

# EEE474 – Radar and Electronic Warfare

## Professor

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- S3209, also found in S5100

## Course Schedule

Weight: 3-2-5

- Tuesday 13:40 to 16:30 – G150
- Wednesday 10:00 to 10:50 – S4200
- Friday 15:40 to 16:30 – S2202

## Textbook

Introduction to Airborne Radar Systems by Stimson, 3<sup>rd</sup> ed.

## Course Marking Scheme:

- Assignments – 10 %
- Laboratories – 15 %
- Mid-term – 20 %
- Final Exam – 55 %

## Course Description

This course provides an introduction to radar systems and to the techniques that can be used to detect and defeat electronic systems. Students completing this course will understand the principles of radar, be capable of designing radar subsystems, and understand aspects of electronic warfare. Students will design, fabricate and test their own radar subsystems during the course's laboratory component.

## Assignment and Laboratory Policy

Permission to write the final is dependent on the student submitting all assignments

and laboratories with a reasonable amount of effort.

## Academic Misconduct

Academic misconduct, including plagiarism, cheating, and other violations of academic ethics, is a serious academic infraction for which penalties may range from a recorded caution to expulsion from the College. The RMCC Academic Regulations Section 23 defines plagiarism as: "Using the work of others and attempting to present it as original thought, prose or work. This includes failure to appropriately acknowledge a source, misrepresentation of cited work, and misuse of quotation marks or attribution." It also includes "the failure to acknowledge that work has been submitted for credit elsewhere." All students should consult the published statements on Academic Misconduct contained in the *Royal Military College of Canada Undergraduate Calendar*, Section 23.

## Course Goal

The goal of this course is to provide you with the education and skills, to design, analyze and measure Radar and EW systems.

## Topics of Instruction

1. Phased Arrays
2. Pulsed Doppler Radar
3. Radar Range Equation
4. Detection
5. Continuous Wave Radar
6. Waveform Ambiguities
7. Synthetic Aperture Radar
8. Electronic Attack
9. Electronic Support
10. Electronic Protection