders, for all issues relating to the content and delivery of the module. At UWE, the UWE student advice services provide timely, accurate and confidential advice where necessary on all aspects of the provision including that relating to fees, assessment arrangements, late work and extenuating circumstances procedures, option choice, timetabling, examination and progression counselling and so on, as well as where and how to access the support provided by UWE. Additional support and guidance is provided by Programme Managers who are also responsible for ensuring the collection of and response to student feedback using student representatives and Programme Management Committees.

Further support is provided through the UG administration team, the admissions office, the Students Union, the central University career service and UWE's counselling provision. The UWE placements services provide extensive support for students in preparation for, as well as throughout, their study year abroad and acts both as an intermediary with partner institutions and as a recruitment service for employers.

In addition, BSc (Hons) Computer Security and Forensics will students will be encouraged to use social networking (e.g. Facebook) to interact – a strategy that has proven highly valuable on the existing UWE Forensic Computing degree. The Facebook site fosters social and academic

contacts between students on all years of the Programme and acts as an initial portal for applicants and a forum for graduates.

Students seeking employment opportunities during their studies have access to UWE's Job Shop and are also encouraged to develop valuable skills by volunteering with the Community Volunteer Service. The UWE international office provides support and organises specific activities to assist international students in adapting to life in the UK, such as an additional induction week, and the provision of specific literature to assist with their study. Further student support is provided by FET through the UG administration team, the Placements Office, the Admissions Office.

All students have a formal induction process to socialise them to university life and to provide them with the means to access the support that they may require during their study at UWE. A student handbook documents this for students. There are a range of central services offered to students. These include: Student Advice and Welfare for advice on finance and UWE's counseling provision; Career Development Unit for careers information; information technology services, student accommodation services, sports facilities, student union services, the Chaplaincy, and the Centre for Performing Arts.

Support to students with disability is offered both at the faculty level under the remit of the Disability Adviser and centrally through UWE's Disability Resource Service. The Disability Adviser coordinates academic support for disabled students in the Faculty. This includes communication of individual student's support requirements to teaching and support staff and advice and recommendations on reasonable adjustments to teaching and assessment. The Disability Adviser also coordinates staff development on disability issues and provides information and advice to academic and support staff and to students in relation to disability issues. Together, these act as a holistic service for disabled students and applicants to UWE and also support the academic and administrative staff members who work with disabled students.

At TU Student Central is responsible for handling matters pertaining to student welfare, counselling, international office and training materials for students. The Counselling Central helps students cope with studies, stress, time management and personal concerns ranging from homesickness to relationship problems. Student Services Department assists students with regards to study loans, scholarships, study grants and other financial assistance during their course of study at TU

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The International Office promotes understanding, cross-cultural learning and appreciation among students from various nationalities, racial and ethnic backgrounds on campus. It provides a comprehensive range of support services to international students to enable them to adapt to the culture and lifestyle of Malaysia. Services offered include course counselling; application and admission; student visa and pass application; airport pickup; orientation and familiarisation; and Immigration advice.

Formed by students for students, the Student Council represents students' 'voice' at TU. The Council plays a very central role in seeking solutions to problems faced by students in the academic and non-academic areas. They also spearhead the organisation of social activities for students. Members of the council are elected by the student body with representation from each programme. The Council is managed by an Executive Committee and advised by an Officer of TU.

The Divisional Office of the various schools is the nerve centre of the school around which all academic activities and student administration revolve. It handles a broad range of activities which include: timetabling; programme information; subject choice counselling; subject registration; student attendance; subject exemptions; course prerequisites; student withdrawal;

Part 4: Student Learning and Student Support

Student certification letters for loan application and EPF withdrawal; matters relating to fees; and general academic support.

The Career Centre provides various services and programmes to assist students in analysing their career interests, aptitudes, values and goals. It also assists students in career planning and preparation for job interviews, in addition to providing job placement services for graduating students through our network with industry and potential employers It's services include: career counselling; career talks and workshops; resume writing and grooming seminars; career-related fairs and company trips.

An orientation programme is organised for all students prior to the start of the programme. It introduces students to the support available within the School and University, via a range of speakers (e.g. representatives from the Divisional Office, Student Services, Library, ICT, etc.). An ICT services orientation will introduce students to the email, blackboard and student portal. International students will receive an induction from the International Office.

Description of the teaching resources provided for students

At both UWE and TU all modules have teaching/learning resource booklets or electronic equivalent and most have set texts in accordance with the UWE's Reading Strategy. Additional support is provided through the library and an extensive student computing network. All undergraduate modules use the institutional Blackboard system to thus provide students with 24/7 access to module information and resources on and off campus.

At TU the Learning and Academic Study Skills Centre (LASC) provides generic study skills workshops and personal assistance for students requiring such support. Workshops in (i) Study Skills include note taking, time management, problem solving techniques, writing skills, referencing, studying for examinations, etc; and (ii) 'Soft' skills include Leadership skills, communications skills, resume writing, interview skills, organizational skills, presentation skills, etc.

Part 5: Assessment

A: Approved to University Regulations and Procedures

Assessment Strategy

Assessment strategy to enable the learning outcomes to be achieved and demonstrated:

Assessment strategies for Forensic Computing and Security focus on ensuring a strong technical knowledge of computing devices, skills in the use of appropriate forensic tools and abilities in devising and deploying security measures.

