Discussion

Context: Overall contribution and target audience

Professional Issues is a required 3rd year undergraduate course for all students on Informatics-led programmes, providing many of the non-technical graduate attributes of our degrees and qualifying students for accreditation in the British Computing Society. Much of the material currently taught in this course are being taught earlier starting semester 2 20/21, in Software Engineering and Professional Practice, as the next stage in the Undergraduate Curriculum update. As a result, Professional Issues needs an update itself.

Existing PI materials are structured around the ACM Code of Ethics and Professional Conduct, primarily Section 2 "Professional Responsibilities". Our proposal is to update the course to build off the foundation of these being covered in SEPP and cover the more challenging material in Sections 1 "General Ethical Principles" and 2 "Professional Leadership Principles".

SEPP will inherit rules and frameworks-based topics of organisations, finance, law and regulation, while PI will expand upon existing coverage of the less clear-cut topics of personal attributes, social and ethical issues, and leadership. We would hope to further develop graduates with the maturity to identify, reason about, and communicate complex issues.

Anticipated Resource Requirements

A discussion tutorial format, where students split into groups then report back to the whole, would probably allow for larger than average tutorial groups. Assuming 20 person tutorials, once a week for 10 weeks, works out at 110 tutor hours for the current ~220 student cohort (0.5 per student).

A standard TA contract (~100 for a very large course) would help with producing tutorial materials, coordinating the peer marking component and encouraging discussion threads on the course message board.

Marking will involve reading 3 (negotiable) short essays per student. This is estimated to take between 30 minutes and an hour per student. This could be increased to give formative feedback on one essay earlier in the semester.

Tutors and Markers could be the same people, and I would be inclined to recruit them from Philosophy or STIS based on their ability to encourage and moderate discussion, and assess written work.

Narrative description of the course aims and structure

The main goal of the updated Professional Issues is to develop an awareness and understanding in our undergraduates of the powerful place computer science holds in the modern world. Beyond learning what rules and expectations apply to them as professional computer scientists, we aim to give them practice in reasoning over and communicating complex issues where clear answers may not be forthcoming.

The course will be based heavily around weekly tutorial discussions where students have prepared from reading materials beforehand, which is presented by a rotating selection of them, and then will be divided into smaller groups to present and discuss different aspects or viewpoints on the week's topic.

Students will also be writing regular (fortnightly) short essay blog posts on provided topics, which they will be asked to peer review as part of their assessment. Taking advantage of this feedback, they can then revise and submit a selection of their strongest essays for the main assessment.

This structure is designed to give students as much opportunity to practice and receive feedback on their discussion of complex subjects, while giving them plenty of time to improve before being assessed on it.

Graduate Attributes, Personal & Professional Skills

Problem-solving, critical/analytical thinking, handling ambiguity, independent learning, self-awareness and reflection, verbal and written communication, cross-cultural and cross-disciplinary communication.

Descriptor

Highlighting indicates major changes

Undergraduate Course: Professional Issues (Level 10) (INFR10022)

Course Outline

School	School of Informatics	**College**	College of Science and Engineering
Credit level (Normal year taken)	SCQF Level 10 (Year 3 Undergraduate)	**Availability**	Available to all students
SCQF Credits	10	**ECTS Credits**	5
Summary	The aim of the course is to highlight and allow students to develop understanding of key aspects of the wider context in which their practice as Informatics professionals will occur. Students will develop individual capabilities that complement the technical capacities developed elsewhere in Informatics programmes. These include communication, reflection, reasoning and analysis skills that consider the broader ethical and social implications of their work.		
Course description	The course will be structured around professional and ethical behaviour, and the wider context in which technologies are developed and deployed. Beginning with the ACM Code of Ethics and Professional Conduct, the course will consider the wider context technologies are developed within and teach students to be considerate in their role as ICT professionals.		

	A standard breakdown of the course can be expected to be: • Introduction (week 1 - gives an overview of the course) • Responsibility (2 weeks, ACM principles 1.1, 1.2, 1.4): this will cover the responsibility of computing professionals. It will explore the notion of harms in the context of complex, multi-stakeholder situations, where benefit and harm are contested. • Personal Attributes (2 weeks, ACM principles 1.3, 1.5, 1.6 and 1.7): this will cover personal attributes and why these are important by covering a range of situations that challenge professional integrity and work out how to respond to such challenges. • Society (3 weeks, ACM principles 3.1, 3.2, 3.6 and 3.7) this will cover the obligations of computing professionals to recognise broader social requirements on their actions, particularly in areas where decisions involve the creation of new infrastructures that will underpin the delivery of public services or they are likely to be incorporated into widely used privately owned platforms. • Leadership (2 weeks, ACM principles 3.3, 3.4 and 3.5) this will cover leadership amongst computing professionals, the obligations on leaders to ensure their leadership is fair and benefits those who are being led. This section will include a reflection on how these materials are taught. The course will use articles and research from the social sciences, alongside short case studies drawn from contemporary situations that illustrate how knowledge of the decision-making context influences professional conduct and decision taking. Students will develop analytical skills to identify the critical influences on professionals in a range of real-world situations.

