Title:	Open Source Projects APPROVED
Long Title:	Open Source Projects

Module Code:	COMP7047	**Duration:**	1 Semester

Credits:	15
NFQ Level:	Intermediate
Field of Study:	Computer Science
Valid From:	Semester 1 - 2017/18 (September 2017)
Module Delivered in	5 programme(s)
Module Coordinator:	Donna OShea
Module Author:	Donna OShea
Module Description:	Open source projects promote transparency and collaboration by making the source code, documentation and other elements of the project available providing better understanding on how the project or software works. Individuals can contribute to the project by fixing bugs, adding new features, fixing documentation and making changes to the project. In this module, students will contribute to an open source project. As part of this community or project they will learn how typical open source projects are structured and will make contributions to the project by raising issues, fixing bugs, testing, documenting or suggesting new features.

Learning Outcomes	
On successful completion of this module the learner will be able to:	
LO1	Discuss the underlying principles and the benefits of contributing to open source projects.
LO2	Understand the typical structure of an open source project by identifying: the community owner, maintainers, contributors and members; the documentation; and licencing.
LO3	Evaluate various open source projects and select an open source project to contribute to.
LO4	Identify how to contribute and connect to the open source project and workflow procedures to enable contribution.
LO5	Use tools for contributing to open source projects allowing changes to be made without affecting the original open source project.
LO6	Contribute to the open source community by writing software, documentation or scripts that interacts with the existing open source systems.
LO7	Work collaboratively with fellow students and members of the open source project by contributing to the project in a meaningful way.

Pre-requisite learning
Module Recommendations *This is prior learning (or a practical skill) that is strongly recommended before enrolment in this module. You may enrol in this module if you have not acquired the recommended learning but you will have considerable difficulty in passing (i.e. achieving the learning outcomes of) the module. While the prior learning is expressed as named CIT module(s) it also allows for learning (in another module or modules) which is equivalent to the learning specified in the named module(s).*
No recommendations listed
Incompatible Modules *These are modules which have learning outcomes that are too similar to the learning outcomes of this module. You may not earn additional credit for the same learning and therefore you may not enrol in this module if you have successfully completed any modules in the incompatible list.*
No incompatible modules listed
Co-requisite Modules
No Co-requisite modules listed

Requirements *This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed. You may not enrol on this module if you have not acquired the learning specified in this section.*
No requirements listed
Co-requisites
No Co Requisites listed

Module Content & Assessment

Indicative Content
Open Source Projects What are open source projects and software. Advantages and disadvantages of open source. Licencing of open source projects. Code of conduct. Differences between open source project and other types of projects. Licencing - BSD, GPL, LGPL, MIT, Apache, MPL. Markdown and open licencing. How open source is been used as a recruitment tool for companies i.e. Facebook, Twitter etc.
Contribution methods to Open source projects Bug reports. Feature requests. Software testing. Documentation writing i.e. wiki pages, FAQ etc. Translation of user interface. Forums and mailing lists. Design tasks - logo, website, interfaces. Project promotion. Bug fixing. Feature Development.
Structure of Open Source Projects Participants in the community - community owner, maintainers, contributors, members. Common files that exist in every Open source project - readme.md, licence.md, contributing.md. Workflow procedures to contribute to community.
Selecting an Open Source Project Categories of open source projects. Criteria to consider when choosing an open source project to contribute to. Examples of Open Source Projects which include software and non software projects- Redis, React.js, node.js, bower, Grunt, Firefox, MongoDB, Android, Git, Linux, Bash etc.
Connecting with Open Source Communities Moznet, Freenode, irccloud, channels for communication. Rules of communication. Code of conduct.
Contributing to Open Source Projects Workflow procedures to contribute to community - create a repository, forking, branching, code/documentation/script writing, committing, pulling, rebasing. Typical command line tools and Integrated Development Environments (IDE) - GitHub, Git, Bash, Subversion, pip, virtualenv etc. Selecting a existing bug, identifying a bug, propose and develop a feature.

