

## Department of Electrical and Computer Engineering

**TCN2720 - Introduction to Internet of Things, Fall 2022**

Instructor : Dr. Md Tauhidur  
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Tuesday 3:30 – 5:00 pm

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Section/Classroom/Time  
: RVC: Available through FIU Canvas

Web Page : <http://serlop.fiu.edu/>

**Catalog Description:**

Introduces the fundamental concepts of IoT and motivates the study of IoT. Focuses on the Devices, Data Collection, Networking, Cloud Computing, Risks and Opportunities in IoT context. (3 Credits)

**Textbook and Course Materials**

Title : IoT Fundamentals: Networking Technologies, Protocols, and Use Cases for the Internet of Things (Recommended)

Authors : David Hanes, Gonzalo Salgueiro, Patrick Grossetete, Robert Barton, Jerome Henry  
publisher : Cisco

publish date : 2017

ISBN 10 : 1587144565

**Course Objectives:**

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

- explain what “Internet of Things” term means;
- differentiate IoT from other technologies such as cyber-physical systems and sensor networks;
- enumerate and describe the fundamental components of IoT systems;
- state opportunities enabled by IoT;
- list a number of IoT application domains; and
- recognize risks, privacy and security issues related to IoT.

**ABET Relationship of course to program outcomes:**

(Select corresponding boxes below to applicable program outcomes for the course.)

- 1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
- 2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
- 3. an ability to communicate effectively with a range of audiences.
- 4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
- 5. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
- 6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
- 7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

<b>Grading Scale:</b>	the University's Code of Academic Integrity <a href="http://academic.fiu.edu/academic_misconduct.html">http://academic.fiu.edu/academic_misconduct.html</a>	
A	95-100	"Florida International University is a community dedicated to generating and imparting knowledge through excellent teaching and research, the rigorous and respectful exchange of ideas, and community service. All students should respect the right of others to have an equitable opportunity to learn and honestly to demonstrate the quality of their learning. Therefore, all students are expected to adhere to a standard of academic conduct, which demonstrates respect for themselves, their fellow students, and the educational mission of the University. All students are deemed by the University to understand that if they are found responsible for academic misconduct, they will be subject to the Academic Misconduct procedures and sanctions, as outlined in the Student Handbook."
A-	90-94	
B+	87-89	
B	83-86	
B-	80-82	
C+	77-79	
C	70-76	
D	60-69	
F	< 60	

**Department Regulations Concerning Incomplete Grades**

*To qualify for an Incomplete, a student:*

1. Must contact (e.g., phone, email, etc.) the instructor or secretary before or during missed portion of class
2. Must be passing the course prior to that part of the course that is not completed
3. Must make up the incomplete work through the instructor of the course
4. Must met the Instructor. All missed work must be finished before last two weeks of the following term.

**University policies:** on sexual harassment, and religious holidays, and information on ser-

vices for students with disabilities

<http://academic.fiu.edu>  
u/ <http://drc.fiu.edu>

### **Accessibility and Accommodation**

The Disability Resource Center collaborates with students, faculty, staff, and community members to create diverse learning environments that are usable, equitable, inclusive and sustainable. The DRC provides FIU students with disabilities the necessary support to successfully complete their education and participate in activities available to all students. If you have a diagnosed disability and plan to utilize academic accommodations, please contact the Center at (305) 348-3532 or visit them at the Graham Center GC 190.

For additional assistance please contact FIU's [Disability Resource Center](#).

Web Accessibility Statements for Partners and Vendors

- [Canvas](#)
- [Blocky-Games Google VAT](#)
- [Tinker-CAD](#)
- [Microsoft](#)
- [Adobe](#)
- [Google](#)
- [ProctorU](#)
- [HonorLock](#)
- [OpenStax](#)
- [Turnitin](#)
- [NBC Learn](#)
- [Adobe Connect](#)
- [Respondus LockDown Browser](#)
- [Zoom](#)

Please visit our [ADA Compliance](#) webpage for additional information about accessibility involving the tools used in this course

### **Academic Misconduct Statement**

Florida International University is a community dedicated to generating and imparting knowledge through excellent teaching and research, the rigorous and respectful exchange of ideas and community service. All students should respect the right of others to have an equitable opportunity to learn and honestly to demonstrate the quality of their learning. Therefore, all students are expected to adhere to a standard of academic conduct, which demonstrates respect for themselves, their fellow students, and the educational mission of the University. All students are deemed by the University to understand that if they are found responsible for academic misconduct, they will be subject to the Academic Misconduct procedures and sanctions, as outlined in the Student Handbook.

