## Next Generation Networked Hardware

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| *SMS Code* | IN722001 | *Directed Learning hours* | 60 |
| *Level* | 7 | *Workplace or Practical Learning hours* | 0 |
| *Credits* | 15 | *Self-Directed Learning hours* | 90 |
| Prerequisites | IN620001 or IN621001 | *Total Learning Hours* | 150 |
| *This course approved in another Programme: No* | | | |

***Aims***

To expose students to current and upcoming developments in the context of networked hardware and apply those in a project-oriented environment.

***Learning Outcomes***

At the successful completion of this course, students will be able to:

1. Demonstrate the application potential of the orchestrated use of embedded devices;
2. Select, adapt and apply selected hardware and software platforms and related communication protocols;
3. Demonstrate the principles of centralized and decentralized coordination;
4. Analyse security implications of networked embedded systems;
5. Design a solution for a given application context that takes coordination principles and security concerns into account;
6. Manage and participate in the development process using industry-relevant tools.

***Indicative Content***

* + Available hardware platforms for embedded computing
  + Constructing and programming embedded systems
  + Communication and coordination protocols
  + Internet of Things and related infrastructure
  + Case studies of smart applications

***Assessment***

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| **Assessment Activity** | **Weighting** | **Learning Outcomes** |
| Project work | 100% | All |

***Resources***

**Required:**

None

**Recommended:**

Text books and readings are administered as appropriate and updated to reflect ongoing conceptual and technological developments.