Part 6: Programme Structure

		UWE: BSc (Hons) Computer Security and Forensics			Taylor's University: Bachelor of Computer Science (Honours) (Computer Security and Forensics)		
ENTRY ↓		**Compulsory modules** **UFCFGL-30-1** Programming in C++ **UFCF93-30-1** Computer and Network Systems **UFCFTK-30-1** Introduction to Databases **UFCFP4-30-1** Computer Crime and Digital Evidence	**Optional modules** No optional modules at level 1	**Interim Awards:** Certificate of Higher Education Forensic Computing and Security	**Compulsory modules** ITS60404 Computer Systems ITS60304 C Programming ITS60103 Systems Analysis and Design MTH60104 Mathematics for Computing 1 ITS60804 Introduction to Object-Oriented Programming MTH60503 Mathematics for Computing 2 ITS60504 Data Structures and Algorithms ITS60704 Fundamentals of Software Engineering COM60303 Communication Practice for IT Professionals UCM60503U2/ MPU3143/ MPU3123 Bahasa Melayu Komunikasi 2/ Tamadun Islam dan Tamadun Asia MPU3173/ MPU3113 Malaysian Studies 3 / Hubungan Etnik MPU3213 Personal Development/Bahasa Kebangsaan A	**Optional modules** Elective 1 (3 credits)	**Interim Award**
YEAR 1							

YEAR 2	**Compulsory modules** **UFCFWK-15-2** Operating systems **UFCFJ6-30-2** Security and Forensic Tools **UJUUKM-30-2** Law, Experts and Justice **UFCFLC-30-2** Secure Computer Networks	**Optional modules** UWE Students take 15 credits from: **UFCFVK-15-2** Internet of Things **UFCFDL-15-2** Secure Embedded Systems	**Interim Awards:** Diploma of Higher Education Forensic Computing and Security	**Compulsory modules** ITS61004 Object-Oriented Programming using Java ITS60604 Fundamentals of Database Systems ITS60203 Fundamentals of Data Communications ITS60603 Software Design ITS60703 Software Process ITS60503 Operating Systems ITS60903 Software Quality ITS61003Software Maintenance CSC60703 Project Management ITS61604 Distributed Application Development UCM60102U4 Community Service Initiative UCM60302U3 Malaysian Indigenous Cultures	**Optional modules** No optional modules at level 2	**Interim Award**
PLACEMENT YEAR *Students at UWE taking the 4-year degree programme will complete a 40 week work placement. UWE placement students complete UFCFE6-15-3 whilst on placement* *Students at TU do not have the 40 week work placement option but take the compulsory Industrial Training module* IND60206						
POTENTIAL TRANSFER POINT *(Point at which Year/Level 1 and 2 Learning Outcomes have been satisfied in both institutions)* UWE → TU / TU → UWE						

YEAR 3	**Compulsory modules** **UFCFRB-15-3** Security Management in Practice **UFCFC5-15-3** Forensic Computing Practice → **GRADUATION**	**Optional modules** UWE *students take 30 credits from:* **UFCFM5-30-3** Information Systems Dissertation **UFCFXK-30-3** Digital Systems Project *And 45 credits from:* **UFCFM6-15-3** Requirements Engineering **UFCFU3-15-3** Advanced Databases **UFCFT4-15-3** Cryptography **UFCF95-15-3** Entrepreneurial Skills **UFCFEL-15-3** Security Data Analytics and Visualisation **UFCFA5-15-3** Networks, Information and Society *and 15 credits from:* **UFCFE6-15-3** Professional Experience (studied during placement year) **UFCFB5-15-3** Ethical and Professional Issues **UFCFWJ-15-3** International Experience **UFCFVJ-15-3** Professional Development *TU students take the following modules:* **UFCFU3-15-3** Advanced Databases **UFCFT4-15-3** Cryptography **UFCFM6-15-3** Requirements Engineering	**Awards:** Target/highest title: BSc (Hons) Forensic Computing and Security(SW) BSc (Hons) Forensic Computing and Security (FT) *Credit requirements :*360 UWE credits at the appropriate levels	**Compulsory modules** PRJ61603 Software Engineering Project Part 1 PRJ60304 Software Engineering Project Part 2 ITS60403 Computing Theory ITS61703 Enterprise Computing CSC60303 Professional Computing Practice ITS61403 Artificial Intelligence ITS61504 Data Mining	**Optional modules** Elective 2, 3 and 4 CSC60104 E-Commerce CSC60204 Internet Fundamentals ITS61804 OO Programming using C++ STA60304 Probability and Statistical Analysis ITS62004 Advanced Database Systems ITS62104 Introduction to Information Retrieval ITS61704 Windows Applications using .NET Technologies ITS61404 Web Applications using .NET Technologies CSC60403 Technopreneurship CSC60103 Online Presence Management ACC60104 Introduction to Accounting OBM60104 Organizational Behaviour MGT60104 Introduction to Management MKT60104 Principles of Marketing	**Pre-requisite requirements** 72 TU credits at the appropriate level Awards: Target/highest title: Bachelor of Computer Science (Honours) (Computer Security and Forensics) *Credit requirements :* *120 TU credits at the appropriate levels*

Part 7: Entry Requirements

At UWE

The University's Standard Entry Requirements apply.

