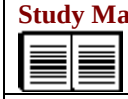
Level 5 Diploma in Internet Security (615) 177 Credits

Unit: Internet of Things (IoT) **Exam Paper No.:** 4	**Guided Learning Hours:** 200 **Number of Credits:** 20
Prerequisites: Basic networking concepts, social media and network protocol technology knowledge	**Corequisites:** Internet technology.
Aim: Internet of Things (IoT)is the collection of connected devices to the internet for the purpose of providing communication between entities. There are billions of devices that use sensors to collect data and interact intelligently with users; cars, mobile phones, doorbell technology etc. IoT interrelated devices include both mechanical and digital machines; including animals without need for human-to-human or human-to-computer interaction. For example, logistic sectors use IoT for faster and better efficient delivery services and decision-making. This includes the use of drones as well. Apart from creating career opportunities, IoT provides many advantages: • data and information science (analysis and analytics) • business strategies and compteitive market analysis from ecommerce platforms • understand safefy issues possed by connectivity to devices	
Required Materials: Recommended Learning Resources.	**Supplementary Materials:** Lecture notes and tutor extra reading recommendations.
Special Requirements: This is a hands-on unit, hence practical use of computers is essential. Requires intensive lab work outside of class time.	

Intended Learning Outcomes:	**Assessment Criteria:**
1. Understand the Internet of Things (IoT) concepts, terminology, applications and various interactions; including what it is and how it works.	1.1 Describe IoT 1.2 Identify IoT devices in different fields 1.3 Describe IoT risks 1.4 Describe IoT features 1.5 Demonstrate advantages and disadvantages of IoT 1.6 Be able to identify IoT hardware devices and IoT software
2. Understand the standard protocols and networking technologies associated with the functionality of IoT system; at the same ensuring data is constantly being captured, collected, sent, and analysed.	2.1 Describe different IoT protocols and networking technologies 2.2 Demonstrate uses of IoT in different industries 2.3 Describe the applications of IoT in media/advertising 2.4 Describe the use of IoT in environmental management and monitoring 2.5 Explain the importance of IoT in manufacturing 2.6 Describe how IoT can be used in Healthcare
3. Understand the use of IoT in connecting household applications and automation of lighting, security systems among other devices.	3.1 Describe how IoT is applied in transportation 3.2 Describe the benefits of IoT to education sectors.

4. Understand the platforms that deliver tools and technologies for rapid development of IoT solutions; including security vulnerabilities.	3.3 Demonstrate how IoT supports government projects, policies and applications 3.4 Describe how IoT enhances law enforcement applications 3.5 Demonstrate benefits of IoT to consumers 4.1 Identify IoT development components and interfaces. 4.2 Describe networking functionality and features of IoT. 4.3 Describe IoT cloud platforms 4.4 Describe the purpose of General Electric Predix platform 4.5 Describe IoT security vulnerabilities, challenges and privacy issues 4.6 Discuss liabilities associated to IoT
Methods of Evaluation: A 2½-hour written examination paper with five essay questions, each carrying 20 marks. Candidates are required to answer all questions. Candidates also undertake coursework/projects in Internet of Things (IoT).	

Recommended Learning Resources: Internet of Things (IoT)

Text Books	• Design of Internet of Things by Gunneswara VSSS Kalaga Rao. ISBN-13 : 978-1032300504 • Internet of Things (IoT): Principles, Paradigms and Applications by Dr Kamlesh Lakhwani, Dr Hemant Kumar Gianey , Joseph Kofi Wireko, Kamal Kant Hiran • Introduction to IoT by Sudip Misra, Anandarup Mukherjee, Arijit Roy
Study Manuals 	BCE produced study packs
CD ROM 	Power-point slides
Software 	N/A