

# Principles Of Data Abstraction

Course Outline (Fall 2020)  
CSCI 2320

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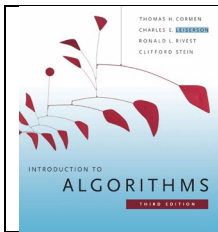
## Course Description

Principles of Data Abstraction is Trinity University's attempt to prepare professional computer scientists for both the "real world and graduate school; it is a blend of both theory and practical applications. CSCI 2320 is a three hour computer science course which surveys the C++ object-oriented implementations of lists, binary trees, threaded trees, advanced sorting and searching, indexing, tables, and storage management. This course combines applies the theory to actual applications. All programming assignments will be submitted and graded using Microsoft Visual C++.

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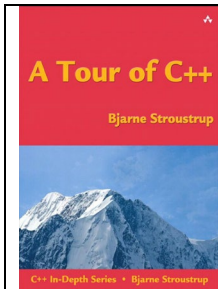
## Required Textbooks

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### Introduction To Algorithms 3<sup>rd</sup> Edition

by Cormen, Leiserson, Rivest, Stein



### A Tour Of C++

by Bjarne Stroustrup

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## Workload

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In order to do well in this course, most of you should plan on nine-ten hours a week reading chapters, studying slides, doing homework, using design tools, and doing design.

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## Attendance Policy → Bonus For Zoom With Camera On

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**Attendance & Class Participation is mandatory.**

- 1] Attendance will be taken during the first three minutes of class. **If You Are Not There When I Take Roll, You Are Absent For The Day**

- 2] Those folks attending the zoom sessions (with camera on).
- No More Than 2 Absences → will have 4% added to their class average  
No More Than 3 Absences → will have 34% added to their class average  
No More Than 4 Absences → will have 2% added to their class average  
5 Absences or More → will have 2% added to their class average
- 3] Some of the activities will be completed as a team; your team suffers when you are not here.
- 4] Each of you are given two excused absences for sickness or personal reasons. **SAVE YOUR ABSENCES IN CASE YOU ARE REALLY SICK.**
- 5] You will not be considered absent if you are
- a) attending/presenting at a university sponsored conference
  - b), off campus interviews
  - c) representing the university
    - university programming team competitions
    - university athletic team competitions
    - university debate competitions, etc.

If I am forced to cancel class for some reason, I will generally send class participants an email in advance.

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## Labs

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### Lab Assignments / Projects

Laboratory assignments/projects will be assigned regularly throughout the semester. All Labs & Homework Are Due At The Beginning Of The Next Class Period (Unless Specified Otherwise On Class The Schedule Page!) It is your responsibility to check the class schedule page daily. If you submit an assignment late (after the start of class on the date due) you must send Dr. Hicks an email so that he will stop the late penalty clock.

Each and every lab will have a pledge form. Electronically Signing the pledge form is the first step toward completing the lab. On some labs, you will be asked to initial various tasks, as you finish them.

Many of the labs will have some short answer questions. It is generally a good idea to complete those before doing any of the programming. You must complete at least 90% of the short answer questions. Note that some of the questions are worth more than 1.

Each student will be given a Mars DropBox account; In your folder will be "To Be Graded Folder" and a "Work In Progress" Folder. All of your assignments must be placed in the "To Be Graded Folder".

When you give Dr. Hicks the pledge form, you are saying that the items in drop box and that it is ready for grading.

No lab is complete until:

- (1) At least 90% of the short answer questions, if any, are completed.
- (2) The programming component, if any, has been placed in the "To Be Graded Folder" of all team members. Credit will be small, if any, for programs that do not complete the objectives.
- (3) If you are asked to pledge/initial sub-steps as you complete the lab, please initial those items once you verify that they have been completed correctly. Get help if you need it.

- (4) Do not submit the program for grading until steps 1-3 above are complete. Once I get the pledge form, I will often move the project folder to another location for grading.
- (5) Late penalties will continue to accumulate until the pledge form is submitted.

Assignments are due at the beginning of class. Labs submitted after the beginning of class are late! Do not come to class late or skip class in order to complete your assignments, this will put you behind on the new material!

Be sure to keep backup copies → Back up your work to your flash drive. Backup your work to your network folder. Backup your work to your personal computer.

Do not leave copies of your work on any university computer! → where others might have access to your work!

I do not debug programs mailed to me!

I do not accept labs by email – They are to be submitted with a Pledge Form!

Once the professor returns your graded homework, you may compare answers to the short answer questions with others on your team.

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## When Labs Are Due

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All Labs & Homework Due Next Class Period Unless Specified Otherwise On Class The Schedule Page!