At TU

A Levels	: CDD or 14 points (A=10, B=8, C=6, D=4, E=2)
STPM	: B- C+ C+ or CGPA of 2.44 and above
CPU	: 66% Average (6 subjects)
SAM	: TER 60
UEC	: Aggregate 18 points (6 subjects)
TBF	: Successful Completion (50%)
IB	: 24 points (6 Subjects)
ADP	: 30 Credit Units (minimum CGPA 2.0)

English Language requirement

IELTS	: 6.0 overall
TOEFL	: 213 or better [Computer Based]
	: 550 or better [Paper Based]
A Levels	: Successful Completion
CPU	: 60% in English [4C, 3U or 4U]
SAM	: Successful Completion
TBF	: Successful Completion
UEC	: English B4 or better
MUET	: Band 4
Others	: Successful completion of Pre-University or Diploma which medium of instruction is solely English

Part 8: Reference Points and Benchmarks

Reference points/benchmarks (UWE)

This programme is consistent with the UWE 2020 strategy in that its focus on the practice of computer security and forensics aligns with our aim of producing practice-oriented graduates The partnership with Taylors helps to ensure that the programme has an inclusive and global reach. The programme will be accredited by the British Computer Society and is therefore recognized by the professional body. In addition, the programme adopts the general approach of the department of Computer Science and Creiative Technologies in including input from industry in terms both of visiting speakers and placement and work experience opportunities.

The QAA Computing and Law benchmark statements

The QAA Subject Benchmark Statements for Computing and for Law were published in 2007, and are applicable to this programme.

The programme clearly falls into the cognate area described by the Computing benchmark. Due to the nature of Forensic Computing practice, much of the computing material is of a technical, low-level nature, with relatively little computing theory. Thus, in terms of the benchmark's high-level characterisation of Computing, the emphasis of the programme is on

software, communication and interaction and practice, developed within the context of the specialised requirements of the programme. From the body of knowledge the following are considered essential to a study of Forensic Computing: Data Mining (in the context of forensic investigations); Computer Based Systems; Computer Networks; Data Structures and Algorithms, with emphasis on data structures; Distributed Computer Systems; Operating Systems; Programming Fundamentals; Security and Privacy; Web-based Computing.

The Computing Benchmark Statement also contains (section 5) statements of the standards expected of graduates at both modal and threshold levels. The team is of the view that graduates of the proposed programme will be able to meet the required standards.

The Law benchmark has been considered during the design process at the 'Law as Subsidiary' level of performance, which focuses on the development of legal skills related to some specific area (in this case Forensic Computing). Though the Statement is targeted at programmes with at least 180 credits of legal subjects, its expectations also apply to programmes such as Forensic Computing, where the legal aspects make up a relatively small, but very important component. No attempt has been made to include all aspects of law or to provide the foundation for a legal career as such – instead the most important points of law and court procedure are covered. The aim of the design team has been to provide sufficient legal knowledge to be aware of the rules and legal system pertaining to Forensic Computing: as suggested in the Benchmark, the relevant law is treated mainly as data from which legal conclusions or opinions can be derived. It is expected that student will be able to assimilate legal information from a variety of sources and apply the knowledge acquired to computer crime investigation and security analysis.

Reference points/benchmarks (TU)

Three key influences have informed the design of the international awards within the TU:

1. TU's mission and purpose statements
2. Statutory Requirements
3. International Standards

1. TU's mission and purpose statements

The TU's 10-year mission is to be a university of 20,000 students, renowned for its teaching excellence and the distinctive qualities of its graduates.

The TU's purpose is to educate the youth of the world to take their productive place as leaders in the global community.

The concrete indicators in TU's Mission Statement are substantiated by two existing Taylor's policies:

a. Taylor's Graduate Capabilities
This policy substantiates the following clause in our Mission Statement:
"….. the distinctive qualities of its graduates"

b. Taylor's University Teaching and Learning Framework
This policy substantiates the following clause in our Mission Statement
"…. Renowned for its teaching excellence"

The diagram below illustrates how the Taylor's Graduate Capabilities and Teaching & Learning Framework both support our Mission Statement, which in turn supports our

Part 8: Reference Points and Benchmarks

Purpose. All academic and research policies and procedures at Taylor's are to be in accordance with the focus provided by these policies.

Purpose	
Mission	
Graduate Capabilities	Teaching & Learning Framework

Taylor's Graduate Capabilities
The teaching and learning approach at Taylor's University is focused on developing the Taylor's Graduate Capabilities in its students, capabilities that encompass the knowledge, cognitive capabilities and soft skills of our graduates.

