**Web Application Development**

**Overview**

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| Level | 4 (Semester 1) |
| Duration | 4 weeks |
| Lectures | 10x40 minutes/week for 2 weeks |
| Practicals/tutorials | 5x2 hours/week for 3 weeks |

**Learning Outcomes**

Students will be able to:

1. Demonstrate the use of a Python web programming language development environment, a web framework such as Django, and version control system, such as VDI and GIT
2. Develop Web application designs using contemporary programming approaches and patterns, such as Agile Development, Model View Controller and Test-driven development.
3. Create Web applications in code using Python and contemporary web programming frameworks and APIs and database connectivity, in particular to mySQl
4. Apply mapping and visualisation features to a Django application.
5. Apply a suitable authentication system to a Django application
6. Apply suitable data parsing approach to populate a Rails application with open data
7. Solve technical and practical issues and challenges associated with developing Web applications.

**Syllabus**

1. Introduction to Web Application Development
2. Object oriented Programming for Designing Web applications
3. Introduction to Django and alternatives
4. File handling, Event handling, and Error handling
5. Data structures for web programming
6. Further OOP for the Web: Inheritance
7. Advanced programming for the internet, including searching, security, and plug-ins
8. Database-driven Web Applications
9. Database connectivity: Django and mySQL
10. Searching
11. Security
12. Implementing authentication
13. Plug-ins
14. Writing Attractive Applications and Programs
15. Test Driven Development for Python Web Applications
16. Deploying Python Web Applications with Git