Assessment Breakdown	%
Course Work	100.00%

Course Work

Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Short Answer Questions	The students would be assessed on the theoretical elements presented in the module.	1,2	20.0	Week 3
Project	In this report the students would be expected to evaluate various open source projects and will select an open source project to contribute to, bearing in mind their own technical skill set and interests. In addition, they will have identified how to connect and communicate with their selected open source project.	3,4	20.0	Week 5
Reflective Journal	The student will reflect on their experience of learning about open source communities and their journey as novice contributor.	1,2,3,4,5,6,7	20.0	Every Week
Project	The student will employ tools, identify the contribution workflow and using this workflow will contribute to an open source community by fixing bugs, development of source or document or scripts etc.	1,2,3,4,5,6,7	20.0	Sem End
Presentation	The students will demo their project and will present their contribution to the peers and lecturer.	1,2,3,4,5,6,7	20.0	Sem End

No End of Module Formal Examination

Reassessment Requirement
Coursework Only *This module is reassessed solely on the basis of re-submitted coursework. There is no repeat written examination.*

The institute reserves the right to alter the nature and timings of assessment

Module Workload

Workload: Full Time				
Workload Type	*Workload Description*	*Hours*	*Frequency*	*Average Weekly Learner Workload*
Lecture	Lecture underpinning learning outcomes.	2.0	Every Week	2.00
Lab	Lab supporting content delivered in class.	2.0	Every Week	2.00
Independent & Directed Learning (Non-contact)	Independent Study.	17.0	Every Week	17.00
			Total Hours	21.00
			Total Weekly Learner Workload	21.00
			Total Weekly Contact Hours	4.00

This module has no Part Time workload.

Module Resources

Recommended Book Resources

- **Simon Phipps 2012, *Open Source Strategies for the Enterprise*, O'Reilly Media [ISBN: 9781449341176]**

Supplementary Book Resources

- **Ivan Cibrario Bertolotti, Tingting Hu 2015, *Embedded Software Development: The Open-Source Approach*, CRC Press [ISBN: 9781466593923]**

This module does not have any article/paper resources

Other Resources

- **Website: *First Timers Only***
  http://www.firsttimersonly.com/
- **Website: *The Seneca Centre for Development of Open Technology***
  https://wiki.cdot.senecacollege.ca/wiki/ Main_Page
- **Website: *OpenSource.com***
  https://opensource.com/
- **Website: *OpenHatch***
  https://openhatch.org/
- **Website: *Bugzilla@Mozilla***
  https://bugzilla.mozilla.org/
- **Website: *How to Contribute to OpenStack***
  https://wiki.openstack.org/wiki/How_To_C ontribute
- **Website: *Rules for communicating at GitHub***
  http://ben.balter.com/2014/11/06/rules-o f-communicating-at-github/
- **Website: *Contributing to Open Source on GitHub***
  https://guides.github.com/activities/con tributing-to-open-source/
- **Website: *How to Start Contributing to Open Source***
  http://www.developer.com/open/how-to-sta rt-contributing-to-open-source.html
- **Website: *10 ways to contribute to an open source project without writing code***
  https://opensource.com/life/13/10/ten-wa ys-open-source-projects
- **Website: *Google Summer of Code***
  https://developers.google.com/open-sourc e/gsoc/
- **Website: *101 Open Source Tools for Developers***
  http://www.datamation.com/open-source/10 1-open-source-tools-for-developers-1.htm l
- **Website: *Teaching Open Source***
  http://teachingopensource.org/index.php/ Main_Page
- **Website: *Contributor Covenant A Code of Conduct for Open Source Projects.***
  http://contributor-covenant.org/

Module Delivered in

Programme Code	Programme	Semester	Delivery
CR_KSDEV_8	Bachelor of Science (Honours) in Software Development	6	Group Elective 3
CR_KDNET_8	Bachelor of Science (Honours) in Computer Systems	6	Group Elective 3
CR_KITMN_8	Bachelor of Science (Honours) in IT Management	6	Group Elective 3
CR_KITSP_7	Bachelor of Science in Information Technology	6	Group Elective 3
CR_KCOMP_7	Bachelor of Science in Software Development	6	Group Elective 3