A Taylor's graduate has proven ability and is capable in the following areas

Discipline-specific knowledge
Sound understanding of foundational concepts and theories in subject area
Cognitive capabilities
Foundation and skills for lifelong learning
Learns autonomously
Able to acquire and manage information'
Ability to comprehend a wide variety of literature
Awareness of contemporary global issues
Problem solving skills
- Defines issues of problems well
- Analyses problems comprehensively
- Allies knowledge effectively and applies theory to practice
- Able to arrive at workable and effective solutions

Soft Skills
- Communication skills
  - Ability to speak and write well
  - Able to organize, synthesize and present information effectively
- Interpersonal skills
  - Understands team dynamics, power of teams and team work
  - Works with others in a team
  - Able to assume leadership in small and/or big groups
- Intrapersonal skills
  - Ability to manage time effectively

Understands the role of personal image and professionalism at work
- Works independently in context of tasks to be completed
- Cosmopolitan thinking and intercultural competence
  - Forms opinions and articulates views from a global perspective
  - Awareness of and sensitivity to cross-cultural differences
- Technology savvy
  - Executive keyboarding
  - Effective use of ICT and related technologies

The learning environment at Taylor's is further geared towards nurturing the Taylor's Core Values; the personal attributes of excellence, integrity, passion for work, interpersonal respect and care, openness in communication and a healthy balance between professional and personal life.

Through participation in various optional electives, including co-curricular activities, Taylor's students may also develop additional knowledge, cognitive capabilities and soft skills other than those listed. These, as well as the Taylor's graduate capabilities above, are recorded by

Part 8: Reference Points and Benchmarks

students in the form of individual student portfolios and verified by Taylor's University against the set of expectations for each subject, program and co-curricular activity.

2. Statutory Requirements

Degree qualifications offered by Malaysian private higher education institutions are required by the government to comply with the internationally benchmarked points of reference below, for the purpose of quality control. Summaries of each of the instruments' relevant requirements, contextualized for TU, are given in the Appendices to this document.

3. International Standards

For the purpose of international benchmarking, we integrate best practices in quality assurance in higher education from the regions from which Taylor's partner universities are drawn.

To implement the policy of compliance with the benchmark documents identified in this section, collating the information from all sources the scope of the TQM is categorized into 10 distinctive areas.

Scope		Identified from
1	Overview and goals	MQF, COPPA, European Standard
2	Curriculum	MQF, COPPA, COPIA, professional bodies requirements; European, Australian and US Standards
3	Intake	COPPA
4	Assessment	COPPA, European and Australian Standards
5	Faculty	COPPA, European, Australian and US Standards
6	Resources	COPPA, European, Australian and US Standards
7	Review	COPPA, COPIA, European, Australian and US Standards
8	Public Transparency	European Standard
9	External QA mechanisms	COPPA, COPIA, professional bodies requirements; European, Australian and US Standards
10	Improved mechanisms	COPPA, professional bodies requirements; European, Australian and US Standards

Appendices

Appendix No	Appendix Title
1	Summary of MQF requirements contextualized for TQM
2	Summary of COPPA requirements contextualized for TQM
3	Summary of COPIA requirements contextualized for TQM
4	Regulated professions in Malaysia

This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. More detailed information on the learning outcomes, content and teaching, learning and assessment methods of individual modules can be found in module specifications, available on the University's website.

Appendix 1

Summary of MQA[1] requirements contextualized for TQM

1. Identification of programme learning outcomes, developed by TU based on learning outcomes of particular fields of study, covering all components that form the programme leading to its qualification nomenclature[2].
2. Learning outcomes for each field of study must be developed by a committee comprising representatives from all relevant parties for that field of study.
3. Three levels of degrees are Bachelors, Masters and Doctoral. Additionally, TU offers Diploma and Foundation programmes. Each level's programme learning outcomes must show that its graduates are able to:

1. Demonstrate knowledge and comprehension on fundamental principles of a field of study, acquired from advanced text books. 2. Use the knowledge and comprehension through methods that indicate professionalism in employment 3. Argue and solve problems in their field of study 4. Show techniques and capabilities to search and use data to make decisions having considered social, scientific and relevant ethical issues 5. Communicate effectively and convey information, ideas, problems and solution to experts and non-experts 6. Apply team and interpersonal skills which are suitable to employment 7. Possess independent study skills to continue further study with a high degree of autonomy	Bachelors degree holders
1. Demonstrate continuing and additional knowledge and comprehension above that of the bachelors degree and have capabilities to develop or use ideas, usually in the context of research 2. Use the knowledge and comprehension to solve problems related to the field of study in new situations and multi-disciplinary contexts 3. Integrate knowledge and manage complex matters 4. Evaluate and make decisions in the situations without or with limited information by considering social responsibilities and related ethics 5. Deliver clearly the conclusion, knowledge and the rationale to experts and non-experts 6. Demonstrate study skills to continuously progress on their own with a high degree of autonomy to do so	Masters degree holders
1. Show a systematic comprehension and in depth understanding of a discipline and mastery of skills and research methods related to the field of study 2. Show capabilities to generate, design, implement and adopt the integral part of research process with scholarly strength 3. Contribute to the original research that has broadened the boundary of knowledge through an in depth dissertation, which has been presented and defended according to the international standards including writing in internationally refereed publications 4. Make critical analysis, evaluation and synthesis of new and complex ideas 5. Communicate with peers, scholarly community and society at large concerning the field of expertise 6. Promote the technological, social and cultural progress in a knowledge based society in the academic and professional contexts	Doctoral degree holders
1. Use knowledge, comprehension and practical skills at work	Diploma

