



Application to NZQA

**Approval of a Qualification and Programme
and
Accreditation to Deliver:**

**OP7091 Bachelor of
Information Technology**

April 2016

CONTENTS

1.0	Title, Aims, Learning Outcomes and Coherence	6
1.1	Full Title	6
1.2	Aims	6
1.3	Learning Outcomes	6
1.4	Coherence	14
2.0	Delivery and Learning Materials	17
2.1	Modes of Delivery and Delivery Site	17
2.2	Facilitated Learning	17
2.3	Progress through the programme	19
2.4	Project	19
2.5	Emotional and/or Physical Risk	20
3.0	Assessment	21
3.1	Assessment Philosophy and Methodology	21
3.2	Assessment Standards	23
3.3	Assessment in Te Reo Māori	23
4.0	Moderation	23
4.1	Pre-assessment Moderation	23
4.2	Post-assessment Moderation	24
4.3	External Moderators	24
5.0	Acceptability of the Programme	24
5.1	Strategic Importance	24
5.2	Consultation with Stakeholders	25
5.3	Identification of stakeholder issues/addressing interests of stakeholders	27
5.5	Acceptability to Māori and Pasifika	27
6.0	Regulations	28
6.1	Programme Specific Regulations	28
7.0	Resources	28
7.1	Academic Staff	28
7.2	Teaching Facilities and Physical Resources	31
7.3	Support Staff	32
7.4	Student Guidance and Support	32
7.5	Financial Resourcing for the Programme	33
8.0	Evaluation and Review	34
8.1	Programme Evaluation and Review	34
8.2	Course Evaluation and Review	34
8.4	Changes to the Approved Programme	35
8.5	Monitoring Arrangements	35
9.0	Research	36
9.1	Commitment to Research	36
9.2	Current and Planned Research Activity	45
9.3	Student Research Components	45
9.4	Organisational Support for Research	45

Appendices

Appendix	Title	Page
A	Qualifications Details Form	
B	Course Descriptors	
C	Programme Regulations	
D	Industry Demand	
E	Consultation	
F	Programme Design and Development Document	
G	Project Memorandum of Agreement	
H	Expected Tutor Curriculum Vitae	
I	Contract for Services	
J	Open Polytechnic Māori Strategy	

Appendix	Title	Page
K	Research Plan	
L	2012-2015 Open Polytechnic Research Strategy	
M	Open Polytechnic Ethical Approval Guidelines	
N	ICT Trends Article	
O	Draft Tutor Induction Plan	
P	Information Technology Advisory Group	
Q	Degree Leader Position Description	
R	IITP Code of Professional Conduct	
S	Draft BIT Online Orientation Course Outline	
T	Open Polytechnic Research Report 2015	
U	Open Polytechnic Annual Report 2014	

The Open Polytechnic Bachelor of Information Technology

Background and Rationale

This document sets out the academic requirements for the Open Polytechnic's new Bachelor of Information Technology degree.

Due to its expertise in national, distance, open and flexible learning, the Open Polytechnic remains uniquely placed to offer a Bachelor of Information Technology degree in New Zealand to its distinctive constituency of learners, the majority of whom require flexibility and convenience in their study because of other demands in their lives or because local study options are unavailable.

In addition to improving personal skill levels and promotion possibilities for individuals, the provision of a flexible and accessible qualification in information technology is essential for the economic prosperity of the nation as a whole.

The Bachelor of Information Technology meets the needs of potential students seeking a career in information technology, as well as those currently in information technology positions but with little formal training and no qualifications. Many information technology personnel in both small and large organisations who have risen to middle, and even senior management "through the ranks" will already possess many skills and a great deal of technical knowledge. The flexible nature of the Bachelor in Information Technology allows for recognition of these skills, and consequently a shorter path to the award of the degree, which is important, not only from a personal perspective, but also in helping address government initiatives to increase the number of people who have higher level qualifications in the information technology workforce.

The Open Polytechnic:

- is internationally recognised in the open and distance learning field, with well-established systems, processes and pedagogy for designing and delivering quality-assured programmes from foundation to diploma and degree level
- uses open distance learning (ODL) methods founded on a learner-centred, resource-based approach. Course materials are produced by expert teams of educational designers working closely with the Delivery directorate.
- uses online, interactive teaching techniques in combination with high quality, comprehensive learner-centred course materials to ensure quality and consistency in delivery. This is a proven and pedagogically sound model, as the student engages with the material first, reflects, and then seeks individualised support when required (by email, telephone or in online discussion fora). The process supports the independent learning and critical reflection demanded and valued in degree level programmes
- offers an accessible and responsive Library and Learning Centre support service – including a highly valued national library service online via the web, free phone, and a suite of practical software tools provided free to our students (Office 365)
- has significant and long standing experience with delivery at degree level. The Open Polytechnic successfully delivers eight degree programmes: Bachelor of Business, Bachelor of Applied Science, Bachelor of Arts, Bachelor of Engineering Technology, Bachelor of Teaching (Early Childhood Education), Bachelor of Social Work, Bachelor of Applied Management and the current Bachelor of Information Technology
- is committed to providing programmes of study that allow students to staircase from certificate and diploma programmes to undergraduate and postgraduate qualifications. The student base at Open Polytechnic is largely restricted to part-time study as a consequence

of their other commitments (in 2014 69% of Open Polytechnic students were in employment). Such students often begin study on lower level qualifications and as their study and work experience expands need the opportunity to progress seamlessly to higher level programmes. This requirement strongly influences the Polytechnic Programme Portfolio.

The Open Polytechnic Bachelor of Information Technology:

- the Bachelor of Information Technology programme will be supported by one Degree Leader, one Student Learner Supporter, and a complement of approximately seven adjunct tutors. Information technology staffing will be increased to support enrolments in the degree
- is expected to meet the requirements of students to access a distance-learning undergraduate degree and prepares students for on-going study. Note, we are currently seeking confirmation from other institutions of Open Polytechnic graduates' eligibility to apply for entry to their postgraduate programmes
- complements the existing portfolio, by providing a flexible and practical approach to information technology studies using a selection of core and elective courses strongly demanded by industry. Graduates will not be restricted to a particular industry or sector but will be able to apply their skills across a variety of fields as their careers progress
- provides a mix of appropriate courses that have been shown to be effective and well received by industry advisory groups as evidenced in survey consultation feedback (see Appendix E)
- will produce graduates that have practised application of their learning in a real-life situation through a significant project of their own negotiation
- aligns with government initiatives to increase the proportion of the workforce holding qualifications at Level 4 and above by providing a flexible Level 7 qualification and by recognising workplace acquired skills for those already in, or aspiring to, information technology positions
- provides generic information technology skills to support the mobile nature of information technology workers which in turn allows for better dissemination of ideas and innovation in New Zealand.

1.0 Title, Aims, Learning Outcomes and Coherence

1.1 Full Title

Bachelor of Information Technology

Abbreviation: BIT

Credit Value: 360

Level: 7

EFTS Ratio: 3.0

NZSCED 029999

1.2 Aims

The aim of the Bachelor of Information Technology degree is to equip students with a recognised, flexible and applied information technology qualification using a selection of practical courses strongly aligned with industry needs to ensure work-ready graduates equipped with skills and knowledge required for a range of IT-related positions or for further study at postgraduate level.

1.3 Learning Outcomes

1.3.1 Graduate Profile

Graduates of the Bachelor of Information Technology will have developed an effective level of knowledge and understanding of the application of Information Technology in the workplace.

They will have the ability to:

- Critically evaluate key information technology concepts and techniques to help resolve information technology-related problems in a range of contexts
- Manage information technology projects, demonstrating an effective level of proficiency in achieving the specified requirements
- Plan, develop, implement, and manage information technology systems to meet specific market or organisational needs
- Identify workplace requirements by selecting and implementing an appropriate software application-based information technology solution
- Apply the knowledge and skills based on the nominated electives of software development and web development, to address workplace needs
- Identify the ethical, social and legal issues associated with the development and application of information technology systems in the workplace
- Adapt resourcefully in a rapidly changing information technology environment and to operate knowledgeably, productively and professionally in producing the specified outcomes
- Communicate information, arguments, ideas and issues clearly and effectively as appropriate in information technology and business settings
- Demonstrate the personal, interpersonal and professional skills necessary for self-management as well as engendering co-operation in a team environment

1.3.2 Employment Pathways

The programme has been designed for a wide range of learners. If currently employed, there are valuable opportunities to incorporate work-related learning that may build on an existing role or equip for new responsibilities.

Graduates of the Bachelor of Information Technology may apply their skills to become a confident user and manager of information technologies; to administer and manage database systems; or to develop new software and web solutions to meet specific market or organisational needs.

Graduates of the Bachelor of Information Technology may find employment in a wide range of fields, such as, public and private sectors, technology, finance, government, health, education, business, gaming and commerce. Graduates may be employed as specialists in digital technologies, software development, software engineering, or web technologies.

1.3.3 Education Pathways

Students successfully completing the Bachelor of Information Technology will be equipped to undertake further study and progress to more specialist postgraduate courses that align to their interests and/or employment experience.

Students may cross-credit some work or study experience (for example a relevant diploma qualification) into the Bachelor of Information Technology. The credit available will be determined on a case by case basis.

1.3.4 Programme Structure

The following diagram illustrates the Bachelor of Information Technology programme structure:

Note: The programme is composed of 20-credit courses at level's 5, 6 and 7 with a compulsory 40 credit capstone IT project at level 7.

The Bachelor of Information Technology provides a mix of courses which have been shown to be effective and well received by industry advisory groups (see Appendix E).



Students must complete 120 credits at each level.

Elective courses contribute skills, knowledge and/or attributes relevant to the graduate profile.

The following table lists the programme structure:

Level	Credits	Name	Type	Prerequisite
5	20	BIT501 Business Concepts and Communications	Compulsory	
5	20	BIT502 Fundamentals of Programming	Compulsory	
5	20	BIT503 Fundamentals of Information Technology	Compulsory	
5	20	BIT504 Programming I	Compulsory	BIT502 Fundamentals of Programming
5	20	BIT505 Introduction to Software Development	Compulsory	
5	20	BIT506 Mathematics for IT	Compulsory	
6	20	BIT601 System Analysis and Design	Compulsory	
6	20	BIT602 Project Management	Compulsory	
6	20	BIT603 Programming II	Elective	BIT504 Programming I
6	20	BIT604 Database	Compulsory	
6	20	BIT605 Data Structures and Algorithms	Elective	
6	20	BIT606 Testing	Elective	
6	20	BIT607 Web Development	Elective	
6	20	BIT608 Web Programming	Elective	
7	40	BIT701 IT Project	Compulsory	BIT602 Project Management
7	20	BIT702 Interaction Design	Elective	
7	20	BIT703 Web Technologies	Elective	
7	20	BIT704 Advanced Database	Elective	BIT604 Database
7	20	BIT705 Current and Emerging Technologies	Elective	
7	20	BIT706 Programming III	Elective	BIT603 Programming II
7	20	BIT707 Software Engineering	Elective	BIT603 Programming II

1.3.5 Course Outcomes

The following table provides the overview and learning outcomes of the courses contributing to the Bachelor of Information Technology. Detailed Courses Descriptors are included in Appendix B.

