

## Master Syllabus

### EGR 1211 - Introduction to Large Area Surveillance

**Division:** Science, Mathematics and Engineering

**Department:** Automation and Control Technology

**Credit Hour Total:** 3.0

**Lecture Hrs:** 2.0 **Lab Hrs:** 2.0

**Prerequisite(s):** EGR 1202

**Other Prerequisite(s):** AND Approval of Department , AND Other Secret Clearance

**Date Revised:** February 2014

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#### Course Description:

This course is designed to familiarize the student with the concepts of electro-optical remote sensing of important objects that can appear anywhere in the world without warning for a limited period of time. Some of these objects can also be rapidly moving. Such objects include missiles and aircraft in powered flight, nuclear and conventional explosions, fires and other military activity. Discussion includes the unique object signature and sensor characteristics that make detection of these objects possible while continuously monitoring large areas. Two classroom, two lab hours per week.

#### General Education Outcomes:

- ▣ Oral Communication Competency
- ▣ Written Communication Competency
- ▣ Critical Thinking/Problem Solving Competency
- ▣ Information Literacy Competency
- ▣ Computer Literacy Competency

#### Course Outcomes:

##### Optical sensors and detectors

Describe the purpose of various types of sensors and detection methods.

**Assessment Method:** Locally developed exams

**Performance Criteria:** 70% or higher correct responses

##### IR as an intelligence tool

Describe overhead and non-imaging infrared as a tool for ONIR.

**Assessment Method:** Performance appraisals

**Performance Criteria:** Score 15 or above on a five by five rubric

##### Characteristics of ONIR sources

Identify examples of several ONIR target sources and their characteristics.

**Assessment Method:** Performance appraisals

**Performance Criteria:** Score 15 or higher on a five by five rubric

#### Outline:

Infrared as an intelligence tool  
Motivation for Overhead Non-imaging Infrared (ONIR)  
The ONIR collection method  
Characteristics of ONIR sources  
Target spectral characteristics  
Sensor optics  
Various sources  
Collecting IR energy-sensors, optical-sensors, detectors  
Field of Regard and Footprint  
Exploitation of isolated target