Academic Misconduct includes: **Cheating** – The unauthorized use of books, notes, aids, electronic sources; or assistance from another person with respect to examinations, course assignments, field service reports, class recitations; or the unauthorized possession of examination papers or course materials, whether originally authorized or not. **Plagiarism** – The use and appropriation of another’s work without any indication of the source and the representation of such work as the student’s own. Any student who fails to give credit for ideas, expressions or materials taken from another source, including internet sources, is responsible for plagiarism.

Learn more about the [academic integrity policies and procedures](#) as well as [student resources](#) that can help you prepare for a successful semester.

### **Panthers Care & Counseling and Psychological Services (CAPS)**

If you are looking for help for yourself or a fellow classmate, Panthers Care encourages you to express any concerns you may come across as it relates to any personal behavior concerns or worries you have, for the classmate’s well-being or yours; you are encouraged to share your concerns with [FIU’s Panthers Care website](#).

[Counseling and Psychological Services \(CAPS\)](#) offers free and confidential help for anxiety, depression, stress, and other concerns that life brings. Professional counselors are available for same-day appointments. Don’t wait to call (305) 348-2277 to set up a time to talk or visit the online self-help portal.

### **Course Prerequisites**

There are no prerequisites for this course.

### **Proctored Exam Policy**

There are no on-campus, proctored exams; all exams are administered fully online via Respondus Lockdown Browser.

Through a careful examination of this syllabus, it is the student’s responsibility to determine whether this online course requires proctored exams. Please visit our [Student Proctored Exam Instructions](#) webpage for important information concerning proctored exams, proctoring centers, and important forms.

### **Expectations of This Course**

This is an online course, which means most (if not all) of the course work will be conducted online. Expectations for performance in an online course are the same for a traditional course. In fact, online courses require a degree of self-motivation, self-discipline, and technology skills which can make these courses more demanding for some students.

Students are expected to:

- Review the how to get started information located in the course content

- Introduce yourself to the class during the first week by posting a self-introduction in the appropriate discussion forum and an appropriate photo
- Take the practice quiz to ensure that your computer is compatible with Canvas
- Interact online with instructor/s and peers
- Review and follow the course calendar
- Log in to the course 4 times per week
- Respond to discussion board postings within 2 business days
- Respond to emails/messages within 2 business days
- Submit assignments by the corresponding deadline
- Check official FIU email and Canvas Messages daily

The instructor will:

- Log in to the course 3 times per week
- Respond to emails/messages within 2 business days (excluding holidays and weekends)
- Grade assignments within 7 business days of the assignment deadline

Assignments from the text and other resources are listed for each class session. Students are expected to pace their learning according to the posted course assignments.

It is expected that interactive learning and teaching will enrich the learning experience of all students, and that each student will work in partnership with the professor to create a positive learning experience for all. Student engagement is a necessary condition for an effective learning experience and includes contributions to debate and discussion (if any), positive interactive learning with others, and an enthusiastic attitude towards inquiry. Everyone is expected to be a positive contributor to the class learning community, and students are expected to share the responsibility of teaching each other.

### **Inclusivity Statement**

This course will serve to embrace the diversity and inclusivity found within Florida International University. We appreciate and respect diversity, equality, equity, cooperativeness, community, and sustainability within our online courses. We are committed to the ongoing education of our students and their participation within the course regardless of gender, ethnicity, age, sexual orientation, geographical location, religion, and disability. We strive in encouraging collaboration by preparing our students to value the differences in others. At the core of our intentions is the encouragement of acceptance and appreciation of differences within our student population and community.

### **Religious Holidays**

The University's policy on religious holy days as stated in the University Catalog and Student Handbook will be followed in this class. Any student may request to be excused from class to observe a religious holy day of his or her faith.

### **Course Communication**

Communication in this course will take place via the Canvas Inbox. Check out the [Canvas Conversations Tutorial](#) or [Canvas Guide](#) to learn how to communicate with your instructor and peers using Announcements, Discussions, and the Inbox.

Visit our [Writing Resources webpage](#) for more information on professional writing and technical communication skills.