Course	Learning Outcomes - Students who successfully complete this course will be able to:
BIT501 Business Concepts and Communications This course provides students with the knowledge and skills required in a business context to enhance their effectiveness as an emerging Information Technology professional.	<ol style="list-style-type: none"> 1. Describe business concepts in relation to organisational functions, structures and cultural context. 2. Explain the impact and role IT plays within an organisation 3. Apply effective written communication skills including information design, research literacy and referencing, report and technical writing. 4. Communicate effectively through oral presentations supported by visual aids, applying effective personal and interpersonal skills. 5. Describe ethical and socially responsible work practices, legislation, industry codes of practice and conduct, and apply to a given scenario 6. Explain the relevance of the Treaty of Waitangi and demonstrate an awareness of diversity, equity and multicultural issues relevant to the IT workplace 7. Manage self and contribute actively to a team, applying principles of customer service and relationship management
BIT502 Fundamentals of Programming This course provides students with the knowledge and skills required to design and implement software applications.	<ol style="list-style-type: none"> 1. Solve problems and make effective decisions utilising the principles of professional practice, independently and in a team 2. Create simple applications using fundamental programming constructs and principles 3. Describe and apply the principles of interaction design and human computer interaction (HCI) employing current and emerging technologies 4. Identify and use a range of software tools, such as text editors and/or integrated development environments (IDEs) 5. Describe and apply the principles of software implementation, including user testing, training and deployment across multiple platforms 6. Demonstrate an awareness of procedural and object oriented programming methodologies 7. Plan, design and develop a simple database application following application development life cycles
BIT503 Fundamentals of Information Technology This course will provide students with the necessary knowledge and skills to provide technical support and manage hardware and software resources to meet organisational requirements.	<ol style="list-style-type: none"> 1. Explain the processes associated with information management, including data storage and retrieval, and apply to the IT workplace using ethical principles 2. Describe the concepts of user experience and usability in IT and provide user training and support for end users in a professional manner. 3. Apply data and information security concepts, tools and techniques 4. Apply fundamental networking and internet concepts to a given scenario 5. Apply the processes and procedures necessary for hardware and software diagnostic testing, maintenance, technical and customer support, and installation and configuration of systems and business applications. 6. Create a simple website using basic principles of web design, interactivity, and multi-media design
BIT504 Programming I This course provides students with the knowledge and skills required to write and maintain programmes.	<ol style="list-style-type: none"> 1. Develop programmes using object oriented and procedural coding methodologies 2. Construct software with complex, multi-element architectures and abstract data types (ADTs) 3. Write code, following design patterns and software development standards and apply source and version control 4. Demonstrate the ability to migrate to new languages, tools and systems from development to a testing environment 5. Identify and apply program quality assurance and maintenance techniques including functional, usability and standards compliance testing.
BIT505 Introduction to Software Development This course provides students with the knowledge and skills required to implement software development.	<ol style="list-style-type: none"> 1. Identify a range of problems originating in a business context 2. Explain the development life cycles and the migration of changes within the business environment 3. Perform a systems analysis, applying critical thinking, using logic and reasoning, to identify alternative solutions to problems 4. Apply data modelling techniques appropriate to the system 5. Document each phase of the software development process using appropriate technical reports 6. Determine the actions required to improve, or correct systems performance 7. Discuss testing and quality control methodologies

Course	Learning Outcomes - Students who successfully complete this course will be able to:
BIT506 Mathematics for IT This course provides students with the mathematical knowledge and skills needed to support the essential elements of information technology.	<ol style="list-style-type: none"> 1. Demonstrate and apply basic mathematical concepts covering a range of categories including; algebra, trigonometry, geometry, and differentiation and integration 2. Solve for a range of mathematical problems utilising the appropriate strategies 3. Demonstrate competency in the use of a general purpose computer algebra system (CAS) to resolve a range of mathematical problems 4. Utilise logical and mathematical reasoning to develop sound arguments
BIT601 Systems Analysis and Design This course provides the student with the knowledge and skills required to analyse requirements, and to design and document software solutions for a range of problems in an organisational context.	<ol style="list-style-type: none"> 1. Apply appropriate business process modelling tools to analyse and document business processes 2. Employ basic software project planning techniques employing software estimation and metrics 3. Demonstrate user experience (Ux) design principles and processes 4. Demonstrate the application of agile and structured systems development methodologies 5. Create accurate, and clear, technical and user documentation
BIT602 Project Management This course provides the student with the knowledge and skills of project management theory and practice as it applied to the IT industry.	<ol style="list-style-type: none"> 1. Apply the nine knowledge areas of Project Management to an IT related project 2. Discuss the dynamics of project teams including co-located and virtual teams 3. Develop a project proposal and plan for an IT related project 4. Demonstrate the practical application of a project management tool
BIT603 Programming II Pre-requisite: BIT504 Programming I This course provides the student with the knowledge and skills required to develop applications using contemporary programming languages.	<ol style="list-style-type: none"> 1. Demonstrate the effective use of multiple contemporary programming languages and integrated development environments (IDEs) 2. Describe and apply the principles and techniques required for modular software development using object oriented concepts and core programming techniques 3. Demonstrate effective use of commonly used built-in data structures 4. Develop a comprehensive solution to a given problem, which includes designing, debugging, testing and maintenance techniques 5. Describe optimisation concepts and techniques and the application of source and version control as a critical function of project management
BIT604 Database This course provides the student with the knowledge and skills required to create, implement and operate database systems. The student will be capable of configuring, maintaining, and monitoring the performance of databases.	<ol style="list-style-type: none"> 1. Perform a requirements analysis and demonstrate core business modelling skills 2. Describe the theory of database design, schema and data dictionaries, and the considerations required for multi-user access 3. Demonstrate data modelling strategies, both relational and object 4. Apply normalisation, and data and system redundancy 5. Implement structured, semi-structured and unstructured data and complex data types for a realistic business situation 6. Create a database and utilise data validation techniques, perform complex queries and generate reports, and apply security measures.
BIT605 Data Structure and Algorithms This course provides the student with the knowledge and skills required to solve crucial business problems by selecting and using the appropriate data structures, algorithms, and techniques for program development.	<ol style="list-style-type: none"> 1. Describe fundamental data structures used for storing and accessing information and the operation of abstract data types/elements 2. Investigate the performance of selected searching algorithms; sequential and binary 3. Describe various classes of algorithms and their functions and applications 4. Describe the application of recursive mathematical functions used for data structures; factorial, Fibonacci, Euclid's GCD (greatest common denominator), and Fourier Transform 5. Explain the sorting process in terms of presentation of data extracted from databases; bubble, selection, insertion sorts, and heap sorts 6. Analyse graphical representations where selected data structure determines efficiency of algorithm performance 7. Design and implement algorithms and data structures

Course	Learning Outcomes - Students who successfully complete this course will be able to:
BIT606 Testing This course provides the student with the knowledge and skills required to implement a range of software quality assurance techniques to verify correctness of systems. The student will design and perform a variety of testing techniques that incorporate both the phased and agile approaches.	<ol style="list-style-type: none"> 1. Compare a selection of testing methodologies including phased (Waterfall) and agile testing methods 2. Design a variety of tests including unit and system tests, usability testing, and user acceptance tests, incorporating a range of testing techniques 3. Perform testing on a range of platforms that involves multiple devices and environments 4. Execute tests using manual and automated software testing, and document results 5. Demonstrate debugging processes, which includes debugging utilities, managing bug reports and issue tracking 6. Implement performance and standards compliance testing
BIT607 Web Development This course provides the student with the knowledge and skills required to determine client requirements, and to prepare and present solutions.	<ol style="list-style-type: none"> 1. Analyse and document requirements using business process modelling tools and perform a stakeholder interaction and feasibility study 2. Design and implement a web application focusing on responsive design, user experience (Ux) and on the usability and accessibility of the application 3. Compare and contrast the application of static and dynamic web pages and their associated programming languages 4. Describe applicable standards and protocols, and define the security issues associated with Web applications 5. Implement, evaluate and use a range of design tools and techniques required for the development of an application including multiple plug-in solutions 6. Supplement the functionality of the solution using plug-in modules to address security and compatibility issues 7. Present a range of business package solutions
BIT608 Web Programming This course provides the student with the knowledge and skills required to develop client-side and server-side web-based applications utilising contemporary software development standards.	<ol style="list-style-type: none"> 1. Use a design brief, based on analysis requirements and a feasibility study, for developing client side and server side web content 2. Develop server-side web scripting using a range of contemporary scripting languages that interacts with the client-side 3. Utilise applicable standards and protocols, and address the security issues associated with web development 4. Analyse website performance and identify and correct problems uncovered by testing and/ or user feedback 5. 6. Publish the tested web solution and create new or update existing web system design and workflow documents
BIT701 IT Project (40 Credits) Pre-requisite: BIT602 Project Management This capstone course enables the student to apply advanced information technology principles and techniques to produce a solution to an industry based project within their specialist field.	<ol style="list-style-type: none"> 1. Plan and develop an original proposal for an information technology project 2. Critically analyse, scope and refine project specifications 3. Produce an information technology-based solution to an industry based project 4. Manage project timelines, goals and milestones 5. Develop a substantial report recording experiences, findings and outcomes 6. Demonstrate independent learning and comprehensive reflective practice and apply professional work ethics.
BIT702 Interaction Design This course provides the student with an introduction to the theory underlying interaction design and products.	<ol style="list-style-type: none"> 1. Explain the essentials of interaction design (ID) and ID terminology 2. Describe the different techniques for involving users in the design of interactive products 3. Explain the importance of iteration, evaluation and prototyping in interaction design 4. Evaluate interactive products and examine a range of practical issues commonly involved in their development 5. Produce a low-fidelity prototype for an interactive product, based upon a simple list of interactive design principles
BIT703 Web Technologies This course will provide the student with the knowledge and skills required to design and develop contemporary data-driven web applications.	<ol style="list-style-type: none"> 1. Design and create static and dynamic web content using contemporary web technologies and standards 2. Install and configure software used to support web environments 3. Develop a web application demonstrating best practice and using current standards in client-side and server-side scripting and web interface design 4. Select the foremost technologies for the job using current network and security technologies 5. Utilise a content management system to allow a user to publish, edit and manage web content from a central interface

