

Work-Based Professional Practice B in Data Analytics

Undergraduate

This is a **preview** of the course descriptor for a proposed course.

Proposer

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Summary

This course is work-based and is focused on the real-world application of data science in a workplace environment. It includes experiencing how statistical modelling, machine learning and relevant algorithms are applied to conduct data science studies on real data in a commercial environment. Students who do this course will obtain practical experience in the design, implementation, and evaluation of data science approaches.

Course Description

This course is not a stand-alone introduction to applied data analytics and can only be delivered as part of the BSc Hons Graduate Apprenticeship in Data Science.

This course provides Graduate Apprenticeship students with a holistic approach to business problem solving to support decision making and providing business insights. It is a key stage in the learning and development strategy of the graduate apprenticeship programme in Data Science. It is project based, introduced in the university and facilitated in the workplace around team-based projects. This is a work-based learning course worth 40-credits. Students undertake an eight-month professional practice period in year 3 over semester 2 and the summer and are expected to spend around 400 hours in total on this course. This is in addition to work activities the employer will be setting. The SLICC will be planned to cover the group of graduate apprenticeship students working with a specific employer and the work will directly link to their own contexts in the workplace. The main topics are: the application of data science tools and techniques, developing an understanding of the application of machine learning, statistical modelling and algorithms to solve business problems. In addition, this course covers the meta skills required to operate in a professional environment including graduate attributes for: lifelong learning, aspiration and personal development, outlook and engagement, research and enquiry, personal and intellectual autonomy, personal effectiveness and communication in both university and the workplace. The year 3 taught courses in computing and mathematics, particularly those in statistics and machine learning are applied to real world data science problems and projects. Students will be directed in their learning using the Student-Led Individually Created Course (SLICC) approach. They will plan, propose, carry out, reflect on and evaluate a data analysis study from their own work context in data analytics. The SLICC framework requires that students use the generic learning outcomes to articulate their learning in their own defined project, reflect frequently using a blog, and collect and curate evidence of their learning in an e-portfolio. They receive relevant formative feedback on a Midway Reflective Report, which is the same format as the Final Reflective Report, which forms the summative assessment. All this is with the guidance of a professional practice academic tutor. The course will encourage appraisal of students' own practical experiences and allow them to reflect on their learning in the context of data analytics.

Course Outline

College & School	College of Science and Engineering School of Informatics	Course Availability	Not available to visiting students
SCQF Credit Level	SCQF Level 10 (Year 3 Undergraduate)	Subject Area(s)	Informatics
SCQF Credit Volume	40	ECTS Credit Volume	20

Enrolment Requirements

Graduate apprenticeship students must have completed all year 1 and 2 core courses of the Graduate Apprenticeship in Data Science, and year 3 compulsory courses including:

Pre-Requisites	Work-based Professional Practice A in Data Analytics (course code tbc) Introductory Applied Machine Learning INFR10069 Algorithms and Data Structures INFR10052 Statistical Methodology MATH10095
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Co-Requisites None

Prohibited Combinations None

Visiting Student Information

Pre-Requisites None

As this is just a proposal, there is no delivery information yet. Instead, here are the proposed details related to delivery.

Total contact hours 210

Default delivery period Flexible

Components of Assessment

Written Exam 0 %, Practical Exam 0 %, Coursework 100 %

A SLICC is assessed via three key components, a self-reflective report, an agreed portfolio of outputs and a formative self-assessment.

Self-critical & Final Reflective Report (100% weighting) - The reflective report is the key component of your assessment. You are expected to document and demonstrate active self-critical reflection and responses to your learning throughout your experience. It is essential that your report is linked to and draws upon your e-portfolio of evidence of your learning. Maximum word limit is 3000 words.