Entry Requirements (not applicable to Visiting Students)

Pre-requisites		**Co-requisites**	
Prohibited Combinations	Students MUST NOT also be taking Informatics Research Proposal (INFR11071) AND Informatics Project Proposal (INFR11147)	**Other requirements**	This course is open to all undergraduate Informatics students including those on joint degrees. For external students where this course is not listed in your DPT, please seek special permission from the course organiser (lecturer).

Information for Visiting Students

Pre-requisites	Visiting students are required to have comparable background to that assumed by the course prerequisites listed in the Degree Regulations & Programmes of Study. If in doubt, consult the course organiser (lecturer).

High Demand Course?	Yes

Course Delivery Information

Academic year 2019/20, Available to all students (SV1)	Quota: None			
Course Start	Semester 1			
Timetable	Timetable			
Learning and Teaching activities (Further Info)	Total Hours: 100 (Lecture Hours 20, Seminar/Tutorial Hours 20, Summative Assessment Hours 20, Programme Level Learning and Teaching Hours 2, Directed Learning and Independent Learning Hours 38)			
Assessment (Further Info)	Coursework 100%			
Additional Information (Assessment)	The summative coursework assessment will comprise the following: - Short essay portfolio (80%) - Peer writing review (10%) - Discussion contributions (10%)			
Feedback	Not entered			
Exam Information				
Exam Diet	Paper Name	Hours & Minutes		

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Main Exam Diet S1 (December)		N/A		
Resit Exam Diet (August)		N/A		

Learning Outcomes

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

1. Identify a range of professional and unprofessional behaviour in ICT-related contexts and recommend remedial action.
2. Identify broader social and ethical considerations influencing the work of ICT professionals and how their work might be mindful of these.
3. Identify legitimate interests of broader society in computing systems and suggest approaches incorporating these into development.
4. Identify potential harms and benefits of the interventions of computing professionals, considering different stakeholder viewpoints and frameworks.
5. Identify examples of good and poor leadership and suggest leadership approaches which themselves encourage and uphold professional conduct.

Reading List

- Professional Issues in Information Technology, 2nd Edition, Frank Bott, BCS Learning & Development Limited, 2014.
- ACM Code of Ethics and Professional Practice
- BCS Code of conduct

See the Leganto reading list, this contains weekly supporting readings for the course:
https://eu01.alma.exlibrisgroup.com/leganto/public/44UOE_INST/lists/25981305180002466?auth=SAML

Commented [GJ1]: Need to consider what new texts could be added to the reading list

Additional Information

Course URL	<this should be the LEARN reference>

Graduate Attributes and Skills	Not entered
Keywords	Not entered

Detailed learning objectives in SQA-speak are:

Knowledge and Understanding (K and U)	SCQF Level 10 Know a range of concepts of “professional”, relevant codes of practice and understand how this influences practice. Know typical legal frameworks around the establishment of commercial legal entities and typical legal frameworks that control the operations of ICT-based companies. Know typical approaches to company organization and management and understand the benefits and disadvantages of different approaches. Know the definition of intellectual property and typical approaches to protection and understand how these considerations influence organisations approach to intellectual property. Know the structure and implementation of typical computing projects and products and understand the role of stakeholders, requirements etc in shaping projects and products including project risk.
Practice: Applied Knowledge and Understanding	SCQF Level 10 Identify, examine, reflect upon and propose solutions to issues arising from the interests of stakeholders, organizational, legal, social and ethical concerns. Apply knowledge of professional behaviour to correctly identify professional and unprofessional practices, and identify professional responses in given situations. Apply knowledge of intellectual property to be able to identify violations of intellectual property ownership and recommend approaches to the protection of IP in given circumstances. Identify potential security issues and other risks arising from the broad context of the use of systems and suggest the means to mitigate risks in those contexts.
Generic Cognitive skills	SCQF Level 10 Understand the structure of coherent arguments and develop this to be able to identify flaws in arguments and to be able to construct sound arguments from evidence. Research, analyse and evaluate issues on relevant topics. Undertake critical analysis, evaluation and synthesis of ideas, concepts and information. Review the work of colleagues in a collegial and positive manner.

Communication, ICT and Numeracy Skills	SCQF Level 10 Communicating about socio-technical issues in a manner that is comprehensible to a non-technical person. Use a range of research skills to gather knowledge and present solutions. Use a range of ICT applications and devices to support and enhance work.
Autonomy, Accountability and Working with others	SCQF Level 10 Be aware of the structure and organization of effective small project groups and be an effective contributor within such a group.