In this class, the official mode of communication is through Canvas. Students need to verify they receive Canvas messages and check their accounts regularly. Students might expect replies to emails within 48 hours (excluding holidays and weekends). Please do not hesitate to contact the instructor again if you did not receive a reply within 48 hours. Students are requested to contact the instructor if they do not see course materials or lectures in the Canvas.

### **Discussion Forums**

Keep in mind that your discussion forum postings will likely be seen by other members of the course. Care should be taken when determining what to post.

Discussion Forum Expectations:

- Each student is expected to introduce himself/herself in the first week of classes in the discussion forum. This introduction can include the background of the student (i.e., the BS degree, where he/she graduated, any background in programming (e.g., scratch, python, java, c++, etc.), and the reason for taking this course).
- A forum will be created for each module of the course every week. These will be titled with the name of the module. Each student is also expected to post or respond to these forums at least once every other week.
- The total number of words in all the posts and responses should be at least 40.

### **Assessments**

In order to mitigate any issues with your computer and online assessments, it is very important that you take the "Practice Quiz" from each computer you will be using to take your graded quizzes and exams. It is your responsibility to make sure your computer meets the minimum [hardware requirements](#).

All assessments will auto-submit when (1) the timer runs out OR (2) the closing date/time is reached, whichever happens first. For example, if a quiz has a closing time of 5:00 pm but the student begins the exam at 4:55 pm, the student will only have 5 minutes to complete the quiz.

Assessments in this course are not compatible with mobile devices and should not be taken through a mobile phone or a tablet. If you need further assistance please contact [FIU Canvas Help Team](#).

## Practice Quiz

A multiple-choice quiz that is designed to ensure your computer is setup and working properly for actual quizzes. (This does not count toward your overall quiz grade).

## Quiz Expectations

- There will be 7 graded quizzes.
- Each quiz will be 20 to 30 minutes, given the number of questions.
- The students will be able to see their score immediately after the quiz. The answers will not be available immediately.
- The answers will be posted on Tuesday of the upcoming week for feedback to students.

## Exam Expectations

- There will be 2 graded exams.
- The available date for each is listed in the course calendar below.
- Each exam will be about 75 to 90 minutes.
- The students will be able to see their grade **5 to 10 business** days after the exams due date.

Refer to the Course Calendar of the syllabus and Canvas for availability dates.

## Late Submission, Penalty, and Exception

- Late submission is allowed for Quizzes, Assignments, and Project.
- 15% penalty on late submission.
- Late submissions on Quizzes: students must get the permission from the instructor.
- Late submission is not allowed for Exams and Discussion/Participation.
- Students must upload all late submissions by December 05.
- **Exception:** family and personal emergency (e.g., illness, emergency travel)

## What Could happen due to COVID?

- There is a good chance that best 6 quizzes will be counted from 7.
- There is a good chance that best 3 projects will be counted from 4.

## Assignment and Project Expectations

### Assignment Expectations:

- There will be 2 mandatory assignments as scheduled in the course calendar.
- The due dates will be **1 or 2 weeks** ahead of the assignment date. Late assignments are not acceptable for points.
- Each assignment will be done individually.
- The assignments will be submitted through Canvas.
- A rubric will be posted along with each assignment.

- The assignments will be graded within **5 to 10 business days** of their submission.

**Project Expectations:**

- There will be 4 hands-on projects as scheduled in the course calendar.
- The due dates will be **1 or 2 weeks** ahead of the project date. Late projects are not acceptable for points.
- Each project will be done individually or in groups, as we will define.
- The project will be submitted through Canvas.
- A rubric will be posted along with each project.
- The projects will be graded within **2 to 3 weeks of submission** of their submission.

**Zoom Video Meeting, Q & A Sessions**

Please contact the instructor through FIU Canvas for a Zoom meeting. Students are encouraged to communicate with the instructor whenever needed.

Zoom is a video conference tool that you can use to interact with your professor and fellow students by sharing screens, chatting, broadcasting live video/audio, and taking part in other interactive online activities. We will be utilizing this tool to conduct office hours.

**[Zoom Test Meeting Room](#)**

Use this link to access the Zoom Test Meeting Room. This meeting room is available to test out the software before joining an actual session.

Reference the provided links to access Zoom student tutorials to learn about the tool, how to access your meeting room, and share your screen.

