A Guide to STEM at Wooster: Computer Science

This short guide has been developed by international students and STEM faculty at the College of Wooster. The information provided here is meant to give you some support in navigating STEM courses and majors at Wooster. In this guide, you will find some common differences in the way certain topics are taught in the U.S. versus other countries, along with tips and resources that may be helpful.

We understand that no one student’s educational experience is like another and would like this document to be a “living resource,” regularly updated with new ideas and information. If you have any international to U.S. teaching “translations,” tips, or resources you have found useful, please contact Dr. Missy Schen (mschen@wooster.edu) to add to this document.

# Differences in Teaching: International vs. U.S.

* U.S. places more emphasis on hands-on experience than other international curriculums:
	+ Student-driven projects
	+ Research papers
	+ Lab sessions
* U.S. has a learning environment that is more catered towards asking questions:
	+ Presence of Teaching Assistants (TA’s)
	+ Office hours – open hours to meet with your professor or TA
* However, the general process is very similar to how it is taught in other countries as Computer Science (CS). The fundamental concepts stay the same and syntax must be memorized in English. Thus, it is better to focus on the teaching styles and expectations of each professor.
	+ The lectures mainly follow the same format: the professor will introduce a new CS-related concept and provide an example of the code. The professor will then give a homework that pertains to the topic discussed in the lecture.

# CS Courses in Wooster

* The introductory CS Wooster courses are CS 100, 110, and 120:
	+ CS 100: Scientific Computing
		- Introductory course that exposes students to fundamental concepts such as loops, dictionaries, and basic primitive data types.
		- The class is taught in Python.
	+ CS 110: Imperative Problem Solving
		- Introductory course that builds upon CS 100 and exposes students to more complex concepts such as pointers, dynamic memory allocation, and recursion.
		- This class is taught in C.
	+ CS 120: Data Structures and Algorithms
		- Introductory course that builds upon the concepts introduced in CS 100 and 110 to introduce problem-solving strategies such as linked lists, nodes, and stacks.
		- This course includes a mandatory lab session titled CS 120L. Labs offer 0.25 additional credit per semester and give students opportunities to apply what they learned in class by doing small-scale projects given by the professor. These projects typically require adequate knowledge of the topics discussed for the week and have longer deadlines than the homework given in lectures.
		- This class is taught in C++.

# Tips for International Students in STEM

* Always ask questions if you’re stuck. While it can be daunting, remember that you’re paying for these resources with your tuition.
	+ You can also ask questions more privately if you go to office hours.
	+ You will have a Zone Intern (ZI) in your introductory courses. The ZI’s are upper-level students who have done well in your course and been trained to help with course material and offer mentoring. They also hold office hours in the [STEM Zone](https://inside.wooster.edu/stem/zone/).
* Learn to use online resources. In the field of computer science, learning how to google is a very useful skill.

# Helpful Resources for International Students in CS

* The official documentation for each language
	+ Python: <https://docs.python.org/3/>
	+ C: <https://en.cppreference.com/w/c/language>
	+ C++: https://en.cppreference.com/w/cpp/language
* Online resources
	+ Michael Sambol (<https://www.youtube.com/channel/UCzDJwLWoYCUQowF_nG3m5OQ>)
	+ Khan Academy
	+ Stack Overflow
	+ W3schools
	+ GitHub

# Tips from Wooster CS Majors

* “If you’re having problems with your code, you want to keep calm and not lose your cool. Look for multiple perspectives-from your friends or your professors.”
* “Have some basic knowledge of computer science before you decide to major in it. There are a lot of stressful things about being a freshman apart from academics, so having prior experience is better and will help you.”
* “Never procrastinate for deadlines. In CS, you need some time to rest and figure out why your code is not working. It is better to start your homework and projects as soon as you get them.”
* “For those with more CS experiences, you can ask professors to skip some of the more introductory courses if you are comfortable with the basic concepts and syntax.”

