

# Syllabus: Computer Systems Research

For the 2016-2017 School Year

## Contact Information

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Course materials are at [academics.tjhsst.edu/compsci/syslab](http://academics.tjhsst.edu/compsci/syslab) and no login is required.

## Course Description

The TJHSST Computer Systems Laboratory supports student research in theoretical and applied computer science and computational science. Projects fall within a broad spectrum of computer science areas spanning artificial intelligence and machine learning, computer vision, computer graphics, high performance computing, grid/distributed computing, computational science applications, agent based modeling of complex systems including social complexity, software design, and development of theoretical algorithms. Our Computer Systems Laboratory emphasizes a multilingual computer language community, featuring C and C++, Java, Python, Ruby, XML, PHP, Perl, MySQL, JavaScript, Tk, OpenGL, and MASON (Multi-Agent Simulator of Neighborhoods).

## Research Symposium

All students present their work at TJ Star. Throughout the year updated slides are due the fourth week of each quarter, an updated paper is due the sixth week, and an updated poster is due the eighth week. Slides will grow in number and otherwise change over time. The paper will lag behind the slides: formal proposal in the first quarter, framework in the second, then first draft and second draft in the third and fourth. The poster will lag behind the paper: basic template in the first quarter, background information in the second, results in the third, and final version in the fourth quarter.

## Grading

All seniors receive a first semester grade in all courses. The first semester grade will be calculated as the average of the first two quarter grades, weighted equally.

The final grade for the course will be calculated from the four quarter grades and a final exam grade for the final paper. The first two quarter grades are each weighted 15%, the third quarter is weighted 20%, and the fourth quarter and final exam are each weighted 25%.

Each quarter's assignments are weighted 20% for ongoing code and project progress, 20% ongoing presentations both with and without slides, 20% updated slides, 10% updated poster, and 30% updated paper.

The updated paper may be revised per the retake policy. This revision is optional and only available if the initial updated paper scores below 80%. Students exercising this option will receive the highest grade, but no revision will score higher than 80%. No formal request or corrective action is required other than submission of the revised updated paper.

Late submission of any assignment is penalized not more than 50% until the end of the quarter, then and thereafter incurring a 100% penalty.

## **Statements**

There is no extra credit. There is no homework. The lab provides all necessary equipment. Mobile devices may not be used during class without permission, including hallways; otherwise the device may be confiscated.

## **Student Advocacy**

Students should consult the TJHSST Student Advocacy Brochure to be found at...

[www.tjhsst.edu/abouttj/integrity](http://www.tjhsst.edu/abouttj/integrity)

...and are encouraged and invited to discuss these issues with their instructor.

## **Plagiarism**

Honesty and academic integrity are important values of the TJ community. No person should feel the need to take ethical shortcuts. This class strongly encourages collaboration, meaning a discussion among students about problem solving approaches. It is not acceptable to work together to generate identical code. A student who is helping may look at another student's code to aid in debugging, but a student who is being helped should not read code written by other students. Plagiarism, which means copying code in whole or in part, from a student or from the Internet, is an academic offense with consequences. Students' code will be checked with plagiarism detection software. The teacher is required to report plagiarism to the student's grade level administrator, counselor, and parents.

## **About Research**

The goal of this class is a positive research experience. It is in the nature of research to throw up (unexpected) obstacles, and it is part of your duty to deal with these obstacles. "Obstacle" might mean a programming obstacle, but very often it is something else, ranging from a question of understanding the problem, or the people from whom the problem stems, to the underlying algorithm that will address the problem, to finding applicable data, or enough applicable data, or getting ahold of the right people, or securing the necessary type of permission or hardware.

Dealing with all of this is an essential part of research.