[1] Malaysian Qualifications Agency (MQA). 2007. *Malaysian Qualifications Framework: Point of Reference and Joint Understanding of Higher Education Qualifications in Malaysia*. Petaling Jaya: MQA, Ministry of Higher Education Malaysia

[2] Table showing MQF Programme Nomenclature

Programme with:	Nomenclature	Example
One main area only	Named according to its area	Bachelor of Nursing
At least 25% specialization in main field	Specialisation indicated in brackets	Bachelor of Computer Science (Programming)
Fundamentals of two main fields in 50:50 percentage (double major)	Named using the connecter AND	Bachelor of Economics and Political Science
At least 25% component in other than main field of study (major-minor)	Named using WITH	Bachelor of Economics with Mathematics

2. Assess and decide, taking into account social, scientific and ethical issues with moderate autonomy 3. Be confident and entrepreneurial in pursuing their own careers 4. Be responsible members of society 5. Possess study skills in adapting to ideas, processes and new procedures for career development 6. Acquire team and interpersonal skills that are appropriate to employment 7. Communicate effectively and to transmit information, ideas, problems and resolutions cogently to experts and non-experts	holders
1. Use knowledge, comprehension and practical skills at work 2. Assess and decide, taking into account social, scientific and ethical issues with moderate autonomy 3. Be confident and entrepreneurial in pursuing their own careers 4. Be responsible members of society 5. Possess study skills in adapting to ideas, processes and new procedures for career development 6. Acquire team and interpersonal skills that are appropriate to employment 7. Communicate effectively and to transmit information, ideas, problems and resolutions cogently to experts and non-experts 8. Identify problems in their field of study	Advanced Diploma holders
1. Show knowledge and comprehension in the field of study that is continued from secondary school as indicated in advanced test books 2. Use knowledge and comprehension to identify and use data in response to concrete and complex problems 3. Communicate and clarify understanding and skills to peers and supervisors 4. Demonstrate skills for purposes of pursuing higher education	Foundation graduates

4. One credit is equal to 40 hours of notional students learning time. This includes lectures, tutorials, seminars, practicals, self-study, information retrieval, research, fieldwork, and preparing for as well as sitting for examinations. The minimum credit requirement for the different levels of study at university level are

Bachelors degree	120
Postgraduate certificate*	20
Postgraduate diploma*	30
Fully taught or partly taught Masters degree	40
Masters degree by research	No given credit value
Doctoral degree	No given credit value

* qualifications with competencies in Masters level but are more practitioner/professional than academic in nature

5. MQF emphasizes eight domains of learning outcomes. TU curricula are focused on developing the Taylor's Graduate Capabilities. TU's programme learning outcomes are therefore in harmony with the eight MQF areas, as shown in the table below.

MQF learning outcome domain	*TGC-focused TU curriculum learning outcomes*
1. Knowledge	Discipline-specific knowledge Sound understanding of foundational concepts and theories in subject area
2. Practical skills	Technology savvy Executive keyboarding Effective use of ICT and related technologies
3. Social skills and responsibilities	Foundations and skills for lifelong learning Awareness of contemporary global issues Cosmopolitan thinking and intercultural competence Awareness of and sensitivity to cross-cultural differences
4. Values, attitudes and professionalism	Intrapersonal skills Ability to manage time effectively Understands the role of personal image and professionalism at work The learning environment at Taylor's is further

	geared towards nurturing the Taylor's Core Values; the personal attributes of excellence, integrity, passion for work, interpersonal respect and care, openness in communication and a healthy balance between professional and personal life.
5. Communication, leadership and team skills	Communication skills Ability to speak and write well Able to organize, synthesize and present information effectively Interpersonal skills Understands team dynamics, power of teams and teamwork Works with others in a team Able to assume leadership in small and/or big groups
6. Problem solving and scientific skills	Problem-solving skills Defines issues or problems well Analyses problems comprehensively Applies knowledge effectively and applies theory to practice Able to arrive at workable and effective solutions
7. Information management and lifelong learning skills	Foundations and skills for lifelong learning Learns autonomously Able to acquire and manage information Ability to comprehend a wide variety of literature
8. Management and entrepreneurial skills	Interpersonal skills Understands team dynamics, power of teams and teamwork Works with others in a team Able to assume leadership in small and/or big groups Intrapersonal skills Works independently in context of tasks to be completed Cosmopolitan thinking and intercultural competence Forms opinions and articulates views from a global perspective Foundations and skills for lifelong learning Able to acquire and manage information