Course	Learning Outcomes - Students who successfully complete this course will be able to:
BIT704 Advanced Database Pre-requisite: BIT604 Database This course provides students with an in-depth knowledge of relational databases and the skills required for developing a database to meet specified requirements.	6. Analyse web application performance on a variety of platforms to test behaviour of scripts and functional issues resolved 1. Apply advanced Structured Query Language (SQL) to create a database solution that suits given information requirements 2. Apply procedural SQL to create a database solution 3. Discuss and apply data management principles to resolve issues in a multi-user database environment 4. Analyse the influence of database organisation on database performance issues 5. Evaluate components and different types of distributed database management systems 6. Discuss data administration and database administration issues
BIT705 Current and Emerging Technologies This course enables the student to evaluate and make informed recommendations for the application of current and emerging digital technologies in a business context.	1. Categorise a selection of current and emerging technologies in accordance with a range of business suitability/criteria and/or applications and develop hypotheses regarding future developments 2. Evaluate current and emerging technologies in terms of ethical considerations, environmental impact and sustainability issues 3. Research and undertake a critical analysis of a selected current and/or emerging technology 4. Make informed recommendations, which includes a SWOT analysis, about the application of the selected technology in a business context 5. Publish/summarise their findings in a report that meets professional reporting criteria/to a publishable standard
BIT706 Programming III Pre-requisite: BIT603 Programming II This course enables the student to apply advanced programming techniques to develop efficient applications that meet real world business requirements.	1. Analyse the requirements and select an appropriate design, based on the use of a contemporary object oriented programming language 2. Design and develop a structured, modular and efficient prototype that meets the design criteria 3. Create a graphical user interface (GUI) that meets user requirements 4. Execute debugging and testing techniques, according to a plan, and demonstrate correctness using final module testing 5. Implement source and version control processes exemplifying best practice 6. Produce relevant internal and external documentation
BIT707 Software Engineering Pre-requisite: BIT603 Programming II This course provides the student with an understanding of software engineering and design with an emphasis on the development of software systems to meet specified requirements.	1. Develop and implement a software system based on the software development life cycle 2. Explain the quality issues involved in software products and processes 3. Analyse, design, implement, and test a system or change request according to set of requirements 4. Utilise computer aided software tools, such as Java IDE and a UML modelling tool for analysis and design 5. Document the resulting software development process

1.4 Coherence

The coherency of the Bachelor of Information Technology degree is ensured by a mapping from the Graduate Profile to courses:

Graduate Profile Component				Learning Outcomes																	
Graduates of the BIT will have developed an effective level of knowledge and understanding of the application of Information Technology in the workplace and will have the ability to:	BIT501 Business Concepts and Communications	BIT502 Fundamentals of Programming	BIT503 Fundamentals of Information	BIT504 Programming I	BIT505 Introduction to Software	BIT506 Mathematics for IT	BIT601 System Analysis and Design	BIT602 Project Management	BIT603 Programming II	BIT604 Database	BIT605 Data Structures &	BIT606 Testing	BIT607 Development	BIT608 Web Programming	BIT701 IT Project	BIT702 Interaction Design	BIT703 Web Technologies	BIT704 Advanced Database	BIT705 Current and Emerging	BIT706 Programming II	BIT707 Software Engineering
Critically evaluate key information technology concepts and techniques to help resolve information technology-related problems in a range of contexts	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Manage information technology projects, demonstrating an effective level of proficiency in achieving the specified requirements			✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Plan, develop, implement and manage information technology systems to meet specific market or organisational needs		✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Identify workplace requirements by selecting and implementing an appropriate software application-based information technology solution		✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Apply the knowledge and skills, based on the nominated electives of software development and web development, to address industry specific needs		✓		✓	✓				✓				✓	✓			✓			✓	✓

Identify the ethical, social and legal issues associated with the development and application of information technology systems in the workplace	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
--	---	---	---	---	---	--	--	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Graduate Profile Component		Learning Outcomes																			
Graduates of the BIT will have developed an effective level of knowledge and understanding of the application of Information Technology in the workplace and will have the ability to:	BIT501 Business Concepts and	BIT502 Fundamentals of Programming	BIT503 Fundamentals of Information	BIT504 Programming I	BIT505 Introduction to Software	BIT506 Mathematics for IT	BIT601 System Analysis and Design	BIT602 Project Management	BIT603 Programming II	BIT604 Database	BIT605 Data Structures &	BIT606 Testing	BIT607 Development	BIT608 Web Programming	BIT701 IT Project	BIT702 Interaction Design	BIT703 Web Technologies	BIT704 Advanced Database	BIT705 Current and Emerging	BIT706 Programming II	BIT707 Software Engineering
Adapt resourcefully in a rapidly changing information technology environment and operate knowledgeably, productively and professionally in producing the specified outcomes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Communicate information, arguments, ideas and issues clearly and effectively as appropriate in information technology and business settings	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Demonstrate the interpersonal capabilities necessary for self-management as well as engendering co-operation in a team environment	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

2.0 Delivery and Learning Materials

2.1 Modes of Delivery and Delivery Site

The Bachelor of Information Technology will be delivered mainly as a web-based distance programme using online materials. Learning materials will include:

- online teaching and learning text content with formative and summative assessment opportunities;
- multimedia content and/or web delivery; and
- online programme page support, course overviews, additional learning material and relevant audio-visual content delivered using Online Campus.
- specialised software tools.

Practicals

The key practical experience in the degree is the compulsory 40-credit IT Project course at Level 7. See Appendix B for more information.

2.2 Facilitated Learning

Equity

The nature of distance delivery is non-discriminatory. The Bachelor of Information Technology's courses are developed by Open Polytechnic. The Open Polytechnic's design and development processes of moderation, editing and stakeholder feedback during course development guards against the use of gender or culturally insensitive content.

Students with special needs are invited to disclose any disability at enrolment and wherever possible provision is made to meet these needs.

Access

Learning material is designed to support learning in the students' own environment.

Flexibility, and learner choice and control

Flexibility is inherent in the structure of the Bachelor of Information Technology. The compulsory courses enable students to develop a broad base in information technology skills. The elective courses provide the opportunity to advance or broaden knowledge in a particular area of interest.

The ability of the student to access this learning using distance delivery also provides additional flexibility.

Teaching and learning approach

The Open Polytechnic is committed to its educational mission to develop engaged achievers. The teaching and learning approach reflects the philosophy of learning through doing/applying theory to a practical situation. The programme provides a blend of theoretical knowledge and applied situations with scenarios that are likely to relate to the student's environment.

The teaching takes a problem-based approach to develop critical thinking and analysis. These skills are progressively developed at each learning level (see section 2.3 Progress through the

programme). The development of skills in research and information retrieval is complementary to the problem-based teaching approach and is embedded in all Open Polytechnic learning materials and assessment of the courses. This approach provides students with the essential skills for success in information technology positions and equips them for life-long learning and postgraduate study.

The Bachelor of Information Technology emphasises skills and knowledge application, culminating in a 40-credit project providing the opportunity to practise and integrate skills acquired throughout the programme.

Recognition of Prior Learning (RPL)

The Bachelor of Information Technology has been developed to meet the needs of both new learners and learners that already have significant industry experience (see Academic Entry (Admission) Requirements in Appendix C – Programme Regulations). Fundamental to this feature is the need to recognise the skills that learners bring to the learning experience. Each student will have a different portfolio of knowledge and skills and the match with the learning outcomes of the programme will need to be assessed on a case by case basis. Credit that can be awarded for existing knowledge and skills will be discussed initially with the Degree Leader prior to enrolment and formally considered through the Open Polytechnic's RPL processes.

Cross credit may be awarded to a maximum of 120 credits at each of levels 5 and 6 (240 credits in total).

In some instances, admission with advanced standing into year three of the qualification may be awarded, for example, where students hold a Diploma in Information Technology Level 6 in a particular field. Such arrangements will normally take the form of a negotiated arrangement on a case by case basis.

Learner focus and support

The Bachelor of Information Technology programme promotes pro-active management of learning by the students themselves, thus developing the skills and knowledge of independent lifelong learning.

All students receive the following core services:

- Instructionally designed learning materials, based on a recognised instructional design principles model, that guide students to solve problems, to explore, analyse and critique. All new courses and programmes pass through a rigorous approval process. This involves relevant external stakeholders and peers from other institutions. Existing courses are reviewed every three years (or more frequently if feedback indicates a necessity) to ensure that both industry and student needs are being met.
- Freephone (New Zealand only) and email access to personal support from a tutor. The tutor's role is to facilitate and enhance the learning process built into the learning resources. The student's role is to manage their learning and elicit assistance and support according to their needs.
- An Online Campus providing Internet access to the library and other learning resources.
- Access to monitored online study forums.
- Access to library and student support services via digital access, freephone, email or fax.
- Ability to submit assignments electronically.
- Fair and timely assessment of progress and performance.

- Access to a dedicated Student Learner Supporter and Student Advisor.
- A dedicated Library and Learning Centre that provides additional study support and develops specific strategies.
- A call centre/call answering service to solve administrative issues or make contact with the tutor or Degree Leader as appropriate.
- Free software tools (Office 365).

2.3 Progress through the programme

The Programme Structure ensures that students have the knowledge and skills to succeed in higher level courses in the subject area. Pre-requisite courses are set out in section 1.3.4.

All Level 5 courses should be completed before embarking on Level 6 and subsequently Level 7 courses. The progression through the levels of learning enhances student success by building competence in the academic skills that are inherent in the course design.

60 credits of elective courses at Level 7 must be completed before a student is permitted to undertake the project.

Learning materials are designed to embed the following academic competencies:

	Learning Level 5	Learning Level 6	Learning Level 7
Competency	<ul style="list-style-type: none"> • Demonstrates knowledge and comprehension of basic theoretical concepts covered in course materials including; describing, discussing and explaining theories, concepts and ideas, and identifying important features. • Articulates a viewpoint and explains any conclusions drawn. • Beginning to link ideas from different sources and contexts. • Demonstrates basic reflection and an ability to see the relevance of theory to their professional practice. 	<ul style="list-style-type: none"> • Demonstrates the ability to make strong and clear links between theory and practice. • Discussions are underpinned by relevant theory and literature. • Reflection on practice is specific and focused. • There is an awareness of impact beyond the immediate consequence. • Demonstrates an awareness of more than one perspective when justifying conclusions drawn/position taken. 	<ul style="list-style-type: none"> • Demonstrates the ability to analyse information, discussing its implications from a range of perspectives. • Potential consequences at wider levels than the here-and-now are identified. • Overall conclusions drawn are coherent and justified. • Reflection is deep, multi-layered and complex.

2.4 Project

The project is a compulsory course for all students in the Bachelor of Information Technology. It is a high-level learning experience that occurs in a professional context. The project provides students with the opportunity to gain experiential skills not achievable through theoretical study alone, or obtainable in their current/previous work environment. For students with extensive work experience it will provide an opportunity to develop an area of specialisation in information technology potentially of benefit to their workplace.

The student develops a project proposal recommending an information technology solution to a technological problem they have identified. A final report on the recommendation will include details of the technical solution proposed, such as the software used and the resulting code developed (see Appendix B – Course Descriptors for more information). Note: Full or partial implementation of the proposed solution is not necessarily a requirement for this 400-hour project.

A tutor will advise the student on project selection and will be their academic supervisor. The student will be responsible for negotiating an agreement for a proposed project with a host organisation employer, based on the problem identified and the potential for consolidating and extending their knowledge and skills. It is expected that the student will also identify a workplace support person who will commit to the sponsorship role for the duration of the project.

The student develops a project proposal which is negotiated with the tutor and the host organisation. A three-way Memorandum of Agreement details the roles and responsibilities of the parties, see Appendix G. The course culminates in a final report which includes an evaluation of the project. Students keep a journal throughout the course and are assessed on their ability to reflect on their learning and how this has been applied and adapted to meet the disparate challenges of the workplace situation. This journal will also include a log of weekly tasks, work hours, issues and solutions.

As the skills that are assessed during the project depend on the nature of the project or workplace situation, assessment and moderation of the project is included in assessment and moderation procedures for the course.

2.5 Emotional and/or Physical Risk

Any emotional and/or physical risks are identified during the review of learning materials by instructional designers. The instructional designers work closely with the Degree Leader and technical editors as required to ensure that emotional risk is sensitively handled and physical risk is identified, mitigated and responsibilities allocated.

