# **200 and 300 Level Courses**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

This section of the report includes identification and evaluation of relevant content of all the level 200 and 300 courses completed on the BICT, including recommendations about possible future content.

## **Level 200 Courses**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**BCIS201 Alternative Modelling**

Alternative Modelling was the first course that introduced the various methodologies used in the developing of software products. The two most commonly used were the SDLC, which is the Software Development Life Cycle, which is the more traditional approach when compared to the more modern agile approach of Scrum. Suitable SDLC approaches are to be followed when developing software. The waterfall process is less adaptable to change and therefore more rigid. I learned that this sequential model is dependable, long term, accountable, scales well and suitable for big organisations. It is assumed that each phase can be written off before the next phase can begin. There are seven development phases in total. Generally an agile approach such as Scrum would be generally more suited to projects as it allows for more trial and error than the waterfall approach. I also learned that Scrum is more successful as it is designed to handle changing requirements. Scrum consists of teams working in short development life cycles, this allows for changing requirements to be implemented every two to three weeks and allows to constantly test, develop and implement new features. Other material covered in this course includes the RUP process, Business Analyst roles, skills and techniques, DFD diagrams and the importance of testing.

A lot of course content was valuable for my project especially the Agile material and what Scum is, roles involved and how to apply it within projects. I would however recommend that the course could include more practical Scrum material rather than so much methodology research.

**BCIS202 Systems Design and Implementation**

BCIS202 included some overlapping material from BCIS201 such as project methodologies. The course mainly focuses on project management and all the different stages to a project. Managerial roles and activities involved in all the different project team roles were discussed. Something useful that we learned was about the risk management process which was further discussed in IS301. The first assignment of creating an evaluation model and applying it to three different interfaces had very vague and unclear in instructions. The idea behind the assignment is great, also the fact that you learn about learnability, efficiency, memorability, errors and satisfaction proved to be very useful especially in level 300 courses such as Mobile Technology. In saying that a clearer guideline was needed in order to know what evaluation model to create. An assignment example would have been of great help. Assignment two was also very similar to the methodology essay completed in BCIS201.

My recommendation would be get a client, bring them to class, get them to explain the software system that they wish to implement and I would get the whole class to write a system implementation plan including interface design, people involved, risks associated, time frame etc. That way they could get their first taste of Scrum and dealing with clients. Practicing risk management early in the degree would help them a lot when it comes to doing it again in IS301 and it won’t be such a shock by then. Also the client would have changing requirements each week and challenge students in what they create. This way students get to practice what they have been taught and more or less get interaction in dealing with people which at the end of the day, no course can teach you that unless you practice. I feel like that would have benefited me greatly when it comes to preparation for my project.

**BCPR203 Database Management Systems**

This course has helped me improve my knowledge about databases, relationship diagrams, writing queries, triggers, stored procedures, SQL Scripting and views. Very interesting class with a lot of useful material covered. We used MySQL to complete all practical work. We also learned about different concepts associated with databases such as data warehousing, big data, data management, distributed databases, security and a lot more. My only complaint is that there are not enough database classes in this degree and it’s very surprising because there is a lot of material to cover and so much to learn and one course is not enough. Also databases are a huge part of IT and BAs, Programmers, Networkers or whatever your specialisation will be, it is inevitable but to interact with database concepts in your career.

**BCIT242 Website Development**

This course introduced me to HTML, CSS and JavaScript. Our assignments included building a website by using what we have learned in class. We used online validators to check our forms. This course provided very useful core web basics that I have used further on in Professional Practice and Multimedia courses. What I really enjoyed is that we got to choose the theme of the website we wanted to create and that added to the enjoyment of doing the assignment as you create a website about something that interests you. Another important aspect of the course was paperwork. We had to write a website specification document before we started building it and we also learned the theory around website security, privacy issues, accessibility, target audience and personas which again helped in multimedia courses such as BCIT252.

I would recommend to include more JavaScript as we had limited exposure to it in the course. I think that is especially important for IS students as we don’t take many advanced programming courses so learning it in more depth would be beneficial.

**BCIS206 Professional Practice**

Something that makes this course different when compared to others is the way in which it was conducted. Each class we sat in a big round circle with lots of interaction and discussion. This is very important as in the industry you have to face people and talk in front of audiences or clients. Assignments consisted of group work which was a great experience as long as you get along with group members. I learned about the different roles within IT, team relationships, communication and areas of the Treaty of Waitangi. We did not however focus on learning new practical skills as the course relied on tying together soft skills with the practical skills learned from past courses. I really liked how the course stimulated a real work environment by having a team leader and a group working together. The assignments worked well in such a way that the IS students could contribute to the paperwork and the programmers and multimedia students would focus on programming and web development.