Appendix 2

Summary of COPPA[3] requirements contextualized for TQM

1. All qualifications offered in Malaysia must establish their level vis-à-vis the MQF.
2. Quality assurance is via accreditation of progammes and qualifications and audit of institutions. COPPA refers specifically to description, content and delivery of a particular programme.
3. Provisional accreditation means the programme has fulfilled minimum requirements to be offered and is seeking approval by MOHE. Full accreditation denotes that a programme has met all the criteria and standards set for that purpose and in compliance with the MQF. The quality evaluation process covers the nine areas listed below, each with its own quality standards and two levels of criteria: benchmarked standards and enhanced standards.
    1. Vision, mission , educational goals and learning outcomes;
    2. Curriculum design and delivery;
    3. Assessment of students;
    4. Student selection and support services;
    5. Academic staff;
    6. Educational resources;
    7. Programme monitoring and review;
    8. Leadership, governance and administration; and
    9. Continual quality improvement.
4. Evaluation for Provisional Accreditation is conducted by MQA's Panel of Assessors (POA) who assess the nine areas above and may conduct an optional site visit. Their report is used by the Higher Education Provider (in our case TU) to seek approval from the MOHE to offer the programme, and, on obtaining it, to commence the programme.
5. Evaluation for Full Accreditation is by MQA's POA through external and independent assessment of the Programme Information and Self-Review Report submitted by TU, and includes a site visit to validate and verify the information provided. 3-yearly Programme Maintenance Audits ensure the maintenance and enhancement of programmes that have been accredited.
6. Programmes are accredited when they are fully compliant with MQA's benchmarked standards. Enhanced standards are provided for continual improvement. (COPPA, p12-37). The documentation required is described in COPPA, p39ff and relevant process flowcharts are in COPPA p134-140.

[3] Malaysian Qualifications Agency (MQA). 2008. *Code of Practice for Programme Accrediation.* Petaling Jaya: MQA, Ministry of Higher Education Malaysia

Appendix 3

Summary of COPIA[4] requirements contextualized for TQM

1. COPIA utilises the same nine areas of evaluation for quality assurance as COPPA, but from the perspective of institutional policies, processes and practices across the institution. Its benchmarked and enhanced standards are given in COPIA p8-27.
2. Institutions are required to conduct their own internal quality audit, known as self-review. Guidelines for this are given in COPIA p29-44.
3. The MQA will conduct an external institutional audit. Guidelines are in COPIA p45-54.
4. All relevant process flowcharts are in COPIA p80-84.

[4] Malaysian Qualifications Agency (MQA). 2008. *Code of Practice for Institutional Audit.* Petaling Jaya: MQA, Ministry of Higher Education Malaysia

Appendix 4

Regulated Professions in Malaysia

The professions below are regulated by Acts of Parliament (more professions may be added in future Acts). Degree programmes offered by TU in any of these fields must therefore be in compliance with the requirements of the respective licencing bodies if graduates aspire to gain employment within Malaysia in their field of study.

Profession	Licensing Body	Relevant Parliamentary Act
Accountant	Malaysian Institute of Accountants	Accountants Act 1967
Architect	Board of Architects Malaysia	Architect Act 1967
Building Draughtsman	Board of Architects Malaysia	Architect Act 1967
Chemist	Institut Kimia Malaysia	Chemists Act 1975
Engineer	Board of Engineers Malaysia	Registration of Engineers Act 1967
Doctor	Malaysian Medical Council	Medical Act 1971
Dentist	Malaysian Dental Council	Dental Act 1971
Interior Designer	Board of Architects Malaysia	Architect Act 1967 (Amendment 2007)
Land Surveyor	Land Surveyors Board	Licensed Surveyors Act 1958
Lawyer	Malaysian Bar Council	Legal Profession Act 1976
Nurse	Malaysian Nursing Board	Nurses Act, 1950
Optician or Optometrist	Malaysian Optical Council	Optical Act 1991
Pharmacist	Pharmacy Board of Malaysia	Registration of Pharmacists Act 1951
Professional Counsellor	Lembaga Kaunselor Malaysia	Counsellors Act 1998
Quantity Surveyor	Board of Quantity Surveyors Malaysia	Registration of Quantity Surveyors Ac 1967
Teacher	Malaysian Ministry of Education	Education Act 1996
Town Planner	Board of Town Planners, Malaysia	Town Planners Act 1995
Valuer, Appraiser or Estate Agent	Board of Valuers, Appraisers and Estate Agents Malaysia	Valuers, Appraisers and Estate Agent Act 1981
Veterinarian	Malaysian Veterinary Council	Veterinary Surgeons Act 1974

Appendix 5: Structure and Mapping diagram:

BSc (Hons) Forensic Computing and Security / Bachelor of Computer Science (Computer Security and Forensics)

N.B. This table shows UWE modules and programme structure and indicates the mapping of TU modules to UWE modules. It does not show all TU modules (e.g. MQA compulsory modules).

Year 1

UWE	**UFCFGL-30-1** Programming in C++	**UFCF93-30-1** Computer and Network Systems	**UFCFTK-30-1** Introduction to Databases	**UFCFP4-30-1** Computer Crime and Digital Evidence
TU	ITS60804 Introduction to OO Programming	ITS60404 Computer Systems	ITS60504 Data Structures and Algorithms	ITS60904 Computer Crime and Digital Evidence
	ITS60704 Fundamentals of Software Engineering	MTH60104 Mathematics for Computing 1	ITS60103 Systems Analysis and Design	COM60303 Communication Practice for IT Professionals
		ITS60304 C Programming	TU Elective Slot 1 (currently only CSC60403 Technopreneurship offered)	