Any emotional and/or physical risk identified as inherent in the project will be detailed in the three-way Memorandum of Agreement between the student, workplace support person and the tutor. Mitigations and responsibilities will be clearly assigned.

During the project, the student will be covered by the policies and procedures of the host organisation, including health and safety obligations. Organisations are responsible for all required insurances for students accepted by the organisation.

Open Polytechnic holds Personal Liability and Professional Indemnity insurance coverage with our insurer Aon for student learning situations. Aon will check for effective coverage using the following scenarios and Memorandum of Agreement documentation:

- A student could inadvertently take a system down
- A student could accidentally corrupt a working system
- A student could provide unauthorised parties with access to strategic information.

3.0 Assessment

3.1 Assessment Philosophy and Methodology

Assessment will be demonstrably aligned to the learning outcomes of the course and graduate profile for the programme.

Each assessment will be developed by Open Polytechnic.

Each course is independently assessed. Each assessment item is linked to the learning outcomes of the course.

Care is taken to avoid over assessment while at the same time ensuring that there is sufficient evidence to determine whether the student has achieved the learning outcomes. Assessments may integrate the learning outcomes to reduce the assessment loading and to reflect the inter-related nature of the material.

Assessment is designed and sequenced in such a way that students have opportunities to improve their performance during their study. Consequently, the assessment philosophy is one of assessment *for* learning as well as assessment *of* learning. Students on the Bachelor of Information Technology are required to obtain a minimum of 50% in each assessment to be awarded the credits for a course. Effective feedback is essential to this approach. The seven principles of good feedback¹ guide the assessment for learning philosophy:

- clarification of what good performance is (goals, criteria, expected standards);
- facilitation of the development of self-assessment and reflection in learning;
- delivery of high quality information that helps learners self-correct;
- encouragement of teacher and learner dialogue around learning;
- encouragement of positive motivational beliefs and self-esteem;
- provision of opportunities to close the gap between current and desired performance; and
- using feedback from learners to improve teaching and assessment.

Assessment and moderation procedures at Open Polytechnic are underpinned by the following principles (taken from the Polytechnic's Assessment and Moderation Policy v1):

- **Fairness**
Assessment activities will be equitable, and recognise cultural diversity. Collaborative assessment activities will be designed to ensure that all students have an equal chance of success.
- **Flexibility**
Assessment procedures will be flexible (e.g. through RPL, accelerated assessment) so that students are not required to repeat learning already achieved.
- **Integration**
Where possible, summative assessment will be designed to allow students to demonstrate performance across a range of learning outcomes and assessment standards.

¹ Nicol and McFarlane-Dick, 2006

- **Integrity**
Assessment procedures will ensure that only the original work of the student being assessed is considered when determining the assessment outcome.
- **Peer assessment**
Where appropriate, assessment activities will provide opportunities for students to engage in peer assessment.
- **Reliability**
Assessment processes will ensure the consistency of assessment decisions, regardless of who marks the assessment.
- **Standards-based**
Assessment activities will measure students' performance against approved standards of achievement as expressed in the learning outcomes of each course.
- **Sufficiency**
Assessment processes will ensure sufficient evidence is gained to determine whether the student has achieved the required learning outcomes, without over-assessment.
- **Treaty of Waitangi**
Students will be encouraged to undertake course assessments in the language (English or Māori) that will provide the best chance of success.

Formative assessment tasks are included in the learning material for each course. Formative assessment may be submitted to a course tutor for feedback and advice. Formative assessment includes the following learning support activities:

- self-assessment questions and exercises, included in the teaching texts
- programming tasks, computer-based investigations and open-ended project work
- feedback and guidance from a tutor and revision
- e-mail and online forums
- study and project guides.

Summative assessment includes the following activities:

- assignments
- progress and project reports.

The assessment regimes including pass requirements and resubmission opportunities for the compulsory courses and electives are included in Appendix B - Course Descriptors.

There are two study durations in the programme – most courses are 20 credits and run over a single 16-week trimester, however there is one compulsory 40 credit course which will run over two trimesters (32 weeks). A student academic record is issued by Academic Registry on completion of the enrolment period.

Assessments are scheduled regularly during the 16- and 32-week period for the 20-credit courses and 40-credit course respectively. The assessment plan acknowledges the gradual increase in the levels of complexity within each of the courses associated with the programme and is intentionally designed to incorporate repetition to ensure the progressive consolidation of student knowledge and to enhance student technical proficiency.

All of the courses have three assignments and the assessment plan for each course is outlined in the Course Descriptors – See Appendix B.

3.2 Assessment Standards

No assessment standards are included in this programme.

3.3 Assessment in Te Reo Māori

A student may apply to the Academic Registrar to undertake their summative assessments (both in-course and examination) in Te Reo Māori providing that the student applies, in writing, to the Academic Registrar within 10 working days following confirmation of enrolment.

4.0 Moderation

Moderation is a key method for assuring quality and consistency of standards of assessment. The moderation procedures used at the Open Polytechnic apply to the preparation of assessment activities and the decisions made by assessors of student's work. Moderation is viewed as a range of activities to ensure the uniform interpretation and application of standards as these relate to any assessment.

4.1 Pre-assessment Moderation

In accordance with Open Polytechnic Assessment and Moderation Policy, all new summative assessment tasks will be moderated prior to use.

Moderation is required for all new summative assessments and major redevelopments prior to first use. This can be internal or external.

4.2 Post-assessment Moderation

Post-assessment moderation will ensure that assessment decisions are the appropriate standard, consistent, and in line with the assessment criteria. It is required for all courses on an appropriate sampling basis on a three-year cycle, planned for as part of the programmes annual moderation plan.

4.3 External Moderation

External moderation serves to provide an external perspective, or to determine compatibility with other providers, and is performed by a subject expert from another education provider (or industry/profession) who has expertise in assessment.

Course	Scheduled moderation
BIT501 Business Concepts and Communications	2017
BIT502 Fundamentals of Programming	2017
BIT503 Fundamentals of Information Technology	2017
BIT504 Programming I	2017
BIT505 Introduction to Software Development	2017
BIT506 Mathematics for IT	2017
BIT601 System Analysis and Design	2018
BIT602 Project Management	2018
BIT603 Programming II	2018
BIT604 Database	2018
BIT605 Data Structures and Algorithms	2018
BIT606 Testing	2018
BIT607 Web Development	2018
BIT608 Web Programming	2018
BIT701 IT Project	2019
BIT702 Interaction Design	2019
BIT703 Web Technologies	2019
BIT704 Advanced Database	2019
BIT705 Current and Emerging Technologies	2019
BIT706 Programming III	2019
BIT707 Software Engineering	2019

5.0 Acceptability of the Programme

All Open Polytechnic programmes and qualifications must demonstrate that they are acceptable to relevant academic, employer, industry, professional and other relevant bodies or communities. The following sections outline the strategic importance of the Bachelor of Information technology and the stakeholder consultation to date and planned.

5.1 Strategic Importance

The business challenge for Open Polytechnic is to construct and maintain a portfolio that attracts learners, has sustainable EFTS and leads to high levels of student success and high levels of education performance. Open Polytechnic recognises the need and opportunity to offer a dedicated information technology degree programme to provide additional and flexible options for learners from an industry sector which has a significant volume, but which provides limited distance and applied learning opportunities at this level.

Open Polytechnic has completed a quality review of the current Bachelor of Information Technology programme's alignment with the information technology sector and has identified some areas that can be strengthened, specifically to provide for the acquisition of a high level of specialist software development and web development skills which are in high demand by the IT industry (see Appendices D and O).

The following table lists the Open Polytechnic's estimated EFTS for the degree:

Year	Estimated EFTS
2017	60
2018	100
2019	130
2020	150
2021	150

5.2 Consultation with Stakeholders

The Open Polytechnic has and will engage with key stakeholders using a range of approaches or 'levels'. The following table describes the consultation process. This consultation is underway and also on-going:

Stage	Audience	Description
1	Information technology industry and academic representatives	Confirmation of approach to degree Emailed to socialise the Graduate Profile and Learning Outcomes with key academic and industry representatives, and action feedback as appropriate.
2	Information Technology Advisory Group	Confirmation of approach to degree Emailed to socialise the Graduate Profile and Learning Outcomes with the Information Technology Advisory Group. See above for the BIT Advisory Group membership.
3	Māori and Pasifika	Confirmation of approach to degree Emailed to socialise the Graduate Profile and Learning Outcomes.
4	Ongoing advisory	Confirmation of approach to degree The Bachelor of Information Technology will continue to be supported by the Information Technology Advisory Group.

The following table lists the external/internal stakeholders consulted regarding the change:

Area	Name	Role	Organisation
Industry	Mark Oliver	Industry Representative Committee member	CITRENZ Board
Industry	Richard Rayner	CEO	Vo2
Industry	Colin Jackson	Principal	Jackson Strategy
Industry	Andy Prow	CEO	Aura Information Security
Industry	Rick Marshall	-	MBIE
Industry	Owen Mooney	Solution Architect	Mighty River
Industry	Evan Blackman	Education Sector Manager	Microsoft NZ Limited
Industry	Gabriel Smith	Solutions Architect	MBIE
Industry	Peter Haigh	Lead Technology Strategist	Microsoft NZ Limited
Industry	Michael Elrick	Team Manager	Spark New Zealand
Industry	Don Robertson	CIO	Healthcare of New Zealand
Industry	Jason Ryan	Strategy and Relations Manager	Catalyst
Industry	Adrian Gregory	General Manager	Grow Wellington
Industry	Jason Trower	Managing Director	CodeBlue
Industry	Joy Pawley	Recruitment	Enlighten Designs
Industry	Judson Croft	IT Manager/Recruiter	Gen-i
Industry	Caryl Carson	Business Solutions Manager	Livestock Improvement Corporation
Industry	Murray Wills	Director	Maxsys Ltd
Industry	Mary Campbell-Cree	Director	MCC
Industry	David Hallett	Director	Need a Nerd
Industry	Alvin Naidu	Recruitment Consultant	Orion Health
Industry	Steve Zawodny	Senior Consultant	Talent International
Industry	Mike Lamb	CIO	WEL Networks
Industry	Richard Templar	General Manager, Research and Technical Service	Callaghan Innovation
Industry	Andrew Harris	Acting for Executive Director Allied Health, Scientific and Technical	Wairarapa and Hutt Valley DHB
Industry	Carrie Henderson	Acting for Executive Director Allied Health, Scientific and Technical	Hutt Valley DHB
Industry	Michael Hadley	Director	Avonmore Tertiary Institute
Academic	Krassie Petrova	Postgraduate Programme Leader	AUT
BIT Advisory Group Member/Industry	Kerry Glynn	President	GlobalBake
BIT Advisory Group Member/Industry	John Ascroft	CIO	Jade Software
BIT Advisory Group Member/Academic	Chris Mayhew	Programme Leader	MIT
BIT Advisory Group Member/Academic	Sally Jo Cunningham	Associate Professor Computer science/	University of Waikato
BIT Advisory Group Member/Academic	Val Hooper	Associate Professor, School of Information Management	Victoria University of Wellington
BIT Advisory Group Member/Māori and Pasifika	Trevor Wilson	CEO	Pouwhakahaere
BIT Advisory Group Member/Māori and Pasifika	Puloto Selio Solomon	Chief Executive	Martin Hautus Institute
Ex BIT Student/Māori and Pasifika	Karaitiana Wilson	Technology Solutions Advisor	Open Polytechnic
Ex BIT Student	Caroline Eade	Administration Officer	Open Polytechnic

5.3 Identification of stakeholder issues/addressing interests of stakeholders

The following table provides the consultation questions and a summary of the positive responses received:

No	Consultation Question	Positive Response
1	Has the market need for web developers and software developers been appropriately identified?	93%
2	Will graduates from this proposed programme help address the identified market need for IT professionals?	93%
3	Is the programme structure and content relevant and appropriate?	93%
4	Do you support OP continuing to offer this programme with the proposed changes?	93%
5	Do you support OP continuing to offer a general information technology degree over a degree with majors?	83%

See Appendix E for detailed feedback provided during the consultation process and the related Open Polytechnic response.

