

# COMP0135: Professional Practice (Academic Year 2018/19)

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53 items

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## Fundamentals (6 items)

You should read and familiarise yourself with the elements here as part of your basic professional preparation

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### British Computer Society Code of conduct (i.e. professional ethics)

[Webpage](#) | Essential

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**Licensing professional software engineers** - in Communications of the ACM, by Phillip A. Laplante, 2014-07-01

[Article](#) | Essential | This article is essential reading in terms of your professional awareness and the way in which software engineers may or may not be able to demonstrate their competence.

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**Should software engineers be licensed?** - in Communications of the ACM, by John C. Knight; Nancy G. Leveson, 2002-11-1

[Article](#) | Essential | Another excellent paper giving an overview of issues in professional licensing.

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**An international perspective on U.S. licensure of software engineers** - in IEEE Technology and Society Magazine, by Phillip A. Laplante, 2013-21

[Article](#) | Essential | Another related article on licensing looking at a non-US perspective.

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**Guide to the GDPR**, 2018

[Webpage](#) | Essential

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**Professional issues in information technology**, by Frank Bott, 2014

[Book](#) | Essential | This is a good overview of many aspects of professionalism in IT. Chapters 5-8 are perhaps less relevant to this particular module but could be worth reading anyway.

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## Current Awareness (9 items)

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**The role of Artificial Intelligence in Software Engineering** - in 2012 First International Workshop on Realizing AI Synergies in Software Engineering (RAISE), by Mark Harman, 2012-06

[Article](#) | Essential | Although a few years old, this paper sets out a good overview of AI in Software Engineering applications, something that is increasingly important as machine learning is beginning to be used in real software engineering applications.

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**Finding and fixing software bugs automatically with SapFix and Sapienz - Facebook Code**

[Webpage](#) | Essential | A real and recent example of AI in Software Engineering.

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**The Register: Sci/Tech News for the World**

**Website** | **Essential** | A good current IT news site, somewhat UK/Europe centric.

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**News and analysis for UK IT directors, CTOs and CIOs - Computing**

**Website** | **Essential** | Another very long standing site (formerly weekly paper).

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**ComputerWeekly.com | Information Technology (IT) News, UK IT Jobs, Industry News**

**Website** | **Essential** | A very long standing weekly IT news site (formerly a paper).

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**SD Times - Software Development News**

**Website** | **Recommended** | Site for software development news.

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**Slashdot**

**Website** | **Recommended** | Technology news site - very broad coverage and less IT-industry specific, but you'll find lots of contrasting views here.

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**IT Jobs Watch, Tracking the IT Job Market**

**Website** | **Optional** | IT job market tracking site.

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**Software engineering best practices: lessons from successful projects in the top companies**

, by Capers Jones, c2010

**Book** | **Optional** | A book on best practice by an authority in the field. Bear in mind though that the field moves fast and this edition is from 2010 so some aspects may be less current than they were at publication.

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**Project Management** (38 items)

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**Accelerate**, by Jez Humble; Gene Kim; Nicole Forsgren, 2018

**Book** | **Recommended**

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(2017-18 onward) **The DevOps Handbook: How to Create World-Class Agility, Reliability, & Security in Technology Organisations**, by Gene Kim; Jez Humble; Patrick Debois; John Willis, 2016

**Book** | **Optional**

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(2017-18 onward) **The Art of Business Value**, by Mark Schwartz, 2016

**Book** | **Recommended**

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(2017-18 onward) **Decision-Centric Architecture Reviews** - in IEEE Software, by Uwe van Heesch; Veli-Pekka Eloranta; Paris Avgeriou; Kai Koskimies; Neil Harrison, 2014-1

**Article** | **Essential**

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(2017-18 onward) **High-performing teams: A timeless leadership topic | McKinsey & Company**, by Scott Keller; Mary Meaney, June 2017

**Webpage** | **Essential**

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**Being Agile: Eleven Breakthrough Techniques to Keep You from "Waterfalling Backward"**, by Leslie Ekas; Scott Will, 2013

**Book** | **Recommended** | This is ideal if you wish to read a short book covering teamwork and recent effective practices in development. It emphasises ground rules for working as a team early on.