Year 2

UWE	**UFCFWK-15-2** Operating systems	**UFCFJ6-30-2** Security and Forensic Tools	**UJUUKM-30-2** Law, Experts and Justice	**UFCFLC-30-2** Secure Computer Networks
TU	ITS61604 Distributed Applications Development	ITS61204 Computer Security and Forensics Tools	ITS60403 Computing Theory	ITS60503 Operating Systems
	ITS61004 OO Programming using Java	ITS60604 Fundamentals of Database Systems	ITS60303 User Interface Programming and Graphics	ITS60203 Fundamentals of Data Communications
			ITS60603 Software Design	ITS60803 Computer and Network Security

Year 3

UWE	**UFCfFXK-30-3** Digital Systems Project OR **UFCFM5-30-3** IS Dissertation	**UFCFRB-15-3** Security Management in Practice	**UFCFC5-15-3** Forensic Computing Practice	**Option slot 1** **UWE** *home students take 30 credits from:* **UFCFM6-15-3** Requirements Engineering **UFCFU3-15-3** Advanced Databases **UFCFT4-15-3** Cryptography (only available as Option 1 for UWE home students) **UFCF95-15-3** Entrepreneurial Skills **UFCFEL-15-3** Security Data Analytics and Visualisation **UFCFA5-15-3** Networks, Information and Society ***TU*** *Transfer students take:* **UFCFM6-15-3** Requirements Engineering **UFCFU3-15-3** Advanced Databases	**Option slot 2** ***UWE*** *home students take 15 credits from:* **UFCFE6-15-3** Professional Experience (studied during placement year) OR **UFCFB5-15-3** Ethical and Professional Issues OR **UFCFWJ-15-3** International Experience OR **UFCFVJ-15-3** Professional Development ***TU*** *transfer students take:* **UFCFT4-15-3** Cryptography (only available as Option 2 for TU transfer students)
TU	PRJ61503 Final Year Project Part 1	ITS61303 Security Management in Practice	ITS61503 Forensic Computing Practice	TU Elective Slots 2, 3, and 4 Students studying at TU choose three electives in Year 3 from the following list:	
	PRJ60204 Final Year Project Part 2 ITS61604 Distributed Application Development	ITS61103 Computer Intrusion Detection ITS61403 Artificial Intelligence		STA60304 Probability and Statistical Analysis ITS61603 Advanced Systems Administration ITS61804 OOP using C++ ITS61504 Data Mining ITS62004 Advanced Database Systems ITS61704 Windows Applications using .Net Technologies ITS61404 Web Applications using .NET Technologies ITS61304 UNIX Programming ITS61703 Enterprise Computing CSC60103 Online Presence Management ITS61104 Web Systems and Technologies	

Appendix 6: Learning Outcomes: BSc (Hons) Forensic Computing andSecurity Dual Degree (Faculty of Engineering and Technology)

NB: Option / Elective slots: Elective 1: currently only Technopreneurship is offered in this slot and this module is assumed in the mappings below. UWE and Elective 2-4 are not shown as the modules occupying these slots vary and hence it is not possible to rely on specific learning outcomes.

LEARNING OUTCOMES		Compulsory Modules Level 1										Compulsory Modules Level 2										Compulsory Modules Level 3					
SECTION A: KNOWLEDGE AND UNDERSTANDING	UWE modules	UFCFGL-30-1		UFCF93-30-1			UFCFTK-30-1			UFCFP4-30-1		UFCFWK-15-2		UFCFJ6-30-2		UJUUKM-30-2			UFCFLC-30-2			UFCFXK-30-3 Or UFCFM5-30-3		UFCFRB-15-3			UFCFC5-15-3
	TU modules	ITS60804	ITS60704	ITS60404	MTH60104	ITS60304	ITS60504	ITS60103	Elective 1	ITS60904	COM60303	ITS61604	ITS61004	ITS61204	ITS60604	ITS60403	ITS60303	ITS60603	ITS60503	ITS60203	ITS60803	PRJ61503	PRJ60204	ITS61303	ITS61103	ITS61403	ITS61503
Computer systems and networks.		✓		✓			✓			✓		✓		✓					✓			✓		✓			✓
		✓	✓	✓		✓		✓		✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
Information, data and its representation.		✓					✓			✓		✓		✓					✓			✓		✓			✓
		✓			✓	✓	✓			✓		✓	✓	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
National legal systems and court procedures.										✓						✓						?					
										✓												?	?				
Law pertaining to computer crime and digital evidence.										✓				✓		✓						?		✓			✓
									✓	✓	✓			✓								?	?	✓	✓		✓
Security management							✓			✓		✓		✓					✓			?		✓			
								✓		✓		✓		✓					✓	✓	✓	?	?	✓	✓		
Tools and techniques for investigating computer crime.										✓				✓								?					✓
										✓				✓								?	?				✓