5.5 Acceptability to Māori and Pasifika

The proposed Bachelor of Information Technology has been presented to Māori and Pasifika stakeholders as part of the consultation process, see Trevor Wilson, Selio Solomon, and Karaitiana Wilson's consultation responses in Appendix E for more information.

6.0 Regulations

6.1 Programme Specific Regulations

All academic issues in relation to this programme will be subject to Open Polytechnic regulations and programme/course specific regulations.

These regulations constitute part of Schedule 5 of The Open Polytechnic of New Zealand Academic Statute and should be read in conjunction with it.

See Appendix C for Programme Specific Regulations.

7.0 Resources

7.1 Academic Staff

The Bachelor of Information Technology will be delivered from the information technology area within the Learning Delivery directorate. The information technology area has nineteen permanent academic staff members, two programme delivery managers and a complement of approximately seven adjunct members. Information technology staffing will be increased to support enrolments in the degree.

Academic Leadership for the programme will be through the Academic Specialist, the Manager: Learning Delivery and a specifically appointed Degree Leader. The Degree Leader has oversight of programme coherence and cohesion, and provides academic leadership for the day-to-day implementation of the programme.

The degree is a vocational degree. Information technology skills tend to date quickly. The courses which make up the programme require an extensive range of specialist skills to be staffed. Open Polytechnic is approaching this by engaging a pool of experienced and appropriately skilled tutors. The staffing ratio is expected to be 1 tutor to 35 equivalent full time students (EFTS) as for equivalent Open Polytechnic degree courses.

This approach will enable the Open Polytechnic to have tutors who have a 'foot in the industry' enabling the Open Polytechnic to be flexible, responsive and to have a close connection to industry. The person specification for these tutors will include attributes from the Open Polytechnic position description for Degree Leaders (see Appendix Q).

These tutors will be orientated (see Appendix O) and supported by the Learning Delivery directorate and will access all of Open Polytechnic's support and quality systems including policy, procedures and student systems.

It is expected that potential tutors will be identified via Open Polytechnic, CITRENZ networks or tertiary organisations' networks.

Open Polytechnic have already identified some potential tutors to illustrate the expected calibre of the incumbents in this role. Curriculum Vitae received to date are attached in Appendix H.

These off-campus tutors will operate under a Contract for Services (see Appendix I).

Tutors are allocated to courses on the basis of their qualifications, specialist knowledge and interests. Responsibilities of the tutor include:

- keeping track of student's work and keeping in contact with them, more frequently with those whose work is falling behind;
- establishing why students do not start/complete the course and in the light of student reasons suggest possible solutions to the Degree Leader;
- writing assessments;
- managing the online campus, preparing regular newsletters and managing queries;

- checking that the supplementary course material is kept up to date and accurate by informing the Degree Leader of any changes required; and
- checking that the Degree Leader is kept abreast of developments in the relevant subject areas and suggest possible developments in allied areas.

Academic Staff: Bachelor of Information Technology		
Programme Delivery Manager	Michelle Ronduen	<u>Qualifications</u> B SC, MSci (Computer Science)
Degree Leader	Janak Adhikari	<u>Qualifications</u> MSci (Cyber Law and Information Security), BIT
Academic Specialist	Dr Sarah Snell	<u>Qualifications</u> ScEdD, MMgt, PGBusAdmin, BAppIS, Teachers Diploma in IT

Expected Teaching Staff	Qualifications
Dr Elozor Shneider	<p>Previous experience includes the following roles:</p> <ul style="list-style-type: none"> • Head of School (and previously Centre Manager School of Information Science and Technology) at the Open Polytechnic, providing academic guidance, leadership and management for academic staff. • Discipline Leader in Information Systems and Technology at the Open Polytechnic responsible for leading and coordinating the overall development and delivery of IS and T programmes. • Senior Lecturer at The Open Polytechnic, teaching Database Management Systems, Systems Design and Development, Programming with Visual Basic, Web Programming, Systems Development Project, Advanced Information Systems in a distance education environment using modern communication technologies to create an efficient teacher-student and student-student interaction. • Associate Professor, Department of General Physics, Rostov State University • Delivery Analyst at Wordsworth (IS) Limited <p>Qualifications include:</p> <ul style="list-style-type: none"> • Bachelor of Science (Honors) in Radiophysics and Electronics, Rostov State University, Russia, Rostov-on-Don, 1971 • Ph.D. in Physics and Mathematics, Rostov State University, Rostov-on-Don, 1980 • Certificate of Proficiency in Computer Systems, Faculty of Teacher Training, Rostov State University, 1986 • Diploma in Business Programming, Interim Technology Training Institute, Wellington, 1999
Dr Diab Abuaiadah	<p>Previous experience includes the following roles:</p> <ul style="list-style-type: none"> • Principle Academic staff member, Waikato Institute of Technology • Senior Lecturer, Taylors University, Malaysia • Private project, Lecturer (casual), Market microstructure research and Software Consultancy <p>Qualifications include:</p> <ul style="list-style-type: none"> • Ph.D., 1996, Department of Computer Science, The University of Sydney, Australia. • M.Sc., 1991, Department of Computer Science, Ben Gurion University, Israel. • B.Sc., 1988, Department of Computer Science, The Hebrew University, Israel.

Bruce Ferguson	<p>Previous experience includes the following roles:</p> <ul style="list-style-type: none"> • Team Manager, Waikato Institute of Technology, Hamilton, New Zealand • Programme Manager, Waikato Institute of Technology • Principal Lecturer, Waikato Institute of Technology <p>Qualifications include:</p> <ul style="list-style-type: none"> • 1999 Bachelor of Information Technology • 2001 Certificate in Adult Learning and Teaching • 2004 Postgraduate Diploma in Computing
John Jamieson	<p>Previous experience includes the following roles:</p> <ul style="list-style-type: none"> • Programme co-ordinator – Diploma Hardware and Operating Systems and Senior Lecturer, Eastern Institute of Technology • Lecturer, Tswane University of Technology • Department of State Expenditure – Central Computing Services, Chief Network Controller <p>Qualifications include:</p> <ul style="list-style-type: none"> • Graduating early 2016 with Masters • Post Graduate Diploma in Science: Information Systems (Massey 2009) • Tech Information Technology (Intl. 1998) • National Diploma Information Technology (Intl. 1995)
Dr Reza Rafeh	<p>Previous experience includes the following roles:</p> <ul style="list-style-type: none"> • Academic Staff Member, Centre for Business, Information Technology and Enterprise • Visiting Researcher, School of Computer and Mathematics, AUT University • Deputy Vice-Chancellor Academic, Arak University • Dean of Faculty of Engineering, Arak University • Deputy Dean of Faculty of Engineering, Arak University • Head of Computer Engineering Department, Arak University • Senior Lecturer, Arak University <p>Qualifications include:</p> <ul style="list-style-type: none"> • Doctor of Philosophy in Computer Science, Monash University, Melbourne, Australia • Master of Science in Software Engineering, Sharif University of Technology, Tehran, Iran • Bachelor of Science in Software Engineering
Dr Sakthithasan Sripirakas (Sri)	<p>Previous experience includes the following roles:</p> <ul style="list-style-type: none"> • Tutor and Teaching Assistant, AUT University • Data Scientist Intern, Datamine Limited • Research Assistant, AUT University • Software Engineer, MillenniumIT London Stock Exchange <p>Qualifications include:</p> <ul style="list-style-type: none"> • Doctor of Philosophy in Computer Science, AUT University • BSc in Computer Science University of Colombo, Sri Lanka
Dr Steve Corich	<p>Previous experience includes the following roles:</p> <ul style="list-style-type: none"> • Head of School Computing, Eastern Institute of Technology Hawke's Bay • Full time lecturer Wellington Polytechnic • Assistant Director (Policy and Planning), Royal New Zealand Navy <p>Qualifications include:</p> <ul style="list-style-type: none"> • 2011 Doctor of Philosophy (Information Systems), Massey University, Palmerston North

	<ul style="list-style-type: none"> • 2000 Master of Business Studies (Communications Management), Massey University, Palmerston North • 1989 New Zealand Certificate in Data Processing, Wellington Polytechnic • 1975 Diploma of Teaching, Secondary Teachers College, Christchurch • 1973 Bachelor of Science, Massey University, Palmerston North
Dr Guinevere Nalder	<p>Previous experience includes the following roles:</p> <ul style="list-style-type: none"> • Adjunct Tutor Civil Engineering, Open Polytechnic of New Zealand • Tutor for Civil Engineering papers for Bachelor of Technology Degree, Lecturer in Mathematics for Engineering, Auckland University of Technology • Senior Water Resources Engineer, Harrison Grierson Consultants Ltd • Tutor in Mathematics and Engineering, Waikato Institute of Technology <p>Qualifications include:</p> <ul style="list-style-type: none"> • PhD Civil Engineering Open Channel Flow • MPhil Earth Science – Hydrology • MSc Hydraulics, Hydrology and Coastal Dynamics • BSc (Econ) Economics • BSc Civil Engineering

Quality

Teaching in a distance organisation is a broader concept than the traditional lecturer dominated approach. A major component of the teaching is incorporated in quality course materials. They are specially designed to take the place of lectures, seminars and some library-based study which students would undertake at conventional universities and polytechnics.

A team of people oversee the course at the Open Polytechnic. The team includes: writer(s); content and technical reviewers; tutor(s); library staff; a bi-cultural reviewer as required and an educational designer.

7.2 Teaching Facilities and Physical Resources

The major resource available to students is the course materials, available on-line.

Courses are provided by Open Polytechnic to students online using our existing delivery and support processes. For example, each student will access an online course page in our Online Campus student system with Open Polytechnic-developed course overview, learning outcomes, assessment framework and materials.

Other technologies are increasingly available to students; audio, video, telephone, electronic mail and forums, multimedia, e-learning and internet operations.

The Open Polytechnic operates comprehensive library services to support both staff and students with on-line catalogue and database. The library service assists students by loaning recommended material and undertaking subject searches for assignment work. Library material is couriered to students with no charge to the student.

Required information technology is specified as part of admission criteria.

7.3 Support Staff

Staff and students are supported by the following positions:

- Programme Delivery Manager
- Degree Leader
- Student Advisor
- Student Learning Supporter

7.4 Student Guidance and Support

The Polytechnic support and guidance systems available to students are set out in Part B of the Accreditation Application. Specific guidance and support for Māori and Pasifika students is detailed in the Open Polytechnic Māori Strategy, see Appendix J.