**BCIT252 Multimedia and Animation Development**

The course kicked off with some theory work building on what we learned in Web Development. We had to research multimedia aspects such as sound, video, graphics and images. Definitely a very useful research assignment that helped me a lot in understanding the different multimedia elements.

Blender was the programme used in the second half of the course for 3D modelling and animation. The tool itself was quite unreliable at times and crashed a lot which resulted in many wasted hours and a lot of frustration. The 3D modelling exercises helped a lot when it came to creating the final animation. Very fun and interesting to learn but in saying that I’m not sure how useful or relevant Blender is as a modelling and animation tool in today’s industry. More reliable software is needed to actually aid the students learning and not impair it.

**BCIS285 Software Applications and IS Testing**

In the semester that I took testing, the course delivery was quite disorganised. We had about three or four different staff members taking our classes and debating on what our assignments would be. I was very worried about how I would do in this course just because instructions were unclear. The course was meant to include practical testing but for some reason our lab sessions were cancelled.

The testing theory was however quite useful and I enjoyed learning it. For me personally the most that I got out of this course was from the Novopay assignment. We had to write an implementation plan discussing quality assurance, people involved, tools uses, metrics and the importance of testing. I think that the IS students found this assignment more up their alley than the other students from different streams. In saying that I have learned a lot about project management and QA which I have applied in IS301 and more importantly throughout my project.

**BCIS290 Introduction to Business Analysis**

This was the introductory course to my specialisation in the IS stream. My first view at the different analysis methods and identifying: business processes, stakeholders, requirements, business rules, metrics, functional and non-functional requirements and creating process charts. Everything that I have learned from this course has been 100% useful and it is definitely material used in the industry. I have learned about PESTLE, McKinsey’s 7s model and Porter’s 5 forces. All of which have been further reinforced in BCIS390 and IS301.

**BCIS203 Business Information Management**

In this course we covered the different roles of IT in business, decision support systems, decision making models, business intelligence, data mining, data warehousing and data visualisation techniques. Overall the course content is very interesting and it’s definitely material that I see useful my future career. I think this course content should be for all students to learn and not just the IS stream.

This course needs to improve on providing clear assignment instructions. The instructions were too vague especially when we had to guess what they meant and what was asked of us. The international students also had a lot of trouble understanding the expectations of the assignments and that is understandable as not even the domestic students understood. I was also very unhappy with the marking schedule as most students in both assignments either scored below 65% and some failed. Very few students scored high marks in both assignments. Marking was very harsh and even straight A students did poorly in this course, which is only a level 200 course. The expectations and grading in BCIS203 is way harsher than in some level 300 courses. The marking schedule also need to be more specific of what you are marked e.g. this many marks for a heading, or graph used or placement of percentages on a graph rather than personal opinion.

## **Level 300 Courses**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**BCIS301 Management of Information and Communication Technologies**

BCIS301 is a course that every student has a different opinion on. Material taught included the use of generic IT strategies, how to establish IT governance, writing a project proposal, constructing an implementation plan, gathering requirements, using frameworks, risk management, quality assurance and using one-dimensional and two-dimensional models.

I personally think that the course is definitely directed towards IS students and that a lot of other students studying the different streams, found it quite hard to grasp the material. Writing a project proposal is definitely essential to know in order to write a proper proposal for the industry project. I think a lot of the students needed more guidance of what a proposal includes but at the same time this is a level 300 course where the students are expected to take initiative and participate in a self-learning environment. If the “self-learning environment” attitude would be introduced earlier in the degree, then students would not be so shocked by the way in which this course is run.

However the other assignment of writing an implementation plan may not have as great value to a programmer or a networker as it does to an IS student. I personally learned a lot from the course, I enjoyed the way in which it was run as it was a good wake up call for a lot of students. Overall I found the material very interesting and very valuable for my project.

The final test was a great way to test the students learning of the course. Many students rely on each other’s knowledge during the assignments but there is no hiding in the final test. I would definitely keep the minimum 50% pass rate for the test as it encourages students to make more of an effort to learn the material. The questions were also very well directed at each topic studied in the assignments. Each question included a little bit of everything which again is a great way to test the extent of the students’ knowledge on the material covered. I have applied the knowledge learned from this course to my project and it was an overall great and valuable learning experience.

**BCIS390 Business Analysis**

This course was taught by Karin Lehman, the most knowledgeable person that I met when it comes to being a business analyst and the required skillset that goes with the role. In this course I learned about business strategy and implementation, mapping processes, identifying business rules, gathering requirements, mission and vision statements, different methods of analysing business needs, project management, structuring plans, facilitation techniques, UML diagrams, gap analysis and the list goes on. Out of all the courses at Ara this course is the most relevant course to the IS stream out of the whole degree. Everything that I have learned from Karin has prepared me for the industry project and when I did the process mapping for Assurity, I did refer back to my class notes a number of times. The course is definitely up to date with industry material and we had guest a speaker talking about topics such as Scrum and Agile Methodologies which again proved to be tremendously useful.

