OBJECTIVES:

The main objective is to provide students with a solid foundation in the field of agent-orientation design and engineering. The course emphasizes on both the theoretical and implementation aspects. The course material covers concepts of agenthood, models of coordination, interaction, communication, and collaboration among agents. The theoretical component includes lectures, readings from reference-books and papers and to develop critical-reaction reports and term-paper. The implementation component includes hands-on implementation as part of a term-project. Additionally, students will examine how these concepts are actually realized by studying several applications of agent and multi-agent systems in various domains.

PREREQUISITES:

- Computer Science Fundamentals with emphasis on OO programming language (CS027 or equivalent)
- Algorithms & data Structures (SE205 or equivalent)
- Software Systems Design (SE203 or equivalent)
  - Note: Introductory AI course will be an asset!

COURSE SCHEDULE:

Lectures 3 hrs/week

Topics

Principles

Introduction: Basic Concepts
Cooperation and Teaming
Ontology & Semantic Integration

**Methodologies & Tools**
Agents and Multi-agent Systems Engineering
Agent Development Tools and Platforms

**Application Areas/Projects**

Include the following topics (*may vary based on the student’s research interest*)

- Cooperative Distributed systems
- Agents Web Applications
- Agents for Mobile and Ubiquitous Computing

**Future Directions for Agents and Multi-Agent Systems**

**Specific Learning Objectives**

Upon the completion of the course, student should:

- gain a picture of contemporary thinking about agents and especially multi-agent systems, including principles and theory, common practices, and application areas, current and emerging;
- develop some concrete accomplishments in the agents/multi-agent systems arena through a project;
- gain experience and confidence in understanding a new and rapidly evolving technology.

**REFERENCE TEXTS:**

1. **Course notes**, papers and supplementary material will be available on the Class Web site: http://instruct.uwo.ca/engin-sc/se595a/


**EVALUATION:**

The approximate weight for each component is shown below. Note that these are maxim; if less than the stated number is given, the rest of the marks will be pro-rated.

- **(40%)** Three reaction papers that discuss some AO aspects and research issues related to principles, methodology & tools and applications, respectively.
- **(60%)** Term-Project: (20%) analysis & design, (20%) implementation and (20%) term paper

In accordance with the policy of the University, the grade assigned to all written and oral work presented in English shall take into account syntax, diction, grammar and spelling. In addition, in the professional life of an engineer, the manner in which oral and written communications are presented is extremely important. An engineering student must develop these skills as an integral part of the undergraduate program. To encourage the student to do so, the grades assigned to all written and oral work will take into account all aspects of presentation including conciseness, organization, neatness, use of headings, and the preparation and use of tables and figures.

**ATTENDANCE:**

Any student who, in the opinion of the instructor is absent too frequently from class or laboratory periods in any course, will be reported to the Dean (after due warning has been given). On the recommendation of the Department concerned, and with the permission of the Dean, the student will be debarred from taking the regular examination in the course.

**CHEATING:**

University policy states that cheating is a scholastic offence. The commission of a scholastic offence is attended by academic penalties, which may include expulsion from the program. If you are caught cheating, there will be no second warning.

**PLAGIARISM:**

Students must write their essays and assignments in their own words. Whenever students take an idea, or a passage of text from another author, they must acknowledge their debt both by using quotation marks where appropriate and by proper referencing such as footnotes or citations. Plagiarism is a major academic offence (see Scholastic Offence Policy in the Western Academic Calendar).

**PLAGIARISM CHECKING:**

The University of Western Ontario uses software for plagiarism checking. Students may be required to submit their written work in electronic form for plagiarism checking.

Please contact the course instructor if you require material in an alternate format or if any other arrangements can
make this course more accessible to you. You may also wish to contact Services for Students with Disabilities (SSD) at 661-2111 X 82147 for any specific question regarding an accommodation.

**COURSE INSTRUCTOR:**

TBA