Guidance and support provided for the Bachelor of Information Technology include:

- online orientation event that covers academic study skills, studying in an open distance programme, time management, and Tiriti o Waitangi;
- programme pathways including a Tertiary Study Skills programme for those wanting to engage with tertiary level study prior to entering a level 7 programme;
- bridging programmes for mathematics and English
Note: Mathematics is an essential tool in almost all computing technologies and is, therefore, one of the foundation courses of information technology. It supports the development of critical thinking and fosters student analytical and problem-solving skills. These skills are essential for the development of complex software programs, graphical modelling and the resolution of many fundamental computing and information technology problems.
- The Library and Learning Centre
This area provides learning advising services to students and staff. Learning advising is a field of practice concerned with how students learn and how they make sense of academic conventions. The role of the advisers in the Centre is to work with students to develop the skills they need for effective learning and to promote engagement and success via a wide range of services and online resources. These services and resources support the development of core disciplinary, academic and professional skills and attributes in all students and include one-to-one consultations via telephone and Skype, assignment writing support, a student mentoring programme, tailored services for students with disabilities, orientation workshop, study and exam preparation workshops: StudyWise and ExamWise;
- responsive relationships between students and tutors using ICT - students who email tutors when working on assignments receive a response within 48 hours or sooner;
- a free 0508 telephone number which allows students to easily contact a tutor to discuss any of their study; and
- a prompt and comprehensive library service whereby students receive books and journal articles by courier post and are provided with courier bags to return these. Additionally, they have access to up-to-date resources and a range of databases online.
- Student Learner Supporter

7.5 Financial Resourcing for the Programme

The Institutional sustainability is demonstrated in the Annual Report. Applications for new programmes must be supported by a feasibility case, which must indicate that the programme will make a positive contribution to our portfolio, and a robust business case to indicate the financial contribution. Executive Management consider the business case for a programme and commit resources for the development and delivery of the proposed programme prior to commencement of accreditation and approval procedures.

8.0 Evaluation and Review

8.1 Programme Evaluation and Review

The Bachelor of Information Technology will be included in the Open Polytechnic's plan for regular Self Evaluation Reviews. These take place within a four-year cycle. The review revisits all approval and accreditation criteria and includes comprehensive stakeholder input, together with considering the evaluative questions used by NZQA in the External Evaluation and Review process.

In addition, programmes are evaluated annually by the Degree Leader and other stakeholders, and reported in an Annual Programme Evaluation Report (APER). This is a self-evaluation exercise, which reviews the performance of the programme over the past 12 months, and includes the views of stakeholders. Academic Board reviews all Annual Programme Evaluation Reports on an annual basis through a series of workshops. The Academic Board is provided with an annual report on the coverage of programme evaluations and significant findings or trends together with an action plan for improvements.

The qualification will be formally reviewed in 2020 as part of the Open Polytechnic four-year review cycle. This is an independent survey conducted by an external agency. Results from the survey are collated and analysed by the Learning Directorate and the Quality and Academic Development team. The programme may be reviewed earlier if feedback indicates that major changes are necessary.

8.2 Course Evaluation and Review

Student evaluation of individual courses is the responsibility of the Quality and Academic Development Unit, and planned through an annual programme. Surveys are collated and analysed by Quality and Academic Development and the Programme Delivery Manager and Degree Leader. The Degree Leader determines resulting actions, and these are reported on in the Annual Programme Evaluation Report. New courses undergo evaluation by Degree Leader following their first offering, see table below:

The courses are also included within a three-year cycle as part of the annual programme reporting process.

Course Code and Title	2017	2018	2019
BIT501 Business Concepts and Communications	X		
BIT502 Fundamentals of Programming	X		
BIT503 Fundamentals of Information Technology	X		
BIT504 Programming I	X		
BIT505 Introduction to Software Development	X		
BIT506 Mathematics for IT	X		
BIT601 System Analysis and Design		X	
BIT602 Project Management		X	
BIT603 Programming II		X	
BIT604 Database		X	
BIT605 Data Structures and Algorithms		X	
BIT606 Testing		X	
BIT607 Web Development		X	
BIT608 Web Programming		X	
BIT701 IT Project			X
BIT702 Interaction Design			X
BIT703 Web Technologies			X
BIT704 Advanced Database			X
BIT705 Current and Emerging Technologies			X
BIT706 Programming III			X
BIT707 Software Engineering			X

Tutors consider the courses that are identified for review in the following year and report on the need for minor revision to course material, major revision/redevelopment (requires stakeholder input, instructional design and academic approval) or no change required. This information is fed into Polytechnic Portfolio Planning.

Revision of courses to meet changes in legislation and compliance requirements take place as the need arises to update material.

8.4 Changes to the Approved Programme

All changes to programmes, with the exception of minor revisions to course materials, require academic approval at an appropriate level as defined by the Open Polytechnic's Quality Management System.

8.5 Monitoring Arrangements

Monitoring will take place in accordance with NZQA guidelines.

9.0 Research

9.1 Commitment to Research

The Open Polytechnic is responsible to staff the delivery of the degree with a teaching team that is engaged in research. Research activity is expected to be addressed using a range of approaches for this degree:

- The information technology area has a Research Plan (see Appendix K). As the Bachelor of Information Technology is a new programme, it is anticipated that this plan be expanded as delivery is implemented and new tutors engaged (see later table).
- Staff conduct research within their area of expertise that advances knowledge and understanding and supports their function as teachers. The Open Polytechnic collective contract for Academic Staff allocates a minimum of 20 days per year for each full-time staff member for approved research and professional development activities. The research commitment is confirmed annually in each person's Performance Planning and Review with his/her manager.
- Tutors will be required to be engaged in research as described in the Person Specification for this role. Approaches to research will vary, for example, sponsorship of presentations at professional body conferences and will also cover key area such as JAVA and Web Development. Some tutors are also expected to be engaged in research as part of postgraduate study.
- The Polytechnic is committed to an applied research programme. Research outputs are linked to high quality teaching outcomes in discipline areas and/or in excellence in distance education. The emphasis is on achieving practical outcomes to support our teaching.

The following table lists excerpts of research activities conducted by a selection of expected staff members which support the Bachelor of Information Technology as described in their CVs (see Appendix H for CVs and full academic profiles):

Expected Staff Member	Role	Research Activity and Interest
Dr Elozor Shneider	Tutor	<p>Current research interests - distance education and assessment design.</p> <p>Latest research:</p> <ul style="list-style-type: none"> • 46 research papers in scientific journals and proceedings of national and international conferences • Contributions to 23 National and International Conferences, including talks given to conferences <ul style="list-style-type: none"> ○ IAEA 2009 - 35th Annual Conference - Assessment for a Creative World, September 2009, Brisbane, Australia ○ Second IASTED International Conference on Education and Technology, July 2006, Calgary, Canada ○ 19th Annual Conference of the National Advisory Committee on Computing Qualifications, July 2006, Wellington, New Zealand ○ Information Technologies in Education, Russia, Rostov-on-Don, 2003 ○ 15th Annual Conference of the National Advisory Committee on Computing Qualifications, Hamilton, 2002 ○ International Conference "Physics in Education and Society", University of Otago, 1997 ○ 21st Australian and NZ Institutes of Physics conference, Pakatoa Island, 1997 • 1 patent • 9 Methodological Guidelines in Physics and Information Technology for University and High School students.
Dr Diab Abuaiadah	Tutor	<p>Abuaiadah, D., El Sana, J., & Abusalah, W. (2014). On the Impact of Dataset Characteristics on Arabic Document Classification. <i>International Journal of Computer Applications</i>, 101(7), 31-38.</p> <p>Abuaiadah, D. (2015). Using Bisect K-means Clustering Technique in the Analysis of Arabic Documents. <i>ACM Transactions on Asian and Low-Resource Language Information Processing (TALLIP)</i>, 15(3).</p> <p>Reviewer (2015): Elsevier, <i>Knowledge-Based Systems Journal</i> – Reviewed eight papers related to classification and clustering algorithms.</p> <p>Reviewer (2016): Elsevier, <i>Knowledge-Based Systems Journal</i> – Reviewed four papers related to machine learning algorithms.</p> <p>Abuaiadah, D. and Rajendran, D. (2016). A Comparative Study of Similarity Functions and Preprocessing for Arabic Short Text Binary Classification. Submitted to Springer, <i>Social Network Analysis and Mining (Journal)</i>.</p>

Dr Reza Rafeh	Tutor	<p>R. Rafeh and M. Arbabi, Data Mining Techniques to Diagnose Diabetes Using Blood Lipids, Journal of Ilam University of Medical Sciences, In Press.</p> <p>R. Rafeh and N. Jaberli, LinZinc : A Library for Linearizing Zinc Models, Iranian Journal of Science and Technology Transaction of Eclectrical Engineering, In press.</p> <p>M. Rajabzadeh and R. Rafeh, Proposing a Hybrid Recommender System for E-commerce, Tabriz Journal of Electrical Engineering, In Press.</p> <p>R. Rafeh, F. Yousefifard and S. Z. Hosseini Kob, Proposing a Formal Approach for Verification of Heart-Lung Machine, Journal of Ilam University of Medical Sciences, In Press.</p> <p>R. Rafeh, A New Approach for Classifying Radiology Reports, Journal of Medical Imaging and Health Informatics, 5(2), pp. 267-263, 2015.</p> <p>R. Rafeh and M. Khodadadi, Detecting Sybil Nodes in Wireless Sensor Networks using Two-hop Messages, Indian Journal of Science and Technology, 7(9), pp. 1363-1372, 2014.</p> <p>R. Rafeh and M. Totoonchi, Proposing a Distributed Approach for Fault Detection in Wireless Sensor Networks, Soft Computing Journal, 4, pp. 26-35, 2014.</p> <p>R. Rafeh and F. Khodadai, Proposing a New Algorithm for Detecting Node Replication Attack in Wireless Sensor Networks Based on the Local Propagation and Legal Wormhole Channels, Tabriz Journal of Electrical Engineering, 44(3), pp. 24-33, 2014.</p> <p>A. Aghaee, R. Rafeh and M. Mahdavi, Proposing a Method for Improving the Performance of Tourism Recommender Systems, Journal of Operations Research in Its Application, 41(2), pp. 139-152, 2014.</p> <p>R. Rafeh, A Proposed Approach for Safety Management in Medical Software Design, Journal of Medical Systems, 37, pp. 1-5, 2013.</p> <p>S. Hamedheidari and R. Rafeh, A Novel Agent-Based Approach to Detect Sinkhole Attacks in Wireless Sensor Networks, Computers and Security, 37, pp. 1-14, 2013.</p> <p>R. Rafeh and A. Rabiee, Towards Design of Safety-Critical Software, Journal of Applied Research and Technology, 11(5), pp. 683-694, 2013</p> <p>A. Hashemi, A. H. Pilevar and R. Rafeh, Mass Detection in Lung CT Images Using Region Growing Segmentation and Decision Making Based on Fuzzy Inference System and Artificial Neural Network , International Journal of Image, Graphics and Signal Processing, 6, pp. 16-24, 2013.</p> <p>R. Rafeh and R. Rashidi, Using Heuristic-based Search for Zinc Models, International Journal of Intelligent Systems and Applications, 10, PP. 11-17, 2013.</p> <p>R. Rafeh and A. Bahrehmand, An Adaptive Approach to Dealing with Unstable Behavior of Users in Collaborative Filtering Systems, Journal of Information Science, 38(3), pp. 205-221, 2012.</p> <p>R. Rashidi, R. Rafeh, M. Rahmani and E. A. Khadem, ZLoc: A C++ library for local search, International Journal of the Physical Sciences, vol. 6(31), pp. 7095 - 7099, 2011.</p> <p>V. Rafe, A. T. Rahmani and R. Rafeh, Formal Analysis of UML 2.0 Activities Using Graph Transformation Systems, International Journal of Software Engineering and Knowledge Engineering, 20(5), pp. 679-694, 2010.</p> <p>K. Marriott, N. Nethercote, R. Rafeh, P. J. Stuckey, M. Garcia de la Banda, M. Wallace, The Design of the Zinc Modelling Language. Constraints, 13(3), pp. 229-267, 2008.</p> <p>Conferences:</p> <p>S. Norouzi, M. Moghimi and R. Rafeh, A Recommender System for Predicting Web Users' Behaviours, 7th International Conference on Information and Knowledge Technology (IKT 2015), pp. 324-327, 2015, Urmia, Iran.</p>
---------------	-------	--