# Other Information Related to Learning at the College of Wooster

# Credit, Letter, & Grading System

* 32 credits are required to graduate
* The amount of credit varies for each course (0.125, 0.25, 0.5, or 1).
* A maximum of 4.63 course credits is allowed per semester. If a student’s credit exceeds this, they need to petition for overload. With the petition, they can have up to 5.5 credits per semester.
* To earn credits for a class, the student must have grades of C- or higher
* The college uses a letter grading system:
* A = 4.000-a grade in the A range indicates outstanding performance in which there has been distinguished achievement in all phases of the course.
* B = 3.000-a grade in the B range indicates good performance in which there has been a high level of achievement in some phases of the course.
* C = 2.000-a grade in the C range indicates an adequate performance in which a basic understanding of the subject has been demonstrated.
* C- = 1.667
* D to F = a grade in this range indicates a failed course and the student will not receive any credit for the class.
* Additionally, a student can choose to have a two-level grading system (pass-fail) for a course.  If a student has a grade of at least C-, the course will be marked as ``pass’’; the student will receive credit for the course, and the grade will not affect the cumulative GPA of the student.
* GPA can be classified into Term GPA and Cumulative GPA. Term GPA is calculated using

the courses taken for a specific semester. Cumulative GPA, then, is calculated using the Term GPAs earned in all semesters.

* Throughout the semester, students can also receive academic alerts. These are essentially a progress report for a student and are used to update their progress in class to a system of support comprised of professionals in campus.
	+ Some common reasons for professors sending academic alerts are absenteeism, poor performance in a significant, graded assignment, and lack of participation.
	+ Academic alerts aren’t always based on negative reasons, and can also be used to report exceptional performances.

# Mentoring and Communication

* Students are encouraged to engage with professors outside of class. Office hours are specified by the professors in the syllabus and provide an opportunity for students to ask questions regarding coursework or anything related to the topic of the class. Additionally, if there are conflicts in scheduling, students can email their professors and meet at another time.
* Students can also refer to Peer Tutors and Zone Interns (ZI’s) for guidance, available through [the Academic Resource Center](https://inside.wooster.edu/arc/) and [the STEM Zone](https://inside.wooster.edu/stem/zone/).
* Peer Tutors are available in the following areas of study-Chemistry, Biology, Psychology, Neuroscience, Economics, Geology, and Physics. Students can request for a Peer Tutor from the Academic Resource Center using a ClockWork account.
* ZI’s are available during class and have designated office hours in the STEM Zone spaces that function similarly to a professor’s office hours.

**Extra-curricular and STEM clubs**

* There are several student clubs and organizations on campus. There are several STEM related clubs that fall under the academic category. These range from subject-specific clubs (e.g., Biology Club, Psychology Club) to clubs relating to entire fields (e.g., Pre-Dental Society, Pre-Health Club).
* Students can also start their own club.
* STEM students are encouraged to join clubs for many reasons:
* It can help them connect with upperclassmen of their major whom they can reach out for guidance.
* There are STEM specific clubs that can assist students with their studies
* e.g., STEM Zone, Psychology Club, etc.
* Extra-curricular activities seemingly unrelated to one’s major can benefit a student’s academic endeavors in Wooster.
* e.g., Effective Altruism, an organization focused charity and altruism, can help students narrow down and identify topics for their Independent Study.

# Colloquium and Networking

* Networking is a key part of the college experience. The College of Wooster offers networking opportunities through events such as department colloquiums, Future Alumni Network (FAN), and Fighting Scots.
* The Colloquium is an event for speakers to gather and talk about a variety of topics such as internship experiences, academic research, and seminars where students share their internship experiences that pertain to their major. Their talks usually include information such as how they were able to find the internship, what they did, and what they learned.
* FAN is an organization that works with college alumni to provide opportunities to make connections.
* Fighting Scots is an online platform that allows students to connect with alumni and have online meetings. In this platform, students can ask for advice, mentorship, and guidance.
* The College also offers career planning services at APEX (Advising, Planning, and Experiential Learning). These services include the following:
* Internship Searching Process
* Interview Preparation
* Resume/Cover Letter Assistance
* Career Exploration
* LinkedIn Profile Setup