CS 187 Science Gateway Seminar I
Fall 2015 Syllabus

Class room: Science Building 3rd Floor Room 143 (S-3-143)
Class time: Tuesday & Thursday 11:00 AM - 12:00 PM
Class websites: Check Blackboard at `https://umb.umassonline.net/`

Instructor: Dr. Xiaohui Liang

- Email: xiaohui.liang@umb.edu

- Office location: S-3-80

- Office hour: Tuesday & Thursday 2:30 PM - 4:00 PM

Peer Mentor: Daniel Manning

- Email: Daniel.Manning001@umb.edu

- Office location: Unix Lab

- Office hour: Thursday 2:00 PM - 3:00 PM. (Daniel is usually free between 12:00 PM - 8:00PM on Tuesday and Thursday. If you see him during those hours, feel free to ask questions; but you are guaranteed to be able to see him on Thursday 2:00 PM - 3:00 PM)

Course Description
This is the first course of a two-semester sequence, two credits each semester. Successful completion of the sequence will fulfill the student's First-Year Seminar requirement. Course content during the first semester will focus on understanding various facets of Computer Science (CS) and how it relates to our lives. Students will be introduced to different concepts of CS, read and discuss articles, and discuss important matters in written work and orally, and implement interesting projects in small groups. Students will become increasingly familiar with and experienced in scientific discourse, scientific methods and scientific communication.

Objectives
This Freshman Seminar Course, in the College of Science and Mathematics, is organized along a theme of inquiry-based learning for students and faculty. Each participant has a role in understanding topics that are prevalent in the scientific community along with developing new information that might form the basic science investments of the future. Students will be co-developers of this freshman seminar series that will be based primarily on inquiry-based science education. Desired outcomes will focus on students developing discovery skills, becoming self-driven learner, learning to work in groups, and being successful at the university. This course will maximize students' potential for success in the university and the scientific community. Grading will be based on class participation, written papers, and projects.

This course is an important component of the Freshman Success Community (FSC) program. Both the seminar and the FSC are new important initiatives that we are undertaking to enhance the experience and academic success of new freshmen entering the College of Science and Mathematics. As a participant

in these initiatives you will have the opportunity to become much more familiar with your fellow students, your faculty, and the resources available to you at UMass Boston. Transition from high school to university is often a big challenge. These new initiatives will allow you to form a partnership, with us and with your fellow students, to help you succeed as university science majors. We want to help you to start thinking now about how to progress towards a timely graduation, and to prepare to achieve your post graduation goals.

We will focus on discussion of topics with broad societal impact that have important scientific underpinnings, Using this approach, you will become increasingly familiar with experienced in scientific discourse, scientific methods, and important new scientific findings. Using this scientific framework, the course will address all of the objectives of the UMass Boston First Year Seminar Program:

- Critical reading

- Critical thinking

- Clear writing

- Academic self-assessment

- Collaborative learning

- Information technology

- Oral presentation

Covered Materials
The class will run as a sequence of the following topics:

- Concepts: What is computer science? Programming, logics, and probability?

- Puzzles: Number sequence, binary search, sorting, string matching, cryptography, byzantine.

- Tools: How to use a collaborative tool? How to install Linux on your own laptop?

- Project: Introduction to Arduino sensor mote.

- Presentation: Reporting individual findings and team project outcomes.

In addition to discussion of science topics, class time will also include presentations from a variety of guest speakers who can describe UMass Boston resources for student success. Lectures and demonstrations will be given by the instructor, peer mentors, invited speakers, and student presentations. A detailed weekly schedule is provided as follows (changes may apply). 1-2 classes per semester will be an open discussion, where the students will raise specific issues they encounter during their studies, and the instruction team will try to address them.

Grading
We have three parts for grading.

- Individual investigation of an assigned topic of Computer Science (1st half of the semester):

  - Writing assignment (30%): Each student will write a 3-page essay reporting the findings of the investigation. Make sure the essay includes minimum 3 references. Page format: 11 points, single-spaced, 1-inch top/bottom/left/right margin.
  - Oral presentation (15%): Each student is required to prepare a couple of slides and give a presentation (6-8 minutes) to describe his/her findings.