When it comes to the assessments for the course, they were again very effective and I have learned a lot about process analysis and mapping. The first test that we had for the course, I found quite complex and it was quite a bit of work to do under pressure in just 1 hour 40 minutes. The way in which the assignment was split (Part A and Part B) was also a great way of managing the workload. What I have learned and done in the assessments has given me the right skills to carry out my project. Overall this was a great course, taught by a very talented tutor and included material of great value for industry expectations.

**BCIS381 Special Topic in ICT**

Special topic fully adopted the “self-learning environment” attitude. Every single step of the way we were guided, supervised and every week we received feedback. This course focussed on choosing a “special topic” of interest then completing a proposal check list, putting together a research report and finishing with a final presentation. I think that the most important aspect in to choose a topic that challenges you. That is the best way to ensure that you get the most out of IS381. My topic was Cloud Computing and the outcome of this subject resulted in a Cloud Computing for Beginners Handbook.

I was pushed out of my comfort zone to improve my technical knowledge and even more to go and teach myself this subject. This was very important to achieve as an IS student, when we are not greatly exposed to technical aspects of IT. Not every student can undertake this course as expectations are set high, work load requires a lot of research time and you need to take initiative and want to learn because there is no hand holding throughout the course. The outcome of the course was of great value! I used my Cloud Computing knowledge on data security, storage confidentiality and availability in my project. I am very happy with my topic and I was pushed again to do something I haven’t done which is present a 25-30 minute presentation in front of the whole IS301 class. Biggest audience I ever presented to but again this is another skill that also contributes to the end of the project presentation.

Altogether all students that took IS381 in my semester learned a lot not from just the topic but also about ourselves proving that we can learn and manage ourselves in order to produce a certain outcome. Mehdi definitely knows how to push his students in a way that is not too overwhelming but helps them achieve a certain goal which is very rewarding. I am very proud of what I have achieved in IS381 and he guided all of us in the right direction when we went off track. The course covered a wide variety of skills needed in the industry as well such as report writing, time management, research skills, public speaking and communication.

**BCIT388 Mobile Technologies**

Mobile Technologies was split into two different sections, one theory and one practical. Both parts of the course offered a different knowledge on the different aspects of Mobile Technology. In the theory part of the course we learned about different mobile operating systems, interface design, development challenges, user centred design, security, RFID transmission, mobile trends, BYOD, Gamification, ambient intelligence and virtual reality. This resulted in a research report on a certain type of technology. My partner and I chose the topic of “Is Uber a threat to the taxi industry?” The idea behind the assignment is great and I gained a lot of useful knowledge. I also enjoyed learning about Uber especially that it’s such a big technological trend. This assignment should definitely remain a part of the course as it adds a lot of value not only to the course but also to the student’s knowledge of today’s technological trends.

In the practical part of the course we had to create a Maori language application that meets a certain criteria. We used MIT App Inventor to create the language app. Realistically people would code a language app and I don’t see how making a language app with building blocks would add any value to my career in IT. My recommendation is to keep the assignment concept but use more up to date tools and software that adds value to the students learning experience. The interface of the application was hard to use and unpractical at times. As some students don’t know how to code, perhaps more reliable applications can be used in this assignment.

One aspect of the course that I would like to emphasise is the timing of teaching students about App Inventor. We started learning and playing around in the application for about 3 weeks. We then moved to assignment two which was a theory report and forgot about App Inventor for a good half of the course. Later in the second half we returned to working in class on the App Inventor assignment. By this time most students already forgot what was taught in the first 4 weeks. I really did enjoy the course and how the material was taught but there are some areas of improvement.

## **Overall Recommendation**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

When looking at the degree as a whole, I think that the courses were very useful and the material taught was of great value. However some courses were more relevant than others. The degree does need some improvement on what courses are appropriate for each stream but overall it does provide the essential skills that are required in the industry.

A challenge for the Computing Department will be to keep the Bachelor material up to date. The industry constantly changes and therefore new requirements will appear and be expected of Ara graduates. The only issue is not only that IT forever changes but also how quickly it does! This refers to technology, broader skills, new IT trends etc. It will be very hard to update courses regularly with more industry relevant material and then in a couple of years, when implemented, the industry is on to the next trend.

One aspect that I have learned about the industry that I am sure will never change is the people aspect in relation to communication. The Bachelor should have a course where they teach talking, communication, listening, understanding requirements and general people skills. A lot of the networking and programming papers are very technically based. When it comes to these students doing their project and eventually working in the industry, talking to people and communicating with the client/employer will be there greatest challenge. Even one course will be enough just so the students get exposed to industry practices such as speaking in weekly meetings etc.