E-portfolio of evidence - At the proposal approval stage for your SLICC, your tutor/advisor will discuss and agree with you what outputs and information need to be created, collated and submitted in your portfolio. This e-portfolio will support and provide evidence for your learning and development of skills throughout your SLICC. Your portfolio should be constructed throughout the duration of your learning experience, demonstrating evolution, iteration and progress over-time. It must include a regular reflective blog diary. It may contain other evidence, which may take many forms including photographs, documents, reports, feedback, video, podcasts, etc.

Formative Self-Assessment - An important component of your final submission, in addition to your

Commented [MV1]: Note that pre-requisites must have been taken (or currently enrolled on in the case of work based learning course A), but not necessarily passed yet.

Commented [VM2]: Should Work-based professional practice A be a pre-requisite or a Co-Requisite? Both courses set up as Flexible and are assessed in Year 3 of DPT (course A technically in Semester 1) and course B Semester 2 and summer.

Commented [MV3]: What are the teaching contact hours? Lectures/tutorials etc?

Commented [VM4R3]: Tony Venus noted: As this is WBL we need to fit to the established terminology - 110 was the total of pre WBL preparation and then in company support etc - Is this ok or should we reduce the 'contact' to a more manageable size and make the rest of the time elsewhere or not at all?

Commented [MV5]: Are we happy to put flexible? No other option really fits, e.g.
Semester 2
Full Year
Block 5 (Sem 2)
Block 5 (Sem 2) and beyond

ability to self-critically reflect on your experience, is to demonstrate your understanding of your achievements through graded self-assessment. In your self-assessment you are required to demonstrate the alignment of the grades given by you for each learning outcome to the justification for them, and where this is evidenced within your portfolio.

Exam information

No examination

Learning Outcomes

On completion of this course, the student will be able to:

1. Demonstrate an understanding of the cross-disciplinary nature of data science, and the complexities, challenges and wider implications of the contexts in which data science problems occur in the workplace
2. Draw on and apply relevant data science approaches, tools and frameworks for data enquiry to different settings in real world situations;
3. Draw on and apply relevant data science approaches, tools and frameworks for data enquiry to different settings in real world situations;
4. Frame and address data science business problems, questions and issues as a data study project, being aware of the environment and context in which the problem exists;
5. Review, evaluate and reflect upon knowledge, skills and practices in data science.

Reading List

Bolton, G. 2010. *Reflective Practice: Writing and Professional Development*. 3rd Ed. London: Sage

Boud, D., Keogh, R. and Walker, D. 2005. *Reflection: Turning Experience into Learning*. Oxon: Routledge Falmer

Fook, J. and Gardner, F. 2007. *Practising critical reflection : a resource handbook* Maidenhead: Open University Press

Kolb D.A. 1984. *Experiential learning : experience as the source of learning and development* New Jersey: Prentice Hall

Moon, J.A.. (2006). *Learning journals: a handbook for reflective practice and professional development* (2nd edition). Abingdon: Routledge. Mumford, J. and

Roodhouse, S. (eds.) (2012). *Understanding work based learning*. Farnham: Gower.

Tarrant, P. (2013). *Reflective practice and professional development*. London: SAGE

Williams, K., Woolliams, M. and Spiro, J. 2012. *Reflective writing* Basingstoke: Palgrave Macmillan

Additional Information

Graduate Attributes, Personal and Professional Skills Development of graduate attributes are a key component of a graduate apprenticeship. In this course there is specific reference to the development and application of skills and attributes to engage effectively on data analysis issues in the workplace, including problem solving, communicating clearly and for reflective thinking.

Feedback Feedback will be provided via the work based learning tutor.

Graduate Apprenticeship, PwC

Keywords

The information below is **not displayed** on DRPS.

Organisation and Teaching Load

Contact Hours 210

Marking Scheme APT UG Honours Marking Scheme

Default Course Mode of Study Classes & Assessment excl. centrally arranged exam

Fee Code *Not applicable*

% not taught by this institution 0%

Collaboration Information (School/Institution) This course forms an integral part of the Graduate Apprenticeship in Data Science and must be employer based (collaboration for 2018/19 with PwC).