WILMINGTON UNIVERSITY
COLLEGE OF TECHNOLOGY
BASIC COURSE INFORMATION

COURSE NUMBER:  SEC 465

COURSE TITLE:   Cyber Security and IoT

I.  MAJOR INSTRUCTIONAL OBJECTIVES:

Objective A: Explore microcomputers and sensors used in the Internet of things
A-1. Examine various IoT projects, the components used, the relationship of these
components and how they communicate

Objective B: Explain Blue Tooth Low Energy network protocol
B-1. Explain the different modes of communication between the client and server
B-2. Explain how device proximity is reported and used

Objective C: Build an IoT project employing the Raspberry Pi, Arduino or other
microcontroller platform, including sensor and network technology
C-1. Experiment with the capabilities of the Raspberry Pi, Arduino or other
microcontrollers
C-2. Explain network connectivity between the microcontroller and the Internet
C-3. Explain how sensors communicate to the microcontroller

Objective D: Examine various IoT vulnerabilities, such as the Distributed Denial of
Service (DDoS) attack from the fall of 2016
D-1. Describe best practices used in secure software development
D-2. Examine vulnerabilities in the Internet of Things, how they might be mitigated
and exploited

Objective E: Examine home networks for IoT network traffic and possible
vulnerabilities
E-1. Recognize the sources of wireless and wired network traffic with the home
network
E-2. Discuss tools and software applications that can be used to assess risks to the
wired and wireless networks within the home
E-3. Examine vulnerabilities introduced by the IoT to the home network
E-4. Question mitigation to be used to defend against such vulnerabilities

II.  CLASS PARTICIPATION:

Students are expected to actively engage in the class activities each week, whether the
class meets face to face, synchronously via web conferencing or asynchronously via
Slack, email or some other form of communication as agreed upon between the student
and instructor. Students will be expected to take the initiative to problem solve and to seek guidance as needed in a timely manner.