- [Download Zoom](#)
- [Login to Zoom through Desktop Application](#)
- [Enable and Test Audio & Webcam](#)
- [Schedule a meeting](#) or [Join a Zoom meeting](#)
- [Invite others to join meeting](#)
- [Chat \(Professors\) - Students look at attendees section for instructions](#)
- [Share My Screen](#)
- [Record a Local Zoom meeting](#)
- [Host Control in Meetings](#)
- [Getting Started with iOS](#)
- [Getting Started with Android](#)
- **Grading**

Course Requirements	Number of Items	Points for Each	Total Points Available	Weight
Quizzes^	7^	100	700^	15%
Exams	2	100	200	30%
Discussion/Participation	12	100	1200	12.5%



Course Requirements	Number of Items	Points for Each	Total Points Available	Weight
Assignments	2	100	200	15%
Projects*	4*	100	400*	27.5%
<b>Total</b>	27	N/A	2700	100%

- ^ The best 6 quizzes will be counted in the final grade.
- \* The best 3 projects will be counted in the final grade.

**Course Calendar**

**Module Weekly Schedule**

This syllabus is subject to change; you are responsible for regularly monitoring Canvas Announcements, Conversations/Inbox and your FIU student email to be aware of any noted changes.

Date	Tasks
	<p>Supports Learning Objectives:</p> <ul style="list-style-type: none"> <li>• Explain what “Internet of Things” term means.</li> </ul> <p>Tasks Due Sunday, 11:59 pm:</p>
Module 1: Introduction to IoT	<ul style="list-style-type: none"> <li>• Take Practice Quiz</li> <li>• Post in the Introduce Yourself Discussion Forum</li> </ul>
Week 1	<ul style="list-style-type: none"> <li>• Reading Lecture Notes 1: Introduction to IoT                             <ul style="list-style-type: none"> <li>○ While reading the lecture note, the instructor note may ask the student to watch a video in Module 1 - Video Library.</li> </ul> </li> <li>• Reading Chapter 1: What is IoT?</li> <li>• Discussion Forum (DF-1) (graded)</li> </ul> <p>Supports Learning Objectives:</p> <ul style="list-style-type: none"> <li>• Explain what “Internet of Things” term means.</li> <li>• Describe layers in the core IoT functional stack</li> <li>• Explain the difference between the IoT data management and compute stack with the traditional IT models.</li> </ul>
Module 2: IoT Network Architecture and Design	
Week 2	<p>Tasks Due Sunday, 11:59 pm:</p> <ul style="list-style-type: none"> <li>• Reading: Lecture Notes 2: IoT Network Architecture and Design</li> </ul>

**Date****Tasks**

- While reading the lecture note, the instructor note may ask the student to watch a video in Module 2 - Video Library.
- Read Chapter 2: IoT Network Architecture and Design
- Discussion Forum (DF-2) (graded)
- Create an account at Tinkercad.com and explore some basic feature on Circuits.
- Do Quiz-1

## Supports Learning Objectives:

- Explain what "Internet of Things" term means.
- Describe the difference between sensors and actuators.
- Enumerate and describe the fundamental components of IoT systems
- Describe how to classify sensors into different categories.
- Explain the characteristics of a smart object
- Explain the benefits of wireless sensor network

## Module 3: The "Things" in IoT

## Tasks Due Sunday, 11:59 pm:

## Week 3

- Reading: Lecture Notes 3: Smart Objects: The "Things" in IoT
- While reading the lecture notes, the instructor note may ask the student to watch a video in Module 3 - Video Library.
- Reading Chapter 3: Smart Objects: The "Things" in IoT
- Discussion Forum (DF-3) (graded)
- Project-1: Hand-on activity with smart objects.
- Do Quiz-2

## Supports Learning Objectives:

- List some communications criteria for IoT.
- Explain the function of gateway for IoT
- Explain the difference between the licensed and unlicensed band
- Explain the difference between the three dominant topologies for connecting IoT devices.
- Explain the difference between the three classes of IoT constrained devices.