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## 3 Exams

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Tentative Exam Schedule → You Will Have To Share Your Video During Exams

Exam	Date	Points
Exam I	9/24	200 Points
Exam II	10/29	250 Points
Exam III	12/1	250 Points

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## TU Required Video Sharing/Online Proctoring

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### You Will Have To Share Your Video During Exams

The University permits requiring students to share their online video if assessing learning outcomes necessitates video communication or to protect academic integrity. The University secured a license that provides faculty access to Respondus Monitor. The system allows instructors to create a secure, locked-down online environment for examinations; in addition, the tool uses AI for automatic exam proctoring.

As part of this course, you will be required to use Respondus Monitor or a similar tool on your computer while taking exams. This software allows for online proctoring by monitoring individuals on their computer webcam, as well as video analytics to identify potential cheating. Any recordings will be treated as an education record subject to FERPA protections.

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## Study Groups

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- 1) I encourage students to form a study group (comprised of other students in this class); what one person misses in their note-taking or concept grasping, another may have mastered quite well.
- 2) I encourage you to get together with your study group to prepare for Exams and/or Quizzes. Find a white board and practice working through problems. Quiz each other with the short answer questions. Ask others questions related to your class notes.
- 3) I encourage you to get together with your study group to prepare for Exams.
- 4) I have given you the freedom to share your short answer questions with your study group – providing that all have completed the assignments individually.

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## C++ Standard Template Libraries (STL)

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- 1) This course is all about creating and testing your own data structures. The C++ Standard Template Libraries include stacks, queues, linked lists, and a number of other data structures that we are going to use this semester.
- 2) You may not use these libraries for your labs unless the lab specifically directs you to do so.

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## Do Your Own Work

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- 1) You may not share your class work with others outside this class; it is a violation of academic integrity to share your work with others outside the class. Do your own coding!
- 2) If the lab is a team project, you may certainly share your work with your team.

Some professors allow you to share your work within the class. I do not provide answer keys for my short answer questions. Once the labs have been graded, I am give you permission to compare your answers with others in your study group (iff they also have also completed the work). This will not be considered a violation of academic integrity.

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## Last Date To Turn In Late Work

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No Late Assignments Will Be Accepted After Noon on the first Reading Day!

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## Late Penalties

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### Late Lab Assignments / Projects

If you place your assignments in your "To Be Graded" folder after the beginning of class on the date it is due, please send me an email so that I will know to stop the late penalty clock.

Normal late penalty shall no more than **25% Per Day** (MTWRF --> Saturday and Sunday not included).

Programs that do not work correctly are "worth little". If you, as a consumer, are given a TV that almost works, but there is no picture, the product is of little value; the same is true of programs that do not work. Your job is to make your code work within the given time frame! You grade will generally be much higher if a lab is turned in one day late and working correctly as opposed to turning in a broken program on time!

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## Take Good Notes

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- 1] We are using a formal textbook. Some of the material will be available on slides – some will not. Take good notes.
- 2] I know it is difficult to take good notes while typing along with the professor. One way to pull that off is to type comments in the code.

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## Website Links

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<http://carme.cs.trinity.edu/>

<http://carme.cs.trinity.edu/thicks/2320/Schedule.html>

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## Grade Breakdown

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Exams	<b>700</b>	<b>points</b>
Labs, Homework & Projects	<b>~700</b>	<b>points</b>
<b>Total</b>	<b>~1,400</b>	<b>points</b>

The Final Grade will be calculated by dividing the Points Earned By The Points Possible. Each student should record their quiz grades and retain all graded assignments from the entire semester. It is the responsibility of the student to maintain the number of points they have earned so that they can do a current grade calculation at any time.

## Grading Scale

A	93% - 100%	B+	87% - 89.9%	C+	77% - 79.9%	D+	67% - 69.9%	F	0% - 59.9%
A-	90% - 92.9%	B	83% - 86.9%	C	73% - 76.9%	D	63% - 66.9%		
		B-	80% - 82.9%	C-	70% - 72.9%	D-	60% - 62.9%		

Students will receive at least the grades indicated by the scale above

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## TU COVID-19

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Please let me know if you are having COVID-19 illness concerns.

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## Having Problems?

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1. Check your mail!
2. Seek help from group members.
3. Check With ACM Tutoring

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**E-Mail → [thicks@trinity.edu](mailto:thicks@trinity.edu)**

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## Can you send me email?

Yes! I try to check my e-mail once a day in the early morning, but I am sometimes detained by students. I do answer many short questions.

I do not debug programs mailed to me!

I do not accept labs by email – They are to be submitted with a Pledge Form!

