# APPL: Web and Cloud Applications

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| **Module Title:** | Web and Cloud Applications |
| **Language of Instruction:** | English |

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| **Credits:** | 5 |

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| **NFQ Level:** | 7 |

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| **Module Delivered In** | 2 programme(s) |

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| **Teaching & Learning Strategies:** | Students will learn from lectures, lab work and projects. These will enable the student to learn and practice the various Database concepts, Web technologies and Cloud technologies presented. |

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| **Module Aim:** | To broaden the student's understanding of the use and administration of databases in Web applications with expansion to Cloud technologies. Students will gain competency in developing full stack applications that incorporate database access. |

| **Learning Outcomes** | |
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| *On successful completion of this module the learner should be able to:* | |
| LO1 | Setup, install and operate multiuser DBMS and their components both at GUI and command line; |
| LO2 | Construct and deploy a web application based on the client/server application model; |
| LO3 | Identify key concepts and technologies used in Cloud Computing environments |

| **Pre-requisite learning** |
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| ***Module Recommendations***<br>*This is prior learning (or a practical skill) that is recommended before enrolment in this module.* |
| No recommendations listed |
| ***Incompatible Modules***<br>*These are modules which have learning outcomes that are too similar to the learning outcomes of this module.* |
| No incompatible modules listed |
| ***Co-requisite Modules*** |
| No Co-requisite modules listed |
| ***Requirements***<br>*This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.* |
| 2nd year Web Programming & Databases or equivalent |

# APPL: Web and Cloud Applications

## Module Content & Assessment

| Indicative Content |
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| **Review : Database Theory and Objects**<br>Relational model (components and constraints), Data Modelling, Views |
| **Database DBMS**<br>Installation; Tools; Extended SQL (for data manipulation, data definition, data control); Catalog and data dictionary |
| **Data Security**<br>Access Controls, Cryptography ,Data Integrity & Verification, Vulnerabilities (SQL Injection, XSS) |
| **Database Concurrency**<br>Transactions, Concurrency Issues |
| **Web Development Infrastructure**<br>Client, server, content, protocol, client-side programming, server-side programming, Dynamic applications |
| **Data Management in the Cloud**<br>Cloud concepts, Services, Deployment, Examples |
| **Convergence of Web, Cloud & Database technologies**<br>XML, AJAX, JSON, APIs, Cloud based databases |

| Assessment Breakdown | % |
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| Project | 100.00% |

No Continuous Assessment

| Project | | | | |
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| *Assessment Type* | *Assessment Description* | *Outcome addressed* | *% of total* | *Assessment Date* |
| Project | Build a locally-hosted web application with database backend | 1,2 | 30.00 | Week 5 |
| Project | Take Home sheet : solve problems which will involve both application of material covered and further research | 1,2,3 | 30.00 | Week 8 |
| Project | Design, construct and deploy a Full stack application with API integration | 1,2,3 | 40.00 | Week 12 |

No Practical

No End of Module Formal Examination

**SETU Carlow Campus reserves the right to alter the nature and timings of assessment**

# APPL: Web and Cloud Applications

## Module Workload

| Workload: Full Time | | |
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| *Workload Type* | *Frequency* | *Average Weekly Learner Workload* |
| Lecture | 12 Weeks per Stage | 2.00 |
| Laboratory | 12 Weeks per Stage | 2.00 |
| Estimated Learner Hours | 15 Weeks per Stage | 5.13 |
| | Total Hours | 125.00 |

## Module Delivered In

| Programme Code | Programme | Semester | Delivery |
|---|---|---|---|
| CW_KCCIT_B | Bachelor of Science (Honours) in Information Technology Management | 5 | Mandatory |
| CW_KCCSY_D | Bachelor of Science in Information Technology Management | 5 | Mandatory |