- Team project of an assigned topic (2nd half of the semester)

  - Project report (<u>30%</u>): Each team will write a report to describe their project. The report should have minimum 5 pages. Page format: 11 points, single-spaced, 1-inch top/bottom/left/right margin.

  - Oral presentation (<u>15%</u>): Each group needs to deliver a 15-minute presentation about the project outcomes.

- Class attendance (<u>10%</u>). Absence from class will have to be a good reason (illness, emergence) and documented to avoid grade reduction. Students are highly encouraged to actively participate in class.

Absence and Late Homework Policies

- Unless a good reason and its supporting evidence are given, e.g., due to illness, emergency, important events, you will lose <u>2%</u> if you are absent from a class.

- There will be deadlines for submitting your first draft and your revision. If you miss any the deadline, you will lose <u>2% per day</u>.

- There will be a deadline for submitting your group report. If a group misses the deadline, each group member will lose <u>2% per day</u>.

Temporary Class Schedule (Check Announcement)

- Week 1 Class 1 Sep 8: Introduction

- Week 1 Class 2 Sep 10: Concept 1

- Week 2 Class 1 Sep 15: Puzzle 1 & **Giving options of writing topics**

- Week 2 Class 2 Sep 17: Convocation speech

- Week 3 Class 1 Sep 22: Concept 2 & **Choosing writing topics**

- Week 3 Class 2 Sep 24: Puzzle 2

- Week 4 Class 1 Sep 29: Library instruction session

- Week 4 Class 2 Oct 1: Critical reading of a paper

- Week 5 Class 1 Oct 6: Collaborative Tool 1

- Week 5 Class 2 Oct 8: Concept 3 & **Deadline of first draft**

- Week 6 Class 1 Oct 13: Group discussion on projects

- Week 6 Class 2 Oct 15: Linux Tool 2 & **Deadline of revision**

- Week 7 Class 1 Oct 20: Puzzle 3 & 4 Individual Presentations

- Week 7 Class 2 Oct 22: Concept 4 & 4 Individual Presentations

- Week 8 Class 1 Oct 27: Puzzle 4 & 4 Individual Presentations

- Week 8 Class 2 Oct 29: Critical reading of a paper & 4 Individual Presentations

- Week 9 Class 1 Oct 1: Concept 5 & 4 Individual Presentations

- Week 9 Class 2 Nov 3: Puzzle 5 & 4 Individual Presentations

- Week 10 Class 1 Nov 5: Group Presentation

- Week 10 Class 2 Nov 10: Group Presenation & **Deadline of group report**

Accommodations

This class seeks ways to become a working and evolving model of inclusion and universal design for all participants. Individuals with disabilities of any kind (including learning disabilities, ADHD, depression, health conditions), who require instructional, curricular, or test accommodations are responsible for make such needs known to the instructor as early as possible. Every effort will be made to accommodate students in a timely and confidential manner. Individuals who request accommodations must be registered with the Ross Center for Disability Services, which authorizes accommodations for students with disabilities. If applicable, students may obtain adaptation recommendations from the Ross Center for Disability Services, M-1-401, (617-287-7430), `www.rosscenter.umb.edu`. The student must present these recommendations and discuss them with each professor within a reasonable period, preferably by the end of Drop/Add period.

Student Conduct

Students are required to adhere to the University Policy on Academic Standards and Cheating, to the University Statement on Plagiarism and the Documentation of Written Work, and to the Code of Student Conduct as delineated in the catalog of Undergraduate Programs, pp. 44-45, and 48-52. The Code is available online at: https://www.umb.edu/life_on_campus/policies/community/code

Additional information

My emails to the class will be sent from the Blackboard system so make sure that your email address is set up correctly with Blackboard. You should visit the Blackboard website regularly for other information including latest announcements about the class. Make sure you check your UMB e-mail address (usually firstname.lastname001@umb.edu) regularly and/or redirect it to another e-mail address you use more frequently. No excuses regarding infrequent use of this e-mail address will be accepted.

Number to letter grade conversion

P > 90	A
90 ≥ P > 85	A-
85 ≥ P > 80	B+
80 ≥ P > 75	B
75 ≥ P > 70	B-
70 ≥ P > 65	C+
65 ≥ P > 60	C
60 ≥ P > 55	C-
55 ≥ P > 50	D+
50 ≥ P > 45	D
45 ≥ P > 40	D-
40 ≥ P	F