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## Letters Of Recommendation

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### When Seeking A Letter Of Reference

- bring an informal transcript
- a letter listing work experiences, awards, scholarships, etc.
- a placement form to add the recommendation to your file (if applicable)
- stamped and addressed (typed) envelopes (if applicable)
- hard copies of significant programming efforts that I have not seen (computer science majors)

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## Academic Integrity

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The Integrity Policy and the Code share many features: each asserts that the academic community is based on honesty and trust; each contains the same violations; each provides for a procedure to determine if a violation has occurred and what the punishment will be; each provides for an appeal process.

The main difference is that the faculty implements the AIP while the Code is implemented by the Academic Honor Council. Under the Integrity Policy, the faculty member determines whether a violation has occurred as well as the punishment for the violation (if any) within certain guidelines. Under the Code, a faculty member will (or a student may) report an alleged violation to the Academic Honor Council. It is the task of the Council to investigate, adjudicate, and assign a punishment within certain guidelines if a violation has been verified.

Students who are under the Honor Code are required to pledge all written work that is submitted for a grade: "On my honor, I have neither given nor received any unauthorized assistance on this work" and their signature. The pledge may be abbreviated "pledged" with a signature.

My recommendation for students cheating is an automatic "F" in the course, a letter submitted to student affairs, and the proper following of Trinity University academic integrity policy.

Take great care to erase all labs from university computers so that others may not submit your work as their own! Do not loan any lab or project to a fellow student! Do your own work!

Before you resort to turning in someone else's work as your own, let's talk. If you are under undue pressure to aide other students in such a way that your own security is threatened, let's talk. It is not worth failing a three hour course and risking your entire academic future!

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## Disabilities

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Note to students with disabilities: If you have a documented disability and will need accommodations in this class, I expect that you will deliver your accommodation letter to me during my office hours early in the semester so we can discuss how I might prepare to meet your needs. Please make these arrangements with me as soon as possible once you have met with the SAS Coordinator and have picked up your accommodation letters. All discussions will remain confidential. If you have not already registered with Student Accessibility Services, contact the office at 999-7411 or [SAS@trinity.edu](mailto:SAS@trinity.edu). You must be registered with SAS before I can provide accommodations.

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## Office Hours

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**Office Hours:** [First Come- First Serve]

Day	From	To
Tuesday	8:30 AM	9:55 AM
Tuesday	2:00 AM	3:00 PM
Wednesday	10:30AM	2:30 AM
Thursday	8:30 AM	9:55 AM
Thursday	2:00 AM	3:00 PM

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## Office Hour Phone Number

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I will be working Off-Campus because of the virus; I will be available on the phone number **(210) 965-2444** during office hours (and more). If you need help, give me a call → we may well hook up in zoom room.

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## Zoom

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If I am working in an Off-Campus mode because of the virus, I will be conduct classes in the following zoom Classroom

Topic: Dr. Tom Hicks – CLASS

<https://trinity.zoom.us/j/92616329836>

**Meeting ID: 926 1632 9836**

**Password: CSCI**

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## Academic Policies

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The Office of Academic Affairs, following the guidance of the President's Task Force on Teaching and Learning, recommends including the following language on syllabi; these recommendations fall into three broad categories:

- Text for routine inclusion on syllabi (Honor Code, Title IX/Sexual Misconduct, Reading Days, Academic Support)
- Text that *must* be included if you plan on recording classes or requiring students to share their video during examinations
- Text that explains COVID-19 related interpretations of and exceptions to University policies (Excused Absences, Disruption of Class)

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## TU Honor Code

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All students are covered by a policy that prohibits dishonesty in academic work. Under the Honor Code, a faculty member will (or a student may) report an alleged violation to the Academic Honor Council. It is the task of the Council to investigate, adjudicate, and assign a punishment within certain guidelines if a violation has been verified. **Students are required to pledge all written work that is submitted for a grade: “On my honor, I have neither given nor received any unauthorized assistance on this work” and their signature. The pledge may be abbreviated “pledged” with a signature.**

This policy applies to all Trinity courses, so feel free to edit or add to the statement. It is in everyone's best interests to clarify in writing your policy about collaboration, electronic submission, attendance, documentation and research practices, or any other structural element of the course that might result in a student inadvertently violating the Honor Code. This includes specifying which electronic devices (if any) are allowed during an exam; if cell phones and smart watches must be turned off and stored away, please offer written instructions and indicate that failure to follow instructions constitutes an Honor Code violation. In addition, please encourage your students to ask when they have any confusion about any issue or procedure.