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**Lean-Agile Software Development: Achieving Enterprise Agility (Net Objectives Lean-Agile Series)**, 22 Oct. 2009

**Book** | **Optional** | This is an excellent up-to-date book covering approaches that are equally applicable to other technology domains and research and outlines current ideas on lean and agile planning, coping with emergent design and goals.

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**Google: how Google works**, by Eric Schmidt; Jonathan Rosenberg; Alan Eagle; Larry Page, March 2017

**Book** | **Optional** | If you read one book to help you progress in your career I suggest you read this one. It emphasises that when Google appoint, they are looking for technologists and programmers who have demonstrated they have helped the team to succeed even when they are not the designated leader.

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**Succeeding with agile: software development using Scrum**, by Mike Cohn, c2010

**Book** | **Optional** | This has a detailed explanation of how to transition from the traditional roles of project manager to roles outlined to Scrum. The key point of this book is that the team agree a process and the ScrumMaster then acts as a coach to facilitate what has been agreed is carried out. The highest level of commitment is where the individuals in a team volunteer to take on tasks. Just as much a project and team building book as an authoritative outline of the agile method Scrum.

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**User stories applied: for agile software development**, by Mike Cohn, c2004

**Book** | **Recommended** | Helps teams understand the context and describe what stakeholders want in software development projects.

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**Project management, planning and control: managing engineering, construction and manufacturing projects to PMI, APM, and BSI standards**, by Albert Lester, c2014

**Book** | **Essential** | One of the most comprehensive project management books available. The chapter "Agile Project Management" is required reading prior to lectures 3.

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**Lean Enterprise: How High Performance Organizations Innovate at Scale (Lean (O'Reilly))**, by Jez Humble; Joanne Molesky; Barry O'Reilly, 3 Jan. 2015

**Book** | **Optional** | One of the main messages is decouple deployments (blue-green deployment) and release to lower risk in development.

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**Managing Agile Projects**, by Sanjiv Augustine, 2005

**Book** | **Optional** | Excellent outline of software project management, including team structures.

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**Software architecture in practice**, by Len Bass; Paul Clements; Rick Kazman, c2003

**Book** | **Recommended** | Award winning book that covers architecture views in-depth.

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**Reflections on management**, by Watts S. Humphrey, 2010

**Book** | **Optional** | Watts is well known for his books on software development but this shows an in-depth understanding of the human dimension. Although my lectures cover many management authors, this short book that will help you with your projects, your team and your boss as well as managing yourself. Another excellent book by Watts is his book covering the SEI team approach to software engineering, Introduction to the Personal Software Process, SEI Series in Software Engineering, Addison Wesley, 2005, which I cite in lectures.

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**Rethinking project management: an organisational perspective**, by Erling S. Andersen, 2008

**Book** | **Optional** | Many books on project management outline the tasks a project manager has to complete. This book puts the role into a wider context and covers the many conflicting dilemmas a project manager has to deal with. If you are only going to read one project management text I would recommend this one. Alternative books as an introduction to project management would be Trevor L Young Successful Project Management, Kogan Page Third Edition 2010, which is a short book with an emphasis on success factors.

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**Software engineering best practices: lessons from successful projects in the top companies**, by Capers Jones, c2010

**Book** | **Recommended** | Effective practices in development and project management, as well as why traditional approaches to software quality are often ineffective.

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**How to manage project opportunity and risk: why uncertainty management can be a much better approach than risk management**, by C. B. Chapman; Stephen Ward; C. B. Chapman, 2011

**Book** | **Optional** | The importance of assessment of risk and opportunity at each phase of the project is stressed. The lecture on risk will make reference to this book as well as books by Taleb.

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**Fooled by randomness: the hidden role of chance in life and in the markets**, by Nassim Taleb, 2007

**Book** | **Recommended** | Provides a detailed explanation of probability in relation to what appears to be random events. I would particularly recommend the FSE students read this book.

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**Beautiful code**, 2007

**Book** | **Optional** | An excellent book; covering the thinking behind selection of code, languages and approaches in the past, especially the chapter outlining how NASA chose a low risk approach by adopting SOA.

