



UNIVERSITY OF CALGARY
FACULTY OF SCIENCE
DEPARTMENT OF COMPUTER SCIENCE
COURSE OUTLINE

1. **Course:** CPSC 567: Multi-Agent Systems

Lecture Sections:

L01, TR 15:30-16:45, Jörg Denzinger, ICT 752, 220-5574, denzinge@ucalgary.ca

Office Hours: TR 14:00-15:00

Course Website: <http://pages.cpsc.ucalgary.ca/~denzinge/courses/cs567-winter2017.html>

Computer Science Department Office, ICT 602, 220-6015, cpsc@cpsc.ucalgary.ca

2. **Prerequisites:** CPSC 457 and 433

(<http://www.ucalgary.ca/pubs/calendar/current/computer-science.html#3620>)

3. **Grading:** The University policy on grading and related matters is described in sections F.1 and F.2 of the online University Calendar. In determining the overall grade in the course the following weights will be used:

Implemented Multi-Agent System	30%
Individual System Report	30%
Final Oral Exam	40%

This course **will not** have a Registrar's Scheduled Final Exam.

Special Regulations affecting the Final Grade: Each of the above components will be given a letter grade using the official University grading system. The final grade will be calculated using the grade point equivalents weighted by the percentages given above and then reconverted to a final letter grade using the official University grade point equivalents. In order to pass the course, you must achieve a passing grade in the weight combination of individual system report and final oral exam. An A+ will be if all three components are graded A.

4. **Missed Components of Term Work:** The regulations of the Faculty of Science pertaining to this matter are found in the Faculty of Science area of the Calendar. Section 3.6. It is the student's responsibility to familiarize themselves with these regulations. See also Section E.6 of the University calendar.
5. **Scheduled Out-of-Class Activities:** REGULARLY SCHEDULED CLASSES HAVE PRECEDENCE OVER ANY OUT-OF-CLASS-TIME ACTIVITY. If you have a clash with this out-of-class activity, please inform your instructor as soon as possible so that alternative assignments can be arranged.
6. **Course Materials:**
None.
- Online Course Components:**
Lecture slides will be posted on the course website.
7. **Examination Policy:** Closed book. Students should also read the Calendar, Section G, on examinations.
8. **Approved Mandatory and Optional Course Supplemental Fees:** None.
9. **Writing across the Curriculum Statement:** In this course, the quality of the student's writing in the weighted components of the course will be a factor in the evaluation of these components. See also Section E.2 of the University Calendar.

10. **Human Studies Statement:** Students will be expected to participate as subjects or participants in projects. See also Section E.5 of the University Calendar.

11. **OTHER IMPORTANT INFORMATION FOR STUDENTS:**

- a) **Misconduct:** Academic misconduct (cheating, plagiarism, or any other form) is a very serious offense that will be dealt with rigorously in all cases. A single offence may lead to disciplinary probation or suspension or expulsion. The Faculty of Science follows a zero tolerance policy regarding dishonesty. Please read the sections of the University Calendar under Section K, Student Misconduct to inform yourself of definitions, processes and penalties.
- b) **Assembly Points:** In case of emergency during class time, be sure to FAMILIARIZE YOURSELF with the information on assembly points which can be found in each classroom and building.
- c) **Student Accommodations:** Students needing an Accommodation because of a Disability or medical condition should contact Student Accessibility Services in accordance with the Procedure for Accommodations for Students with Disabilities available at http://www.ucalgary.ca/policies/files/policies/procedure-for-accommodations-for-students-with-disabilities_0.pdf. Students needing an Accommodation in relation to their coursework or to fulfil requirements for a graduate degree, based on a Protected Ground other than Disability, should communicate this need, preferably in writing, to the Associate Head of Computer Science.
- d) **Safewalk:** Campus Security will escort individuals day or night (<http://www.ucalgary.ca/security/safewalk/>). Call 403-220-5333 for assistance. Use any campus phone, emergency phone or the yellow phones located at most parking lot pay booths.
- e) **Freedom of Information and Privacy:** This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPP). As one consequence, students should identify themselves on all written work by placing their name on the front page and their ID number on each subsequent page. For more information see also <http://www.ucalgary.ca/secretariat/privacy>
- f) **Student Union Information:** VP Academic (403) 220-3911 suvpaca@ucalgary.ca SU Faculty Rep (403) 220-3913 science1@su.ucalgary.ca, science2@su.ucalgary.ca and science3@su.ucalgary.ca, Student Ombuds Office: (403) 220-6420 ombuds@ucalgary.ca, <http://ucalgary.ca/provost/students/ombuds>
- g) **Internet and Electronic Device Information:** You can assume that in all classes that you attend your cell phone should be turned off unless instructed otherwise. All communications with other individuals via laptop computers, cell phones or other devices connectable to the internet in not allowed during class time unless specifically permitted by the instructor. If you violate this policy you may be asked to leave the classroom. Repeated abuse may result in a charge of misconduct.
- h) **U.S.R.I.:** At the University of Calgary feedback provided by students through the Universal Student ratings of Instruction (USRI) survey provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses (www.ucalgary.ca/usri). Your responses make a difference – please participate in USRI surveys.

Department Approval _____ Date _____

Associate Dean's Approval for
out of regular class-time activity: _____ Date: _____

Associate Dean's Approval for
Alternate final examination
arrangements: _____ Date: _____

A signed copy of this document is kept on file in the Computer Science main Office ICT 602

CPSC 567 Syllabus

Introduction
Single-agent systems: Definitions
Modeling of agents
MAS: Definitions and Problems
MAS: Dimensions
Organisation and Cooperation: Communication
Organisation and Cooperation: Cooperation concepts
Organisation and Cooperation: Establishing Organizations
Competitive Agent Environments
Coalitions
Learning in MAS
Testing MAS

Learning Outcomes:

By the end of the course, students should be able to:

- explain the basic cooperation concepts used in multi-agent systems using appropriate terminology
- evaluate the usefulness of a given cooperation concept for a multi-agent task
- apply a cooperation concept or a combination of cooperation concepts to a given multi-agent task
- explain the challenges of competitive multi-agent systems
- evaluate the particular problems an agent has in a particular competitive multi-agent setting

Allowable Sources:

No Restrictions on source material.

Cited Sources:

If you used an article, book, function or algorithm that you did not create for this course you must cite it. (This means you may have to cite yourself!) Use APA for citations in a report, paper or in the header documentation of computer code you submit. If citing a website, make sure you include the date you accessed the website. Don't forget to cite code that you used, even if you modified the code.

Level of Collaboration between Students:

Teams share the responsibility for their system and the members are naturally free to discuss everything with each other.

Disclosure Policy

See requirements for individual report!