LEARNING OUTCOMES		Compulsory Modules Level 1										Compulsory Modules Level 2									Compulsory Modules Level 3					
SECTION B:	**UWE modules**	UFCFGL-30-1		UFCF93-30-1			UFCFTK-30-1			UFCFP4-30-1		UFCFWK-15-2		UFCFJ6-30-2		UJUUKM-30-2			UFCFLC-30-2			UFCFXK-30-3 Or UFCFM5-30-3		UFCFRB-15-3			UFCFC5-15-3
INTELLECTUAL SKILLS	**TU modules**	ITS60804	ITS60704	ITS60404	MTH60104	ITS60304	ITS60504	ITS60103	Elective 1	ITS60904	COM60303	ITS61604	ITS61004	ITS61204	ITS60604	ITS60403	ITS60303	ITS60603	ITS60503	ITS60203	ITS60803	PRJ61503	PRJ60204	ITS61303	ITS61103	ITS61403	ITS61503
Critical Thinking		✓		✓			✓			✓		✓		✓		✓			✓			✓		✓			✓
		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Analysis		✓		✓			✓			✓		✓		✓					✓			✓		✓			✓
		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
Synthesis of different types of Information		✓		✓			✓			✓		✓		✓		✓			✓			✓		✓			✓
		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
Evaluation		✓		✓			✓			✓		✓		✓		✓			✓			✓		✓			✓
		✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Problem Solving		✓		✓			✓			✓		✓		✓					✓			✓		✓			✓
		✓				✓	✓		✓	✓		✓	✓	✓	✓		✓				✓	✓	✓	✓	✓	✓	✓	✓
Appreciate problem contexts		✓		✓			✓			✓		✓		✓		✓			✓			✓		✓			✓
		✓	✓			✓	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
Balance conflicting objectives		✓		✓			✓			✓		✓		✓					✓			✓		✓			✓
		✓	✓			✓	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓

LEARNING OUTCOMES		Compulsory Modules Level 1										Compulsory Modules Level 2										Compulsory Modules Level 3					
SECTION C: **SUBJECT PROFESSIONAL PRACTICAL SKILLS**	**UWE modules**	UFCFGL-30-1		UFCF93-30-1			UFCFTK-30-1			UFCFP4-30-1		UFCFWK-15-2		UFCFJ6-30-2		UJUUKM-30-2			UFCFLC-30-2			UFCFXK-30-3 Or UFCFM5-30-3		UFCFRB-15-3			UFCFC5-15-3
	TU modules	ITS60804	ITS60704	ITS60404	MTH60104	ITS60304	ITS60504	ITS60103	Elective 1	ITS60904	COM60303	ITS61604	ITS61004	ITS61204	ITS60604	ITS60403	ITS60303	ITS60603	ITS60503	ITS60203	ITS60803	PRJ61503	PRJ60204	ITS61303	ITS61103	ITS61403	ITS61503
Understand a variety of computer systems		✓		✓			✓			✓		✓		✓					✓			✓		✓			✓
		✓	✓	✓		✓	✓	✓		✓		✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Understand professional and legal obligations										✓				✓		✓			✓			✓		✓			✓
									✓	✓	✓			✓							✓	✓	✓	✓	✓		✓
Be able to assess a computer crime scene.										✓				✓													✓
										✓				✓											✓		✓
Describe key security mechanisms.										✓				✓					✓					✓			
										✓		✓		✓					✓	✓	✓			✓	✓		
Use software libraries and toolkits.		✓		✓			✓			✓		✓		✓					✓			✓		✓			✓
		✓				✓	✓			✓		✓	✓	✓	✓		✓			✓	✓	✓	✓	✓	✓	✓	✓
Employ a range of tools and notations.		✓		✓			✓			✓		✓		✓					✓			✓		✓			✓
		✓	✓	✓	✓	✓	✓	✓		✓		✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓
Know the limits of their knowledge.		✓		✓			✓			✓		✓		✓		✓			✓			✓		✓			✓
		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

LEARNING OUTCOMES		Compulsory Modules Level 1										Compulsory Modules Level 2										Compulsory Modules Level 3					
SECTION D: **TRANSFERABLE SKILLS AND OTHER ATTRIBUTES:**	**UWE modules**	UFCFGL-30-1		UFCF93-30-1			UFCFTK-30-1			UFCFP4-30-1		UFCFWK-15-2		UFCFJ6-30-2		UJUUKM-30-2			UFCFLC-30-2			UFCFXK-30-3 Or UFCFM5-30-3		UFCFRB-15-3			UFCFC5-15-3
	TU modules	ITS60804	ITS60704	ITS60404	MTH60104	ITS60304	ITS60504	ITS60103	Elective 1	ITS60904	COM60303	ITS61604	ITS61004	ITS61204	ITS60604	ITS60403	ITS60303	ITS60603	ITS60503	ITS60203	ITS60803	PRJ61503	PRJ60204	ITS61303	ITS61103	ITS61403	ITS61503
Communication skills							✓			✓				✓		✓						✓		✓			✓
			✓					✓	✓	✓	✓			✓								✓	✓	✓			✓
Self-management skills		✓		✓			✓			✓		✓		✓		✓			✓			✓		✓			✓
		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IT Skills in Context		✓		✓			✓			✓		✓		✓					✓			✓		✓			✓
		✓	✓	✓		✓	✓	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Problem formulation		✓		✓			✓			✓		✓		✓					✓			✓		✓			✓
		✓	✓	✓		✓	✓	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
Progression to independent learning		✓		✓			✓			✓		✓		✓		✓			✓			✓		✓			✓
		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
Comprehension of professional literature		✓		✓			✓			✓		✓		✓		✓			✓			✓		✓			✓
		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Working with Others							✓			✓				✓										✓			✓
			✓					✓	✓	✓	✓			✓			✓							✓			✓