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**The balanced scorecard: translating strategy into action**, by Robert S. Kaplan; D. P. Norton, c1996

**Book** | **Optional** | This is a seminal book with a central theme that business and project managers should consider not just financial measures but the wider benefits of customer satisfaction, team working and learning as well as improved business processes. I will cover this book in detail in the lectures and also cover authors and researchers have extended the context to fully understand the goals and ensure that key stakeholders are brought into the process.

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**Key performance indicators**, by Bernard Marr, 2012

**Book** | **Optional** | This book is based on the concepts outlined by Kaplan and Norton but in a succinct ways gives simple examples of commonly used KPIs in project reports. This book will be supplemented with examples for KPIs to evaluate web-sites and examples relevant to cloud technologies and your research projects.

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**Thinking, fast and slow**, by Daniel Kahneman, 2011

**Book** | **Recommended** | This insightful book has numerous examples and explanations of human behaviour relevant to business. Reading this book you will realise why people are more worried about loss than gain; important if you are preparing a product pitch or project presentation. Ensure you cover challenges as well as opportunities!

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**CMMI for Development, Version 1.3 (Technical Report CMU/SEI-2010-TR-033)**, by CMMI Product Team, 2010

**Document** | **Recommended** | A particularly useful checklist of things you may like to consider in your project report. Outline of the value of this document will be briefly introduced in the first lecture, during the risk lecture covering causal analysis and last lecture, which covers process improvement.

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**Coordination in co-located agile software development projects** - in Journal of Systems and Software, by Diane E. Strode; Sid L. Huff; Beverley Hope; Sebastian Link, 2012-06

**Article** | **Essential** | The case studies are required reading for lecture 2.

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**Agile Project Management** - in Project Management, Planning and Control, by Graham Collins, 2017

**Chapter** | **Recommended** | in Lester, A., Project Management Planning and Control, Chapter Appendix 1, pp.523-538, Elsevier 2014. The pdf for this chapter will be provided within the course website.

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**Microservices**, by James Lewis; Martin Fowler

**Webpage** | **Recommended**

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**A Classification of Value for Software Architecture Decisions** - in Software Architecture, by Ulrik Eklund; Thomas Arts, edited by Muhammad Ali Babar; Ian Gorton, 2010

**Chapter** | **Recommended** | Recommended reading for lecture 5.

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**Enabling Agility Through Architecture**, by N Brown; R.L. Nord; I. Ozkaya, 2010

**Document** | **Recommended** | Recommended reading for lecture 5.

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**A search based approach to fairness analysis in requirement assignments to aid negotiation, mediation and decision making** - in Requirements Engineering, by Anthony Finkelstein; Mark Harman; S. Afshin Mansouri; Jian Ren; Yuanyuan Zhang, 2009-12

**Article** | **Recommended** | Suggested reading for lecture 6 trade-offs and optimisation, first two pages.

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**October, 2014 - Insufficient data from Andrew Fryer - Site Home - TechNet Blogs**

**Webpage** | **Recommended** | Machine Learning web page suggested reading for lecture 7. Check you know why area under curve (AUC) is important, although receiver operating characteristic (ROC) curves and AUC will be covered during the lecture.

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**Understanding Joint Confidence Level (JCL) at NASA**, by NASA

**Document** | **Recommended** | Lecture 8 resources covering risk.

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**Appendix J - Joint Cost and Schedule Confidence level (JCL) Analysis** - in NASA Cost Estimating Handbook Version 4.0, 2015

**Chapter** | **Recommended** | Lecture 8 resources covering risk.

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**A use-case for behavioral programming: An architecture in JavaScript and Blockly for interactive applications with cross-cutting scenarios** - in Science of Computer Programming

, by Adiel Ashrov; Assaf Marron; Gera Weiss; Guy Wiener, 2015-02

**Article** | **Optional**

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**UI in an Agile Process - The Quick 'n' Dirty Approach in the Real World**

**Webpage** | **Optional**

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**Lastminute.com energises product discovery and development**

**Document** | **Optional**

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**Personas** - in <https://www.usability.gov/>, by U.S. Department of Health & Human Services

**Webpage** | **Recommended**

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**Inclusive Design Toolkit Home**

**Webpage** | **Recommended**