## Module 4: Connecting Smart Objects

## Week 4

## Tasks Due Sunday, 11:59 pm:

- Reading Lecture Notes 4: Connecting Smart Objects

**Date****Tasks**

- While reading the lecture notes, the instructor note may ask the student to watch a video in Module 4 - Video Library.
- Reading Chapter 4: Connecting Smart Objects
- Discussion Forum-4 (DF-4)
- Do Quiz-3

## Supports Learning Objectives:

- Apply some basic programming concepts for IoT.
- Explain how computer code becomes a software application.
- Explain how programs allow IoT devices to process data, make decisions and communicate
- Apply flowchart to represent a workflow or process
- Describe the Arduino architecture
- Apply basic programming to support IoT devices using Visual Programming

Module 5.1: Programming the IoT Devices

Week 5

## Tasks Due Sunday, 11:59 pm:

- Reading Lecture Notes 5: Programming the IoT Devices-1
  - While reading the lecture note, the instructor note may ask the student to watch a video in Module 5 - Video Library.
- Discussion Forum-5 (DF-5)
- Project-2 - Hands-on programming IoT

## Supports Learning Objectives:

- Explain how computer code becomes a software application.
- Explain how programs allow IoT devices to process data, make decisions and communicate
- Apply flowchart to represent a workflow or process
- Describe the Arduino architecture
- Apply basic programming to support IoT devices using Visual Programming

Module 5.2: Programming the IoT Devices

Week 6

## Tasks Due Sunday, 11:59 pm:

- Reading Lecture Notes 5: Programming the IoT Devices-2
  - While reading the lecture note, the instructor note may ask the student to watch a video in Module 5 - Video Library.

Date	Tasks
Mid-term Exam	<ul style="list-style-type: none"> <li>• Continue Discussion Forum-5 (DF-5)</li> <li>• Continue Project-2 - Hands-on programming IoT</li> <li>• Reading the review materials (Module 1 - 5)</li> <li>• Do Quiz-4</li> </ul>
Week 7	<p>Tasks Due <b>Thursday</b>, 11:59 pm:</p> <ul style="list-style-type: none"> <li>• Mid-term Exam (available Tuesday 12 am - Thursday 11:59 pm)</li> </ul>
Module 6: Securing IoT	<p>Supports Learning Objectives:</p> <ul style="list-style-type: none"> <li>• Describe some common security terms</li> <li>• Explain attacks classifications</li> <li>• Explain three security goals</li> <li>• Describe security attacks related to each security goals</li> <li>• Explain the challenges of securing IoT devices</li> <li>• List some security best practices.</li> <li>• Differentiate IoT from other technologies such as cyber-physical systems and sensor networks.</li> </ul>
Week 8	<p>Tasks Due Sunday, 11:59 pm:</p> <ul style="list-style-type: none"> <li>• Reading Lecture Notes 6: Securing IoT <ul style="list-style-type: none"> <li>◦ While reading the lecture note, the instructor note may ask the student to watch a video in Module 6 - Video Library.</li> </ul> </li> <li>• Reading Chapter 8: Securing IoT</li> <li>• Discussion Forum-6 (DF-6)</li> <li>• Project-3: hands-on activity</li> <li>• Do Quiz-5</li> </ul>
Module 7: Data and Analytics for IoT	<p>Supports Learning Objectives:</p> <ul style="list-style-type: none"> <li>• Explain the differences between data, information, and knowledge</li> <li>• Describe four characteristics of big data</li> <li>• Explain the differences between structured and unstructured data</li> </ul>
Week 9	<ul style="list-style-type: none"> <li>• Explain the differences between the data at rest and data in motion</li> <li>• Describe the differences between the four types of data analytics</li> <li>• Apply some basic data analytics</li> </ul>

**Date****Tasks**

- Explain two IoT data analytics challenges on a relational database
- List some applications of Machine Learning
- Explain the difference between supervised and unsupervised learning
- Describe the neural network
- List four major domains of common Machine Learning applications for IoT

Tasks Due Sunday, 11:59 pm:

- Reading Lecture Notes 7: Data and Analytics for IoT
  - While reading the lecture note, the instructor note may ask the student to watch a video in Module 7 - Video Library.
- Reading Chapter 7: Data and Analytics for IoT
- Discussion Forum-7 (DF-7)
- Project-4: hands-on activity
- Do Quiz-6

Supports Learning Objectives:

- Explain the differences between Industrial IoT and Consumer IoT
- Describe two top challenges in manufacturing
- List the top two adopted IoT technologies for manufacturing
- Describe four information visibility levels in manufacturing
- Describe five key characteristics of a smart factory
- Describe the issues that motivate companies to move toward the smart factory.
- Describe the Industrial Automation and Control System (IACS) reference model.
- Explain the Industrial DeMilitarized Zone (I-DMZ)
- State opportunities enabled by IoT

Module 8.1: IoT applications in the real world: Manufacturing

Week 10

Tasks Due Sunday, 11:59 pm:

