



## National Taiwan University of Science and Technology

### 2020 Summer Program

### CSC 180 Computing and Society in History

#### Course Outline

**Term:** June 1-July 3 ,2020

**Course Code:** CSC 180

**Instructor:** Mo Sha

**Home Institution:** State University of New York at Binghamton

**Office Hours:** TBA

**Email:** msha@binghamton.edu

**Credit:** 4

#### **Course Description:**

This course provides an overview of computing systems and introduces a series of techniques that leads students through the gradual construction of a complete and working computing system including the hardware platform and the software hierarchy. Topics include:

- basic computing and operating systems concepts and techniques
- wireless networks and other communication concepts and techniques
- computer programming for computing system implementation
- real-world computing systems and research

#### **Required Textbooks:**

None. Online reading materials will be provided.

#### **Grading & Evaluation:**

There will be one exam, which tests basic computer programming concepts and accounts 30 points. Student Project accounts 70 points. Student Project tests the skill of computing system design. The grade distribution (90-100%=A, 80-89%=B, 70-79%=C, 60-69%=D; and below 60% = F)

#### **Course Schedule:**

The course outline is tentative and may be modified accordingly depending on the pace of the class.

**Week 1:** Basic Computing and Communication System Concepts and Techniques, Operating Systems, and Internet of Things

**Week 2:** Computing System Implementation with a computer programming language.

**Week 3:** Computing System Implementation with a computer programming language (continued).

**Week 4:** Real-World Computing System Case Studies and techniques: Clinical monitoring, Structural Health Monitoring Systems, and Machine Learning.

**Week 5:** Real-World Computing System Case Studies and techniques: Industrial Automation Systems, etc.

