

ADVANCED SCHOLARS

UNIVERSITY OF NEBRASKA-LINCOLN

MULTI-MEDIA APPROACH TO COMPUTING (CSCE 151)

3 Credits (Available Fall and Spring)

Faculty

JODI HOLT

Staff, Computer Science and Engineering

Ms. Holt joined the UNL Department of Computer Science and Engineering in 2004, and is the Undergraduate Recruitment and Communications Specialist for the Department. Her professional interests include multimedia aspects of computer science and computer engineering, and she instructs the Web Development and Flash session during the Big Red Academic Camp offered through 4H each summer. Ms. Holt serves as the CSE Webmaster, Newsletter Editor, and Director of the Student Resource Center for the Department of Computer Science and Engineering.

Course Description

CSCE 151 offers an introduction to computer programming through the manipulation of images, audio and video, and gives students an opportunity to explore computer science concepts in the context of real-world, relevant applications. This course is readily accessible to students of all computing backgrounds and allows non-majors to experience the exciting and innovative world of computer science. Concepts presented include data structures, algorithms, and information encoding, presented within the context of the programming language Python. This language was specifically chosen for its simplicity and widespread use — Python is employed by many Fortune 500 companies and can be seen in applications such as YouTube, Facebook, and Google. After completing this course, students will be prepared to take college-level Computer Science I.

COURSE PREREQUISITE: HIGH SCHOOL-LEVEL ADVANCED ALGEBRA

Course Objectives

1. Read, understand, modify, and create programs in Python that perform useful tasks: image manipulation, sound synthesis and editing, text (e.g. HTML) creation and manipulation, and digital video effects.
2. Become familiar with computer science fundamentals including data structures, algorithms, information encoding, and object-oriented programming.
3. Learn about advanced computer science topics, such as graphing, database concepts, and software engineering.
4. Gain an appreciation of computer science as a relevant field that encompasses more than simply writing code.

Course Components

- Reading exercises
- Lessons with short quizzes and self-checks
- Coding exercises
- Four tests and one final exam

Technology Requirements

Access to e-mail and Internet required, high speed connection recommended.

PC with Windows 2000, XP, or Linux/Unix, or a Mac with OS X or OS/2

Latest version of Java, Python and Jython installed (free plug-ins available)