- Reading Lecture Notes 8: Data and Analytics for IoT
  - While reading the lecture note, the instructor note may ask the student to watch a video in Module 8 - Video Library.
- Reading Chapter 9: Manufacturing

**Date****Tasks**

- Discussion Forum-8 (DF-8)

## Supports Learning Objectives:

- Describe what is Smart Grid
- Explain the difference between the existing energy infrastructure and Smart Grid
- List the major communications networks components in Smart Grid
- List the major Smart Grid applications
- Describe the Advanced Metering Infrastructure (AMI) benefits for the electric power utility and consumers
- Describe three use cases for automatic demand response
- Explain the difference between the centralized power generation and distributed energy generation
- Explain three types of electric flows in electric transportation
- List the distributed grid management applications.
- Explain the privacy issues in Smart Grid
- Explain how anonymization can preserve the user privacy.

Module 8.2: IoT applications in the real world: Utilities

Week 11

## Tasks Due Sunday, 11:59 pm:

- Reading Lecture Notes 9: Utilities
  - While reading the lecture note, the instructor note may ask the student to watch a video in Module 9 - Video Library.
- Reading Chapter 11: Utilities
- Do Assignment-1
- Discussion Forum-9 (DF-9)

## Supports Learning Objectives:

- Describe two main approaches to smart cities
- Describe four smart city characteristics.
- Describe smart city challenges.
- Describe four-layered smart city architecture
- List four smart city use-cases.

Module 8.3: IoT applications in the real world: Smart and Connected Cities

Week 12

## Tasks Due Sunday, 11:59 pm:

- Reading Lecture Notes 10: Smart and Connected Cities
  - While reading the lecture note, the instructor note may ask the student to watch a video in Module 10 - Video Library.

Date	Tasks
Module 8.4: IoT applications in the real world: Transportation	<ul style="list-style-type: none"> <li>• Reading Chapter 9: Manufacturing</li> <li>• Discussion Forum-10 (DF-10)</li> <li>• Do Quiz-7</li> </ul> <p data-bbox="594 447 980 472">Supports Learning Objectives:</p> <ul style="list-style-type: none"> <li>• Describe transportation challenges in the area of roadways, mass transit, and rail sub-sector.</li> <li>• Explain how connected vehicle improve Safety, mobility, and environments.</li> <li>• List some connected vehicle applications for each safety, mobility, and environments.</li> <li>• Describe DSRC and WAVE</li> </ul> <p data-bbox="594 831 972 856">Tasks Due Sunday, 11:59 pm:</p>
Week 13	<ul style="list-style-type: none"> <li>• Reading Lecture Notes 11: Transportation <ul style="list-style-type: none"> <li>◦ While reading the lecture note, the instructor note may ask the student to watch a video in Module 11 - Video Library.</li> </ul> </li> <li>• Reading Chapter 13: Transportation</li> <li>• Discussion Forum-11 (DF-11)</li> <li>• Do Assignment-2</li> </ul> <p data-bbox="594 1224 980 1249">Supports Learning Objectives:</p> <ul style="list-style-type: none"> <li>• Explain the common characteristics across public safety</li> <li>• Describe three entities where smart objects are typically found for public safety applications.</li> <li>• List the benefits of knowing the school bus location in real-time.</li> <li>• List the issues in the inter-agency collaboration.</li> </ul>
Module 8.5: IoT applications in the real world: Public Safety	<p data-bbox="594 1570 972 1596">Tasks Due Sunday, 11:59 pm:</p> <ul style="list-style-type: none"> <li>• Reading Lecture Notes 12: Public Safety <ul style="list-style-type: none"> <li>◦ While reading the lecture note, the instructor note may ask the student to watch a video in Module 12 - Video Library.</li> </ul> </li> <li>• Reading Chapter 15: Public Safety</li> <li>• Discussion Forum-12 (DF-12)</li> </ul>
Week 14 and Week 15	<p data-bbox="594 1919 1000 1944">Tasks Due <b>Thursday</b>, 11:59 pm:</p>
Final Exam	

<b>Date</b>	<b>Tasks</b>
Week 16	<ul style="list-style-type: none"><li data-bbox="644 281 1390 352">• Reading Review materials (modules after the midterm exam)</li><li data-bbox="644 359 1390 436">• Final Exam (available Tuesday 12 am - Thursday 11:59 pm)</li></ul>