VANDERBILT
School *of* Engineering

Syllabus

TIMES AND LOCATION

– **Days** / Mondays, Wednesdays, and Fridays
– **Time** / 10:10 am – 11:00 am (Section 1) / 11:15 am – 12:05 pm (Section 2) / 1:25 pm – 2:15 pm (Section 3)
– **Location** / Featheringill Hall (FGH) 110 (Sections 1 and 2) / FGH 136 (Section 3)

INSTRUCTOR

– **Name** / Dr. Robert Tairas
– **Email** / robert.tairas@vanderbilt.edu
– **Office location** / 377 Featheringill Hall
– **Office hours** / Tuesdays and Thursdays, 1:00 pm – 2:00 pm, or by appointment

TEACHING ASSISTANTS

Names, emails, and office hours of all TAs will be posted on Brightspace under **Content** | **Staff**.

TEXTBOOK

Concepts of Programming Languages / 12th edition
By Robert Sebesta / Addison Wesley © 2019
ISBN-13: 978-0-13-510226-8

COURSE CATALOG DESCRIPTION

General criteria for design, implementation, and evaluation of programming languages. Historical perspective. Syntactic and semantic specification, compilations, and interpretation processes. Comparative studies of data types and data control, procedures and parameters, sequence control, nesting, scope and storage management, run-time representations. Problem-solving using non-standard languages.

PREREQUISITES

CS 2201 and (CS 2281 or CS 2123 or ECE 2281 or ECE 2123)

COURSE OVERVIEW

CS 3270/5270 presents a survey of fundamental concepts underlying modern programming languages. We will look at different ways programming languages implement and support language features. This includes studying programming languages that are of a different paradigm than languages such as C++ and Java. We will also see how languages are very much interrelated where features introduced by one language are adopted by other languages.

What should you take away from this course?
– Improved understanding of languages you know and ability to learn new languages quickly
– Appreciation for design trade-offs in languages and what other languages can do (better)
– Understanding of what the compiler and run-time system are doing for you and your program
– Exposure to other language paradigms

SOFTWARE

We will be exploring various programming languages in the assignments. Instructions on how to access appropriate compilers/interpreters that are free-of-charge will be provided for all languages. You can use alternative compilers/interpreters, but you must understand that grading will be done in the provided environment. It is your responsibility to ensure that all assignment submissions compile and run cleanly in the grading environment.

In addition, the following online apps will be used for various purposes in this class. All are also free-of-charge to use as a student.

Brightspace / Important source of information regarding the course including documents, schedule, and slides. You will also take quizzes in Brightspace.

GitHub / You will submit homework on GitHub (except for the first homework).

Gradescope / Grading results for exams, homework, and projects will be published on Gradescope. These scores will then be transferred to Brightspace after the two-week grading appeal period for an assessment has passed (see Grading appeals section for more information).

Ed Discussion / Exchange of questions and answers regarding course material can be done on Ed Discussion. Questions regarding course assignments should be posted here rather than being emailed to the course instructor or TA. You are encouraged to answer questions from other students. Please make sure you read and understand the rules for using this tool; in particular you are not allowed to post computer code that deals with an assignment.

TopHat / Draft lecture slides will be available during class time on TopHat. In addition, Top Hat will be used for attendance and in-class activities.

ACADEMIC HONESTY

Unless otherwise specified, all work that you submit must be done individually. You are allowed to use large language models (e.g., ChatGPT) to assist you with homework and project assignments to enhance your learning.

– You **may not** seek assistance from a student who has taken CS 3270/5270. This includes obtaining any type of material from such a student (e.g., descriptions and solutions to past assignments and exams).
– You **may not** assist or be assisted by a student presently enrolled in CS 3270/5270.
– You **may not** assist future students of CS 3270/5270.

MATERIAL COPYRIGHT

All course materials, including (but not limited to) lecture slides and assignment descriptions, are the property of the course instructor. **Do not** share or post these materials as such actions may constitute a copyright infringement violation.

SCHEDULE

The tentative course schedule is available on Brightspace under **Content | Schedule**. This schedule includes a summary of the topics that will be covered, the dates for the exams, and the due dates for homework, projects,

and quizzes. The instructor reserves the right to make changes as necessary to the schedule. Any changes will be announced in class.