	<p>M. Azizi, J. Zahiri, R. Rafeh and M. Eslami, Detecting False Positive Interactions in Protein-Protein Interaction Data, The 5th Iranian Conference on Bioinformatics, pp. 637-641, 2014, Tehran, Iran.</p> <p>M. Eslami, J. Zahiri, R. Rafeh and M. Azizi, Antifreeze Protein Detection Using Sequential Minimal Optimization Classifier, The 5th Iranian Conference on Bioinformatics, pp. 634-636, 2014, Tehran, Iran.</p> <p>M. Akbaripour, R. Rafeh, J. Zahiri and V. Rafe, RNA-Protein Interaction Prediction Using Sequence Information, The 5th Iranian Conference on Bioinformatics, pp. 629-634, 2014, Tehran, Iran.</p> <p>R. Rafeh and P. A. Aghdam, Accessing Canvas Elements in HTML5, World Conference on Information Technology, pp. 136-141, 2011, Istanbul, Turkey.</p> <p>S. Zangaraki and R. Rafeh, An Approach to Verify Concurrent Object-Oriented Programs, 3rd International Conference on Advanced Computer Theory and Engineering (ICACTE), pp. 127-129, 2010, Chengdu, China.</p> <p>R. Rafeh, Proposing a New Search Template for Modelling Languages, World Conference on Information Technology, 1490-1493, 2010, Amsterdam, Netherlands.</p> <p>M. Davoudzadeh, R. Rashidi and R. Rafeh, A Linear Solution for the University Timetabling, Second International Conference on Computer and Electrical Engineering, pp. 54-57, 2009, Dubai, United Arab Emirates.</p> <p>S. Asadollahi, V. Rafe, R. Rafeh and A. T. Rahmani, Towards Automated Software Verification Using Model Checking Techniques, Third IEEE International Symposium on Theoretical Aspects of Software Engineering, pp. 305-306, 2009, Tianjin, China.</p> <p>F. Mahdian, V. Rafe, R. Rafeh and A. T. Rahmani, Modeling Fault Tolerant Services in Service-Oriented Architecture, Third IEEE International Symposium on Theoretical Aspects of Software Engineering, pp. 319-320, 2009, Tianjin, China.</p> <p>R. Rafeh, K. Marriott, M. Garcia de la Banda, N. Nethercote, M. Wallace, Adding Search to Zinc, International Conference on Principles and Practice of Constraint Programming, pp. 624-629, 2008, Sydney, Australia.</p> <p>R. Rafeh, M. Garcia de la Banda, K. Marriott and M. Wallace. From Zinc to Design Model, Practical Aspects of Declarative Languages, pp. 215-229, 2007, Nice, France.</p> <p>M. Garcia de la Banda, K. Marriott, R. Rafeh, M. Wallace. The Modelling Language Zinc, International Conference on Principles and Practice of Constraint Programming, pp. 700-705, 2006, Nantes, France.</p> <p>R. Rafeh, K. Marriott, M. Wallace, M. Garcia de la Banda. Towards the New Modelling Language Zinc, Open Source Developers' Conference, pp. 137-141, 2005, Melbourne, Australia.</p> <p>Books:</p> <p>R. Rafeh and V.R. Mirzaeian, English for Computer Students, ISAN publication, 2012</p> <p>R. Rafeh, H. R. Moghasemi, Artificial Intelligence (in Farsi), Gostaresh Oloom Paye, 2011.</p> <p>R. Rafeh, Computer Operation and Dos (in Farsi). Arak University, 2001.</p> <p>R. Rafeh, An Introduction to Formal Languages and Automata (in Farsi), Arak University, 2001.</p>
--	---

Dr Sakthithasan Sripirakas (Sri)	Tutor	<p>Sripirakas, Sakthithasan; Pears, Russel; Koh, Yun Sing; One Pass Concept Change Detection for Data Streams Pacific Asia Knowledge Discovery and Data mining, vol. 7819, 461 - 472 ,2013 ,Springer</p> <p>Sripirakas, Sakthithasan; Pears, Russel; Mining recurrent concepts in data streams using the discrete Fourier transform Data warehousing and knowledge discovery, 439-451, 2014, Springer</p> <p>Pears, Russel; Sakthithasan, Sripirakas; Koh, Yun Sing; Detecting concept change in dynamic data streams Machine Learning,vol. 97 3, 259-293, 2014, Springer</p> <p>Sripirakas, Sakthithasan; "Capturing Recurring Concepts in High Speed Data Streams: A Thesis Submitted to Auckland University of Technology in Fulfilment of the Requirements for the Degree of Doctor of Philosophy (PhD)</p> <p>Sakthithasan, Sripirakas; Pears, Russel; Bifet, Albert; Pfahringer, Bernhard; Use of ensembles of Fourier spectra in capturing recurrent concepts in data streams "Neural Networks (IJCNN), 2015</p> <p>Sakthithasan, Sripirakas; Pears, Russel; Capturing recurring concepts using discrete Fourier transform, Concurrency and Computation: Practice and Experience, 2016, Wiley Online Library</p>
Dr Steve Corich	Tutor	<p>PhD Thesis:</p> <p>Corich, S. P. (2011). Automating the measurement of critical thinking in discussion forums. (PhD thesis, Massey University, Palmerston North, New Zealand). Available from http://hdl.handle.net/10179/2991</p> <p>Book Chapters:</p> <p>Corich,S. Kinshuk. & Jeffrey,L.M. (2010). Automated measurement of critical thinking for discussion forum participants, pp 127 - 143. In Multiple Perspectives on Problem-Solving and Learning in the Digital Age. Ifenthaler,D.,Kinshuk., Isaias, P.,Demetrios, G., Sampson, J., & Spector, M. (Eds.). New York: Springer-Verlag.</p> <p>Corich,S. Kinshuk. & Jeffrey,L.M. (2007) The Use of Discussion Forums in Learning Communities, pp 87 - 108. Learning Communities in Online Education. Luppiciini, R (Ed). Information Age Publishing, Charlotte, NC. USA.</p> <p>Refereed Journals:</p> <p>Corich, S. (July 2008) Teaching Web Application Development: Microsoft Proprietary or Open Systems? Journal of Applied Computing and Information Technology.</p> <p>Corich, S. Kinshuk. Hunt,L.M (March 2006) Computerised Content Analysis for Measuring Critical Thinking within Discussion Forums. Journal of e-Learning and Knowledge Society Vol 2, Issue 1, (p47 - 60). Retrieved June 22, 2006 from http://www.je-lks.it/archive/01_06/03.html</p> <p>Corich, S. (2005, December), Let's Get Ready to Moodle. Bulletin of Applied Computing and Information Technology Vol. 3, Issue 3. ISSN 1176-4120. Retrieved December 19, 2005 from http://naccq.ac.nz/bacit/0303/2005Corich_LMS.htm</p> <p>Corich, S. & McLay, A. (2004, June), Using degree courses to build industry relationships. Bulletin of Applied Computing and Information Technology Vol. 2, Issue 2. ISSN 1176-4120.</p> <p>Corich, S. Kinshuk. Hunt,L.M (December 2004) Assessing Discussion Forum Participation: In Search of Quality, International Journal of Instructional Technology and Distance Learning Vol 1 -12 (p 3 -12).</p> <p>Corich, S. (July 2003) From Microsoft to Open Systems: The conversion of a Web Application Development Course, Journal of Applied Computing and Information Technology.</p>

		<p>Conference Proceedings (Paper presentations):</p> <p>Corich, S.P., & Freidlander, A. (2010). Establishing an IT Business Incubator in Hawke's Bay. In S. Mann, M.Verhaart (Eds.). Proceedings of the 1st Annual Conference of Computing and Information Technology, Education and Research in New Zealand (incorporating 23rd Annual NACCQ), Nelson, New Zealand. Pp 53-62.</p> <p>Corich, S.P., & Robertson, G. (2010). The changing shape of NACCQ. . In S. Mann, M.Verhaart (Eds.). Proceedings of the 1st Annual Conference of Computing and Information Technology, Education and Research in New Zealand (incorporating 23rd Annual NACCQ), Nelson, New Zealand. Pp 43-51.</p> <p>Corich,S. Kinshuk. & Jeffrey,L.M. (2009) Automating the Measurement of Critical Thinking for Individuals Participating in Discussion Forums. IADIS International Conference CELDA, November 20 – 22. Italy.</p> <p>Corich, S. (2009) Using an automated tool to measure evidence of critical thinking of individuals in discussion forums In S. Mann, M.Verhaart (Eds.) Proceedings of the 22nd Annual Conference of the National Advisory Committee on Computing Qualifications, Auckland, New Zealand. July 4 - 8. pp 59 - 64</p> <p>Corich, S. (2008) Developing strategies to deal with the multiple generational groupings within the tertiary classroom In S. Mann, M.Lopez (Eds.) Proceedings of the 21st Annual Conference of the National Advisory Committee on Computing Qualifications, Auckland, New Zealand. July 4 - 8. pp 59 - 64.</p> <p>Corich,S. Kinshuk. & Jeffrey,L.M. (2007) Changing focus from group to individual: Using an automated tool to measure evidence of critical thinking in discussion forums. IADIS International Conference CELDA, December 7 – 9. Portugal.</p> <p>Corich, S. (2007) From Microsoft to Opeb Systems and Back. In S. Mann, N. Bridgeman (Eds.) Proceedings of the 20th Annual Conference of the National Advisory Committee on Computing Qualifications, Nelson, New Zealand. July 8 - 11. pp 59 - 64.</p> <p>Corich, S. Kinshuk, Hunt,L.M . (2006, April) Measuring Critical Thinking within Discussion Forums using a Computerised Content Analysis Tool. Proceedings of Fifth International Conference on Networked Learning 2006. Lancaster University, UK</p> <p>Corich, S. (2006, July). The Case for an ITP Collaborative Computing Degree? Proceedings of the 19th Annual Conference of NACCQ, Wellington.</p> <p>Corich, S. (2005, July). Is It Time To Moodle? Proceedings of the 18th Annual Conference of NACCQ, Tauranga.</p> <p>Corich, S. , Williams,R. (2005, July).What Makes Students Employable? Proceedings of the 18th Annual Conference of NACCQ, Tauranga.</p> <p>McLay, A. , Corich, S. (2005, July).Projecting Students to Employment. Proceedings of the 18th Annual Conference of NACCQ, Tauranga.</p> <p>McLay, A , Corich, S. (2005, April). Transporting the Workplace into the Classroom: A Case Study at the Eastern Institute of Technology. Proceodings of NZACE Conference, Palmerston North.</p> <p>Corich, S., McLay, A., Jamieson, J. (2004, July). Stand and deliver: A trial of block mode delivery for an industry specific degree course. Proceedings of the 17th Annual Conference of NACCQ, Christchurch.</p> <p>Corich, S., McLay, A., Sketlton, D. (2004, July). Consultancy Opportunitites: Answering a plea for help from a Public Library. Proceedings of the 17th Annual Conference of NACCQ, Christchurch.</p> <p>Corich, S., Nesbitt, T. (2004, July). The Case for a National Degree: If not, why not and what next. Proceedings of the 17th Annual Conference of NACCQ, Christchurch.</p>
--	--	---

