

Course                    **CSI 5380: Software Verification and Testing**  
Department of Computer Science and Engineering,  
School of Computer Science and Engineering, Oakland University

Credits                    4 credits  
Semester                   Winter 2018 (TR 7:30 – 9:17pm)

Instructor                Hua Ming, [ming@oakland.edu](mailto:ming@oakland.edu)  
Office Hours: By appointments  
Office: EC 516

Classroom                135 DHE

**Required Books**        NONE in terms of published books. However, in addition to course lecture notes, we will periodically post related materials such as research papers and documents, including electronic books, inside moodle for learning and reviewing purposes.

**Supplementary Materials**    Will be posted inside moodle periodically.

OU Important Dates        <https://www.oakland.edu/registrar/important-dates/>

Final day                    **April 24, 7:00pm ~ 10:00pm**

**General Description:**

CSI 5380 is designed as a graduate level research class. Approximately, it consists of three parts: Formal Verification, Static Program Analysis and Testing (also known as Dynamic Program Analysis).

The course consists of lectures by the instructor, in-class discussions, presentations, homework assignments and a final project. **In winter 2018**, based on our in-class survey, we will turn exam 1 into an initial research presentation, upon which students will keep updating and developing until a final research report is submitted at the end of this semester. The final exam, to take place on April 24 7~10pm, will be an in-class final project presentation. We will post detailed requirements on this inside moodle in due course.

**Prerequisite(s):** Students must have graduate standing.

**By successful completion of the course, you should be able to:**

- Describe principles and fundamental concepts of software verification and testing.
- Be familiar with basic software verification techniques.
- Be familiar with foundational software testing techniques.

- Gain technical insights in some well-known formal models, such as temporal logic CTL, etc.
- Be able to read related research papers.

**Homework:**

We will give approximately 3 homework assignments in this course. All homeworks will be posted and submitted in Moodle.

**For questions regarding the homework assignments, you can directly email the instructor.**

**Grading:**

Your overall score is calculated based on:

|                                       |     |
|---------------------------------------|-----|
| Homework                              | 30% |
| Initial research presentation         | 30% |
| Research Project & final presentation | 30% |
| In-class Participation                | 10% |

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Your final letter grade is calculated by:

|                           |           |
|---------------------------|-----------|
| overall score 90 or above | 4.0       |
| 85 <= overall score < 90  | 3.6 - 3.9 |
| 80 <= overall score < 85  | 3.3 - 3.6 |
| 75 <= overall score < 80  | 3.0 - 3.3 |
| 65 <= overall score < 75  | 2.6 - 3.0 |
| 60 <= overall score < 65  | 2.3 - 2.6 |
| 55 <= overall score < 60  | 2.0 - 2.3 |
| 50 <= overall score < 55  | 1.6 - 2.0 |
| 45 <= overall score < 50  | 1.3 - 1.6 |
| 40 <= overall score < 45  | 1.0 - 1.3 |
| 35 <= overall score < 40  | 0.6 - 1.0 |
| 30 <= overall score < 35  | 0.3 - 0.6 |
| 25 <= overall score < 30  | 0.1 - 0.3 |

|                        |     |
|------------------------|-----|
| overall score below 25 | 0.0 |
|------------------------|-----|

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**Class policies:**

1. Academic conduct policy: All members of the academic community at Oakland University are expected to practice and uphold standards of academic integrity and honesty. Academic integrity means representing oneself and one’s work honestly. Misrepresentation is cheating since it means students are claiming credit for ideas or work not actually theirs and are hereby seeking a grade that is not actually earned. Following are some examples of academic dishonesty:
  - a. Cheating on examinations. This includes using materials such as books and/or notes when not authorized by the instructor, copying from someone else’s paper,

helping someone else copy work, substituting another's work as one's own, theft of exam copies, or other forms of misconduct on exams.

- b. Plagiarizing the work of others. Plagiarism is using someone else's work or ideas without giving that person credit; by doing this students are, in effect, claiming credit for someone else's thinking. Whether students have read or heard the information used, they must document the source of information. When dealing with written sources, a clear distinction should be made between quotations (which digests the source of information and produce it in the student's own words). Both direct quotations and paraphrases must be documented. Even if students rephrase, condense or select from another person's work, the ideas are still the other person's, and failure to give credit constitutes misrepresentation of the student's actual work and plagiarism of another's ideas. Buying a paper or using information from the World Wide Web or internet without attribution and handing it in as one's own work is plagiarism.
  - c. Cheating on lab reports by falsifying data or submitting data not based on the student's own work.
  - d. Falsifying records or providing misinformation regarding one's credentials.
  - e. Unauthorized collaboration on computer assignments and unauthorized access to and use of computer programs, including modifying computer files created by others and representing that work as one's own.
2. Add/drops:  
The university policy will be explicitly followed. It is the student's responsibility to be aware of deadline dates for dropping courses.
3. Special Considerations:  
Students with disability who may require special considerations should make an appointment with campus Disability Support Services, 106 North Foundation Hall, phone 248-370-3266. **Students should also bring their needs to the attention of the instructor as soon as possible.** For academic help, such as study and reading skills, contact the Academic Skills/Tutoring Center, 103 North Foundation Hall, phone 248-370-4215.
4. Athlete Excused Absences  
Students shall inform their instructors of dates they will miss class due to an excused absence prior to the date of that anticipated absence. For activities such as athletic competitions whose schedules are known prior to the start of a term, **students must provide their instructors during the first week of each term a written schedule showing days they expect to miss classes.** For their university excused absences students must provide each instructor at the earliest possible time the dates that they will miss. For the make up work:
- It is the responsibility of the student to request from the instructor an opportunity to complete missed assignments, activities, labs, examinations or other course requirements in a timely manner.
  - Students are responsible for all material covered in classes that they miss, even when their absence are excused, as defined above.
  - Missed classroom activities will be rescheduled at the discretion of the instructor.