FINAL GRADE

Your final course average is based upon the following areas.

20%	Homework
20%	Projects
50%	Exams†
7%	Quizzes
3%	In-class activities

†The two lowest exam scores will be worth 10% each and the two highest exam scores will be worth 15% each.

The average is calculated as follows:

$$\frac{Sum\ of\ all\ pts\ received\ in\ Homework}{Total\ possible\ pts\ for\ Homework} \times 0.2 \ + \ \frac{Sum\ of\ all\ pts\ received\ in\ Projects}{Total\ possible\ pts\ for\ Projects} \times 0.2 \ +$$

$$\frac{Sum\ of\ two\ lowest\ exam\ score}{Total\ possible\ pts\ for\ these\ exams} \times 0.2 \ + \ \frac{Sum\ of\ two\ highest\ exam\ scores}{Total\ possible\ pts\ for\ these\ exams} \times 0.3 \ +$$

$$\frac{Sum\ of\ all\ pts\ received\ in\ Quizzes}{Total\ possible\ pts\ for\ Quizzes} \times 0.07 \ + \ \frac{Sum\ of\ all\ pts\ received\ in\ In-class\ activities}{Total\ possible\ pts\ for\ In-class\ activities} \times 0.03$$

Final grades for this course are based on your final course average as follows in the table below.

A+	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
0.98	0.92	0.90	0.88	0.82	0.80	0.78	0.72	0.70	0.68	0.62	0.60	

An Incomplete (I) grade is a temporary placeholder for a final grade that will be submitted at a later date. The grade of I is given only under *extenuating circumstances* and only when a *significant body of satisfactory work* has already been completed in the course. For additional information, please see the Undergraduate Catalog.

HOMEWORK AND PROJECTS

Assignments (i.e., homework and projects) will be submitted on GitHub (except for the first homework which will be submitted on Gradescope). A demonstration on how to submit assignments on GitHub will be presented in class.

Your recorded submission of an assignment will be the timestamp of your last Git *push* to GitHub.com and not the timestamp of your last Git *commit*. However, note that you will typically perform a push immediately after performing a commit. Just make sure you do both before the deadline.

Late submissions are only accepted **up to 24 hours** after the original deadline of the assignment. **Any submission after that will not be accepted**. For example, if the deadline of an assignment is August 22, 2025, at 11:59 pm, then late submissions will be accepted until August 23, 2025, at 11:59 pm. Any submissions after that will not be accepted.

– A late submission that is up to 24 hours late will incur a **20% late penalty**.
– **Do not** perform a GitHub push after the deadline unless you are submitting late, otherwise, the submission will be marked as late and the late penalty will be applied.
– This course **does not** provide any free late days.

A submission beyond 24 hours after the original deadline will only be accepted for a serious reason that is accompanied by documentation. A student health card note is not considered documentation. It is highly encouraged that you start an assignment as soon as it is assigned rather than wait until just before it becomes due.

EXAMS

Four exams will be administered in this course and are paper-based and closed-book. The material for each exam will generally cover topics that were not covered in the previous exam. Some exceptions may apply, which will be announced. Exams must be taken with the section that you are enrolled in, otherwise, a 20–50% penalty will be assessed. A makeup exam will only be considered for a serious reason that is accompanied by documentation. A student health card note is not considered documentation.

School-sanctioned activities that conflict with an exam such as attending an academic conference may be considered for a makeup exam. However, student organization-sanctioned activities will not be considered. Regarding interviews, it is expected that an interview be scheduled around the exam time. However, if an interview cannot be moved after an attempt to move it was made, a makeup exam may be considered. Please contact the instructor as soon as possible regarding such scenarios.

The last exam (i.e., the fourth exam) will take place during the final exam period. To lighten the grading load toward the end of the final exam period, you will be allowed to take the last exam with a different section as long as that section's exam is earlier than your section's exam. **This arrangement only applies to the last exam** (i.e., it does not apply to the first three exams).

