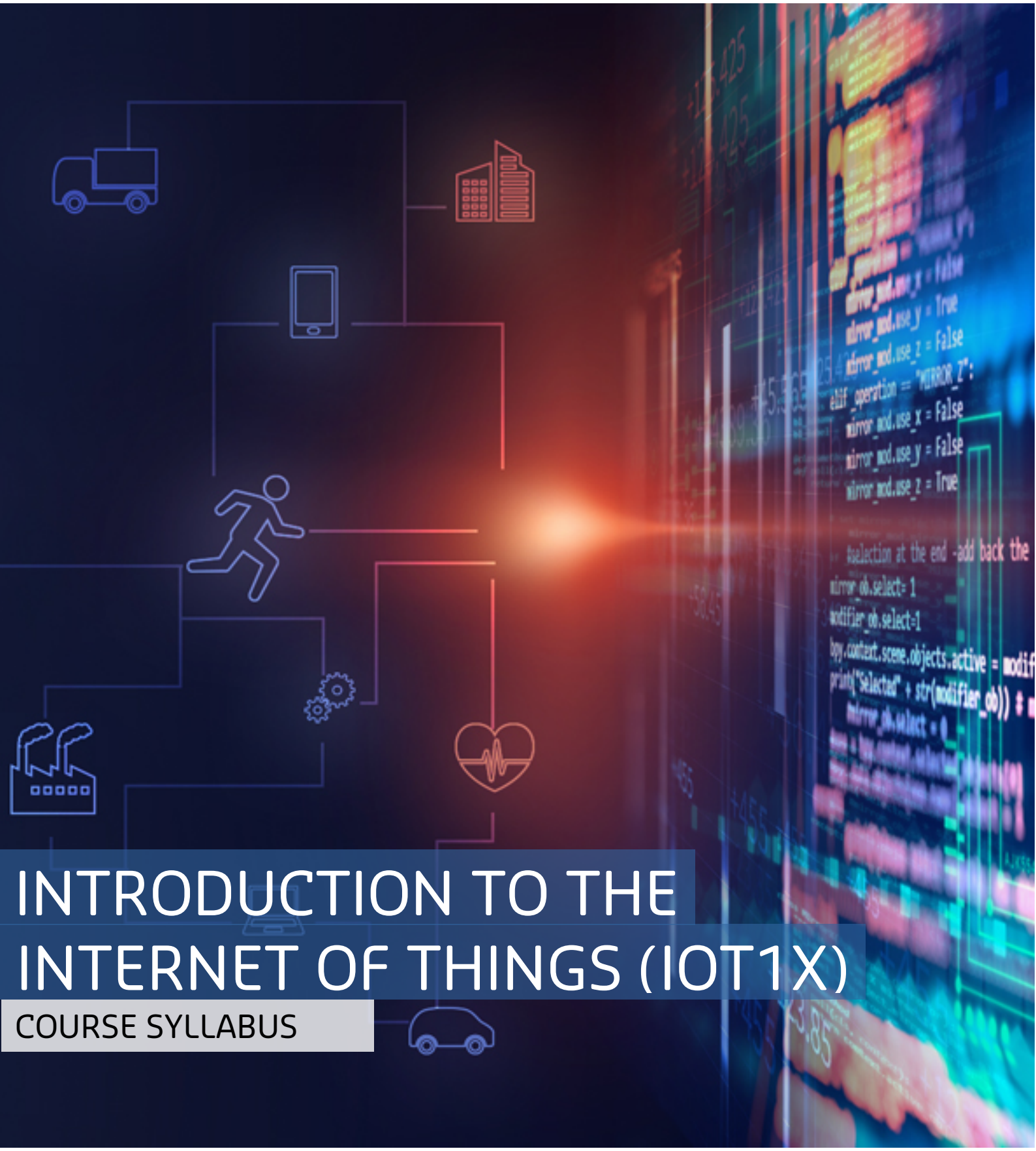

INTRODUCTION TO THE INTERNET OF THINGS (IOT1X)

COURSE SYLLABUS

MicroMasters in the Internet of Things (IoT)

Welcome

Welcome to the first course in our program: MicroMasters in the Internet of Things.

Complete, pass and earn a Verified Certificate in all six courses to receive your MicroMasters Credential.

