

Course Syllabus

SENSOR NETWORKS

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Program: Computer Science

1. Course number and name

TLMG1006 - SENSOR NETWORKS

2. Credits and contact hours

3 credits and 3 contact hours

3. Instructor's course or coordinator's name

NESTOR XAVIER ARREAGA ALVARADO

4. Text book, title, author, and year

- Habib M. Ammari. The Art of Wireless Sensor Networks (1)
 - a. Other supplemental materials
 - Holger Karl and Andreas Willig. PROTOCOLS AND ARCHITECTURES FOR WIRELESS SENSOR NETWORKS (1)
 - Walteneus Dargie & Christian Poellabauer. Fundamentals of wireless sensor networks theory and practice ((cloth))

5. Specific course information

- a. Brief description of the content of the course (catalog description)

This course introduces the basic elements of sensor networks and their different applications. With emphasis on the design, administration and management of wireless sensor networks (WSN). The course describes knowledge of the different parts that make up a WSN, its advantages, disadvantages and differences with other types of networks.

- b. This course is: Selected elective

6. Specific goals for the course

- a. Specific outcomes of instruction

1.- Identify basic concepts related to sensor networks for the design and implementation of monitoring systems.

2.- Analyze wireless sensor networks with different simulation tools.

3.- Choose properly the communication protocols used in the wireless sensor networks for deployment in wide geographical areas.

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course

- Ability to communicate in English.

7. Brief list of topics to be covered

1.- Introduction to sensor networks.

2.- Physical layer.

3.- Sensor communication.



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- 4.- Applications of wireless sensor networks.
- 5.- Security in the WSN.