Will you also remind your students to sign/pledge all written work? Signing the pledge indicates that students have taken ownership of their intellectual property; like an artist signing a painting, the pledge signals pride in a job well done.

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## TU Sexual Misconduct Reporting

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All faculty and staff must report incidents of sexual harassment or sexual misconduct to Angela Miranda-Clark, Title IX Coordinator. Please consider explaining your role to students with the following syllabus text:

As a Responsible Employee who is committed to creating an environment where every member of our community can thrive, I want to let you know that I am a Mandatory Reporter. What that means is that I am required to report any instances of sexual misconduct, including sexual harassment, non-consensual sexual intercourse, non-consensual sexual contact, sexual exploitation, intimate partner violence, stalking, and related retaliation that I am aware of to the Title IX Coordinator. So, if you share information with me about any incidents that implicate the Sexual Misconduct or Anti-Harassment Policies, I am required to report all information to the Title IX Coordinator to make sure you have information about support resources and complaint resolution options. My report does not initiate the complaint process, and you are in control over how you choose to engage with our Title IX Coordinator. If you or someone you know has experienced sexual misconduct, including sexual harassment, I encourage you to share this information directly with the Title IX Coordinator or one of the individuals who has been designated as a confidential resource on campus. Information about reporting is available here: [Reporting](#).

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## TU Academic Support

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Please feel free to adapt the following to refer your students to the appropriate academic support structure on campus:

Trinity faculty hold students to the highest academic standards, but we also know that the very best students seek out help when necessary. The following resources are in place to support your academic success; learn more at [gotu.us/success](http://gotu.us/success):

Academic Success: time management, student skills, test anxiety, note taking, tutoring

Career Services: major exploration, career guidance

Counseling Services: mental health concerns, mental health referrals

Quantitative Reasoning and Skills Center: quantitatively-demanding coursework

Student Accessibility Services: accommodations for a diagnosed disability

Wellness Center: nutrition, sleep, stress management

Writing Center: starting a paper, finding a thesis, drafting and editing

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## TU Electronic Recordings of Classroom Instruction

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At the moment, I do not plan to record classroom instruction, but I retain the option to do so should we decide that to be appropriate.

In keeping with the principle of academic freedom, the University has no explicit policy covering the recording of classroom instruction. However, given the frequency and volume of such recordings in the context of TigerFlex and online learning, instructors who plan on recording online instruction must include the syllabus language found below. In addition, all recordings are subject to [Information Technology](#) policies and the [Family Educational Rights and Privacy Act \(FERPA\)](#).

The COVID-19 pandemic requires the delivery of online instruction. For this reason, please be aware that all classroom instruction, including student participation in classroom activities, is subject to recording and dissemination on the University's secure course management system (T-Learn). The recordings will be made available only to students enrolled in the course to facilitate online learning and review. Students are expressly prohibited from capturing or copying classroom recordings by any means; violations will be subject to disciplinary

action. Instructors who wish to use a recording outside of class must obtain the written consent of any students who are personally identifiable in the recording.

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## TU Policy Regarding the Disruption of Class

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The *Faculty and Contract Staff Handbook* authorizes faculty to remove disruptive students from the class roster. Policy Regarding Disruption of Class (6[B]XII): “Students will not be permitted to behave in such a manner as to disrupt the orderly conduct of classroom activities. When such behavior occurs, it is the responsibility of the instructor to discuss the matter with the student involved, warning the student that continuation of such behavior may result in dismissal from the class. If the behavior continues, the faculty member may drop the student from the class. ...”

The University regards the safety of students, faculty, and staff as a paramount concern. To ensure that all members of the University community work in tandem to create a safe learning environment, students are required to observe University health protocols (including wearing masks and maintaining adequate social distance) during class and between class periods. Failure to observe University health protocols will be considered a disruption of orderly conduct. In accordance with the Policy Regarding Disruption of Class, the instructor will issue a warning to the student; if the student continues to disrupt the class by failing to observe University health protocols, the instructor may drop the student from the class roster.

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## TU Health Protocols

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To ensure that all members of the University community work in tandem to create a safe learning environment, the University Policy on Protective Behavior requires that the following health and safety protocols be observed on campus at all times:

- Six feet of social distancing must be maintained
- Students must wear an appropriate face covering in classrooms and in areas where other students, staff, or faculty may be present
- Personal hygiene and proper cough/sneeze etiquette must be followed

Failure to observe University health protocols will be considered a disruption of orderly conduct. In accordance with the Policy Regarding Disruption of Class, the instructor will issue a warning to the student; if the student continues to disrupt the class by failing to observe University health protocols, the instructor may drop the student from the class roster.