	<p>Corich, S. Kinshuk, Hunt, L.M. (2004, July) Using Discussion Forums to Support Collaboration, Proceedings of Third Pan Commonwealth Forum on Open Learning, Dunedin.</p> <p>Corich, S. (July 2003, July) Case Studies in E-Commerce: Importing a used Japanese car, Proceedings of the 16th Annual Conference of NACCQ, Palmerston North.</p> <p>Corich, S. & McLay, A (July 2003) Developing Industry Partnerships: Allied Telesyn and EIT, Proceedings of the 16th Annual Conference of NACCQ, Palmerston North.</p> <p>Corich, S. (July 2002, July) From Microsoft to Open Systems: The conversion of a Web Application Development Course, Proceedings of the 15th Annual Conference of NACCQ, Hamilton.</p> <p>Corich, S. (July 2001, July) The Case for a National Degree, Proceedings of the 14th Annual Conference of NACCQ, Napier.</p> <p>Corich, S. (July 1999, July) Enterprise Resource Planning in the Tertiary Sector, Proceedings of the 12th Annual Conference of NACCQ, Wellington.</p> <p>Corich, S & Verhaart, M. (1997, July) Microsoft-APNZ Technology in Education Staff Award. Association of Polytechnics in New Zealand (APNZ), Nelson</p> <p>Corich, S & Verhaart, M. (1996, July) Multimedia – From Help Files to Netscape”. Proceedings of the 9th Annual Conference of NACCQ New Plymouth.</p> <p>Presentations:</p> <p>Young, A., Joyce, D., Robertson, G., & Corich, S.P. (2010). ICT Education: Past, Present & Future. Presentation at the NZCS Conference Celebrating 50 Years of ICT Innovation, 15-18 Sept.</p> <p>Corich, S. (2009) The ITP Collaborative Computing Degree. 22nd Annual Conference of the National Advisory Committee on Computing Qualifications, 10 - 13 July, Napier, New Zealand. NACCQ</p> <p>Corich, S. (2008) Curriculum & Development Workshop. 21st Annual Conference of the National Advisory Committee on Computing Qualifications, 4-8 July, Auckland, New Zealand. NACCQ</p> <p>Corich, S. (2008) The Future of the Blue Book. 21st Annual Conference of the National Advisory Committee on Computing Qualifications, 4-8 July, Auckland, New Zealand. NACCQ</p> <p>Corich, S. (2007) Using Discussion Forums for Assessment. Teaching and Learning Conference, 5-6 July, Napier, New Zealand.</p> <p>Corich, S. (2007) The ITP Collaborative Computing Degree. 20th Annual Conference of the National Advisory Committee on Computing Qualifications, 8-11 July, Nelson, New Zealand. NACCQ</p> <p>Corich, S. (2007) Degree Moderation Processes. 20th Annual Conference of the National Advisory Committee on Computing Qualifications, 8-11 July, Nelson, New Zealand. NACCQ</p> <p>Corich, S. (August 2003) Broadband for Business and the Community, TUANZ Broadband Seminar, Napier</p> <p>Corich, S. (April 2002) The Impact of IT on the “Knowledge Gap”, Knowledge Gap Research Seminar, Auckland</p> <p>Corich, S. (Sep 2000) Introduction to E-Commerce, Regional E-Commerce Seminar, Napier</p> <p>Verhaart, M and Corich, S. (1998, Oct) Creating your own home page. Institute of Professional Engineers (IPENZ) Internet Seminar Napier.</p> <p>Corich, S. and Verhaart, M. (1997), HTML Knowledge bases. APNZ Conference Presentation. In conjunction with the “Microsoft-APNZ Technology in Education Award”.</p> <p>Other works:</p>
--	--

		<p>Corich, S. (2005) Book Reviewer, FitzGerald, J. & Dennis, A. (2005) Business Data Communications and Networking. (8th Ed) .Wiley & Sons, USA.</p> <p>Corich, S. (2004) Book Review, Instructional Design in the Real World: A View from the Trenches, Journal of Educational Technology & Society, Vol 7, January 2004.</p> <p>Corich, S. (1998) E-Mail: Messages with Byte in the Tertiary Sector. Masters Thesis Massey University</p> <p>Corich, S. (1998) On-Line Teaching Materials, [CD-ROM] Used by Several Tertiary Institutes and EIT Hawke's Bay</p>
Dr Guinevere Nalder	Tutor	<p>Engineering Heritage: The Scottish Contribution to New Zealand's Lighthouses, Proc. ICE Engineering Heritage and History, 166, May 2013 EH2 pg 73-82</p> <p>Auckland City's Earliest Water Supply. Proc. 19th Congress Asia-Pacific Division of the International Association for Hydro-Environmental Engineering, Hanoi, September 2014</p> <p>Southern Lights, The Scottish Contribution to New Zealand's Lighthouses, Whittles, Dunbeath Scotland, 2016 ISBN 978-184995-156-2, (Pub date 30 June 2016)</p> <p>Hydraulic Structures: Downstream Turbulence of Submerged Thin Plate Weirs. Proc. 19th Congress Asia-Pacific Division of the International Association for Hydro-Environmental Engineering, Hanoi, September 2014</p> <p>New Discharge Formula for Thin Plate Weirs. Proc. 36th Biennial Congress, International Association for Hydro-Environmental Engineering, The Hague, July 2016</p> <p>Climate Change: Joint editor, "Summary of recommendations for policymakers on adaption to climate change in water engineering" published in Hydrolink, 3, 93-95, 2015"</p>
John Jamieson	Tutor	<p>Bespoke software development for PanPac:</p> <p><i>Downtime monitor system</i> – (100% contribution)</p> <p>DTM node – Multiple machine center system for recording downtime events and interlocking machine centers. Operator controlled HMI terminal. There are 14 terminals installed.</p> <p>DTS server – Database and data collection system for the DTM nodes</p> <p><i>High Speed Laser marking</i> – (30% contribution)</p> <p>Control software for interface to the laser marker, UV sealing lamp and spray guns.</p> <p><i>Sawscope blade health and recording system</i> (100% contribution)</p> <p>DAQ – Two data collectors for interacting with the deflection sensors, Operator HMI terminals, Machine center PLCs, Sawscope management system and database.</p> <p>Operator HMI – Two touch panel terminals for recording blade numbers and monitoring blade deflections.</p> <p>Sawscope management system – Software to record and manage saw blade usage. Provides statistical information, reports and usage graphs. Includes real-time blade deflection and alarm monitoring.</p> <p><i>Pith detection system</i> – (50% contribution)</p> <p>Cut plan evaluator – This software interfaces to a camera to locate the pith (heartwood) which is evaluated and recommends a possible cut plan for the cants.</p> <p><i>INCA Project</i></p> <p>Sawmill and Drymill websites (100% contribution) – Two websites created for the purposes of providing downtime reports and production reports – most reports have graphs, Excel export features.</p>

		<p>ETL (30% contribution) – Realtime time series data capturing servers (around 20) for acquiring production data from various machine centers.</p> <p>plantVUW (30% contribution) – Operator controlled touch panel systems for monitoring live production and factory data.</p> <p><i>Pulp bale marking</i> (100% contribution)</p> <p>Operator HMI - Operator controlled touch panel systems for monitoring a number of laser marking systems.</p> <p>Bespoke Software for Miraka milk:</p> <p><i>Milk Tanker delivery tracking system</i> (100% contribution)</p> <p>Operator HMI – Two operator controlled touch panel systems for recording milk transfer details.</p> <p>Milk transfers reporting system – A Server providing PLC and offsite interfacing for the operator terminals. Contains a database for storing the data and generating various activity reports.</p> <p>Bespoke Software for Tomoana Pelt Processors:</p> <p><i>No-hands pelt grading system</i> (100% contribution)</p> <p>Pelt grader – Operator controlled touch panel HM system. System utilizes computer vision and voice recognition technologies for grading and sizing sheep skins.</p>
--	--	---

9.2 Current and Planned Research Activity

Research activity at the Polytechnic must be adequate, and effective in supporting the portfolio of degree programmes. The quality and quantity of research outputs are monitored through annual reports to Academic Board from the Research Committee. The research report to Academic Board includes:

- the number of research outputs in defined categories e.g. Books, Chapters in Books, peer reviewed journals;
- the number of research outputs in defined categories successfully completed, per number of outputs planned for completion in that year; and
- any additional research outputs achieved.

In addition, an annual Open Polytechnic Annual Research Report is produced and released for public consumption (see Appendix T).

Research must meet the objectives of the Open Polytechnic Research Strategy. The 2012-2015 strategy is included as Appendix L.

9.3 Student Research Components

As part of their learning experience, students on the Bachelor of Information Technology programme will be engaged in projects and the compilation of reports which will include research components. Every student's project must be supervised by a tutor. In most cases, student projects carried out as part of the Bachelor of Information Technology will not require ethical approval. However, on occasions where a supervisor deems ethical consideration is required, the Open Polytechnic Research Regulations and Ethics Guidelines will apply. The supervisor or, if there are more than one, the senior supervisor, will have ultimate responsibility with respect to the:

- appropriate research methodology and ethical considerations of the project;
- welfare of students and other human volunteers that are involved in the research;
- monitoring the quality and conduct of the research;
- contacting of relevant manager or an Ethics Committee for advice or guidance, if required; and
- property belonging to the Polytechnic used in the research.

It is the supervisor's responsibility to ensure that the research complies with the ethical standards of the Polytechnic and it is the student's responsibility to consult regularly with the supervisor and carry out assigned tasks to the satisfaction of the supervisor.

Supervisors will be assigned on the basis of their subject expertise and proven research capability.

9.4 Organisational Support for Research

To support research activities, the Open Polytechnic has established a Research Committee as a sub-committee of Academic Board. The committee produces a 3-year Research Plan which is adjusted annually.

The Open Polytechnic places high importance on internal and external peer review. Staff are encouraged to present internal seminars to obtain feedback prior to external presentations, and a working paper series has been developed to provide a forum for peer review prior to publication in refereed journals.

Research conducted by students and staff complies with generally accepted ethical principles of informed consent and avoiding mental and/or physical harm to participants. Research proposals are approved by an Ethics Committee, Guidelines are attached as Appendix M.