- **IOT1x - Introduction to the Internet of Things (IoT) - *this course!***
- IOT2x - IoT Sensors and Devices
- IOT3x - IoT Networks and Protocols
- IOT4x - IoT Programming and Big Data
- IOT5x - Cybersecurity and Privacy in the IoT
- IOT6x - IoT Capstone Project

Entry Pathways

Learners who successfully earn the MicroMasters Credential are eligible to apply for admission to the Master of Engineering Science (Electrical Engineering) degree at Curtin University. If a learner applies for admission* to the Master of Engineering Science (Electrical Engineering) degree at Curtin University, and is accepted, the MicroMasters Credential will count towards 25% of the coursework required for graduation in the Curtin program.

The Master of Engineering Science (Electrical Engineering) is a 400 credit point qualification. If a learner applies for admission to the Master of Engineering Science (Electrical Engineering) at Curtin University, and is accepted, the MicroMasters credential will count towards 100 credits.

* Learners who wish to apply for MicroMasters credit for the Master of Engineering Science (Electrical Engineering) must also have completed a Bachelor's degree in Engineering.

IOT1x - Introduction to the Internet of Things (IoT)

Course Description:

The Internet of Things (IoT) is expanding at a rapid rate, and it is becoming increasingly important for professionals to understand what it is, how it works, and how to harness its power to improve business. This introductory course will enable learners to leverage their business and/or technical knowledge across IoT-related functions in the workplace.

In the course, we will examine the concept of IoT. We will look at the 'things' that make up the Internet of Things, including how those components are connected together, how they communicate, and how they value add to the data generated. We will also examine cybersecurity and privacy issues, and highlight how IoT can optimise processes and improve efficiencies in your business.

Course Objectives:

In this course you will:

- Be introduced to different aspects of the IoT, including end devices, networks, programming, and security and privacy implications
- Understand what constitutes an IoT design solution
- Start to grow the seeds of IoT ideas within your field and area of expertise

Pre-Requisites:

There are no pre-requisites for this course, however if you intend to apply for the MicroMasters in the Internet of Things credential, you will need to successfully complete all six IOTx courses to gain the certificate.

Time Commitment:

2 - 3 hours per module per week.

Your Instructors:

Professor Iain Murray, AM
Iain is an academic in the School of Electrical Engineering, Computing and Mathematical Sciences at Curtin University, specialising in networking, embedded systems and assistive technology. He received his B.Eng(Hons) and Ph.D. in Computer Systems Engineering from Curtin in 1998, and 2008, respectively. He is a Curtin Academy Fellow and was appointed a Member of the Order of Australia for his contributions to education in 2016.

Nazanin Mohammadi
Nazanin Mohammadi is a computer network and IT specialist in educational environments. She has been developing and delivering materials for computer systems and networking laboratories in the Department of Electrical and Computer Engineering at Curtin for the past 10 years.

In 2015, Nazanin received the Vice-Chancellor's Excellence Award in Innovation for design and implementation of the remote collaborative engineering laboratory environment. She is also amongst a few certified Cisco Networking Academy Instructor trainers in Australia.

Nazanin is actively engaged in developing new pedagogies in teaching science and engineering courses as part of her PhD research.

Course Syllabus:

This course consists of six modules. We estimate that you will need to spend at least **2-3 hours per week** on each module. Course content will be released week by week once the course begins.

Module 1: What in the world is the Internet of Things?

An introduction to what the Internet of Things is, and its scope to create efficiencies and increase safety.

Module 2: The 'things' of the Internet of Things

Introduction to the many 'end devices' that give the IoT the ability to physically sense and respond in different circumstances.

Module 3: Networking IoT

Introduction to the components of basic IoT networks, the types of network connections and how data travels through them, and the role of Internet Protocols.

Module 4: Programming IoT

Introduction to the types of programming required for IoT, and the types of data that IoT generates.

Module 5: Securing IoT

Introduction to the security and privacy implications of the Internet of Things.

Module 6: All together now

Introduction to design considerations for IoT, and what electronics are required for IoT prototyping.

Assessment Summary:

In order to successfully complete this course you must gain an overall mark of **70% or higher.**

This course consists of six assessments (5 module quizzes, plus a final quiz) as outlined below. You can find further details about assessment requirements within the **Assessment** section of the course.

Assessment Type	% of Final Grade	Due Date
Module quizzes (x 5)	5 x 15% = 75%	By the end of the course
Final quiz	25%	By the end of the course

Course Schedule:

Course content will be released week by week once the course begins.

Week	Topic	Assessment
1	Orientation Module 1: What in the world is the Internet of Things?	Module quiz 1
2	Module 2: The 'things' in the Internet of Things	Module quiz 2
3	Module 3: Networking IoT	Module quiz 3
4	Module 4: Programming IoT	Module quiz 4
5	Module 5: Securing IoT	Module quiz 5
6	Module 6: All together now	Final quiz