





Computer Science (COMP) 501

Systems Development with Emerging Technology (Revision 6)

Status: Replaced with new revision, see the [course listing](#)  for the current revision 

Delivery mode: [Grouped study](#) 


Credits: 3

Area of study: Information Systems

Prerequisites: None

Precluded: None

Faculty: [Faculty of Science and Technology](#) 

Notes: This is a graduate level course and students need to apply and be approved to one of the graduate programs or as a non-program [School of Computing and Information Systems](#)  graduate student in order to take this course. Minimum admission requirements must be met. Undergraduate students who do not meet admission requirements will not normally be permitted to take this course.

Instructor:

Dr. Maiga Chang [↗](#)

Overview

COMP 501: Systems Development with Emerging Technology provides an industrial-strength coverage of Java programming, including the important core packages; however, all aspects of Java cannot be covered in a single course in any depth. Those areas not covered in great depth compose core elements of other courses. For instance, the material for programming in a server environment (networking, distributed systems, enterprise beans, servlets, JSP) is limited. However, these areas will be examined in courses covering e-commerce, website technology, and distributed systems.

COMP 501 is recommended for all students wishing to enroll in graduate courses that require Java programming or an understanding of Java programming and who do not have Java programming experience.

After completing COMP 501, you will be expected to program well and independently in Java and be able to pick up new packages and classes, as required. Other courses in the MSc(IS) curriculum are dependent upon these skills. Students may come into COMP 501 at different levels of object-oriented programming expertise, but all are expected to leave as competent Java programmers.

Outline

- Unit 0: Preparation
- Unit 1: Object-Oriented Programming Fundamentals
- Unit 2: First Program and Program Control
- Unit 3: Object Orientation and Re-usability
- Unit 4: Exceptions, Collections, and I/O
- Unit 5: Type Information and Threads

- Unit 6: GUI Development
- Unit 7: Selected Topic Readings and Programming
- Unit 8: Java Beans
- Unit 9: Java 3D

Learning outcomes

Upon successful completion of this course, you will be able to


- apply the basic and advanced features of Java to continue with the graduate study courses that require Java programming.
- understand the concepts of objects, data abstraction, inheritance, polymorphism, runtime mechanism, and Java threads to apply in Java applications.
- create new packages or reuse existing packages, as required.
- perform GUI programming, component programming (beans), networking and distributed programming, and multimedia (Java 3D and Java Media Framework).
- analyze the areas of emerging Java technology through a review of the learning materials and a significant self-directed study project in one of the following areas: Java Beans, Java 3D, Java Media Framework, Design Patterns, and XML.

Evaluation

In order to receive credit for COMP 501, you must achieve a cumulative course grade of B- (70 percent) or better, and you must achieve an average grade of at least 60 percent on the assignments and achieve a grade of at least 60 percent on the final exam. Your cumulative course grade will be based on the following assessment.

Activity	Weight
Assignment 1 (Units 1 & 2)	10%
Assignment 2 (Unit 3)	15%

Activity	Weight
Assignment 3 (Units 1–9)	20%
Self-Assessment Activity	5%
Conference Participation	15%
Final Exam	35%
Total	100%

The **final examination** for this course must be requested in advance and written under the supervision of an AU-approved exam invigilator. Invigilators include either ProctorU or an approved in-person invigilation centre that can accommodate online exams. Students are responsible for payment of any invigilation fees. Information on exam request deadlines, invigilators, and other exam-related questions, can be found at the [Exams and grades](#)  section of the Calendar.

Materials

Readings for this course are available entirely online (e.g., e-books, Oracle's The Java Tutorials).

Other Materials

The remaining learning materials for COMP 501 are distributed in electronic format. At this time, those materials include the following:

- the Study Guide for this course
- detailed descriptions of the requirements for the assignments, self-assessment, and conference participation
- a course evaluation questionnaire

Course Workload

The course schedule for COMP 501 is based on a workload of approximately 20–

25 hours per week:

- Readings (7–8 hours/week)
- Synthesis and/or Exercises (7–8 hours/week)
- Assignments/Assessment Activities (7–8 hours/week)

Special Course Features

Computer Science 501 is offered in computer-mediated communications (CMC) mode and can be completed at the student's workplace or home. It is a recommended course in the MSc(IS) for students with no background in Java.

Important links

- › [Future Course Offerings](#) 
- › [Important Dates and Deadlines](#) 
- › [MScIS Contact Information](#) 

Athabasca University reserves the right to amend course outlines occasionally and without notice. Courses offered by other delivery methods may vary from their individualized study counterparts.

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View [previous revision](#) 