– You **must** state that you want to take the last exam with another section's earlier exam time (i.e., you **cannot** simply show up to the exam of another section). A form to state that you will attend another section's exam will be announced and provided a few weeks before the final exam period.
– You cannot take the last exam with another section whose time is **after** your section's exam time (i.e., taking the last exam with an earlier section is allowed, but taking the last exam with a later section is not allowed).

If you miss the last exam for **any reason**, a dean's notification will be needed to avoid a 20–50% penalty. Showing up to another section's exam during the final exam period without completing the provided form or taking the last exam with a section that is later than your section's scheduled exam time are both considered missing the exam.

QUIZZES

Quizzes are administered on Brightspace and are open book. You will be allowed to make multiple attempts to get the full points.

Like homework, late submissions are only accepted **up to 24 hours** after the original deadline of the quiz. **Any submission after that will not be accepted**. A late submission that is up to 24 hours late will incur a **20% late penalty**. A submission beyond 24 hours after the original deadline will only be accepted for a serious reason that is accompanied by documentation. A student health card note is not considered documentation.

IN-CLASS ACTIVITIES

In-class activities will consist of in-class polls and exercises on TopHat. To get the full points for the activities portion of the final grade, you must participate in all assigned in-class activities. If you will be absent for a class meeting due to attending a school-sanctioned event, having a job interview, or are ill, you may be excused from the in-class activity if one was assigned at the time of your absence. Make sure to notify the instructor before class of your absence and include documentation. For illnesses, you don't need to provide documentation for the first two instances, but you must provide documentation beginning with the third instance (of missing class due to an illness).

Any technical issues related to in-class activities on TopHat must be addressed before you leave class on the day of the activity. If any type of issue is reported afterwards, a maximum of two instances will be considered, and the reporting must be done no more than two weeks after the in-class activity itself.

GRADING APPEALS

If you have a question concerning the score you receive on an assignment or exam, you must bring your question to the appropriate staff member *within two weeks* of the score being posted. Note that the two-week appeal period starts when scores are posted on Gradescope. After two weeks, these scores will be posted to Brightspace. The posting of scores on Brightspace marks the end of the two-week appeal period (i.e., *do not* wait until scores are posted on Brightspace to make an appeal).

Questions on the grading of homework and projects should be brought to the attention of the TA who graded the assignment. If the problem cannot be resolved with your TA, only then should you contact the instructor. Questions about exam grading should be brought to the attention of the instructor. In both cases, use Gradescope's regrade request feature.

STUDENTS WITH DISABILITIES

Vanderbilt is committed to equal opportunity for students with disabilities, as I am. If you need course accommodations due to a disability, please contact Student Access Services (SAS) to initiate that process. After SAS has notified me of the relevant accommodation(s) and you and I have discussed how this (these) may best be approached in this class, I will facilitate the accommodation(s).

MENTAL HEALTH AND WELLNESS

If you are experiencing undue personal and/or academic stress during the semester that may interfere with your ability to perform academically, Vanderbilt's Student Care Network offers a range of services to assist and support you. I am available to speak with you about stresses related to your work in my course, and I can assist you in connecting with the Student Care Network. The Office of Student Care Coordination (OSCC) is the central and first point of contact to help students navigate and connect to appropriate resources on and off-campus, develop a plan of action, and provide ongoing support. You can schedule an appointment with the OSCC on their website or call 615-343-WELL.

The Student Care Network also offers drop-in services on campus on a regular basis.

If you or someone you know needs to speak with a professional counselor immediately, the University Counseling Center offers Crisis Care Counseling during the summer and academic year. Students may come directly to the UCC and be seen by the clinician on call or may call the UCC at (615) 322-2571 to speak with a clinician.

SEXUAL MISCONDUCT OR POWER-BASED PERSONAL VIOLENCE

If you have experienced sexual misconduct or power-based personal violence, please contact Project Safe, the VU Police Department, or the nearest emergency room as best fits your needs. If you share with me any information about such experiences, I am required by law to report this to Vanderbilt's Title IX Coordinator.

ACCREDITATION

Vanderbilt University's program in Computer Science is accredited by ABET (abet.org). Expected ABET student outcomes for this course include being able to analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.

SYLLABUS CHANGES

The instructor reserves the right to make changes as necessary to this syllabus. If changes are necessitated during the term of the course, the instructor will provide an announcement of the changes.