Course Content Concepts

The students will be expected to be familiar with the following concepts, either by writing code to solve problems, or by diagramming the behavior of the more complex algorithms.

General Computing Principles:

1. abstraction
2. testing
3. debugging
4. problem solving

Concepts evaluated by coding:

- data types
- basic mathematical and logical expressions
- operations on arrays
- structures
- conditional statements
- iteration
- variable scope
- recursion
- manipulating images
- the use of variables for storing data
- arrays
- strings and character arrays
- file input and output
- selection
- functions and procedures
- plotting 2-D and 3-D data
- manipulating sound
- queues and stacks

Concepts evaluated graphically

- sorting data
- manipulating graphs

Course Materials

Programming Language & IDE

MATLAB is an excellent first language for engineers. It is an interpreted language that provides students immediate feedback from their actions, and postpones many of the tedious details of correctness until a program is run. MATLAB has an interactive development environment (IDE) that is ideal for ordinary engineering computation. The course is conducted from the MATLAB programming environment. MATLAB is a registered trademark of The MathWorks, Inc.

MATLAB is available this semester free of charge for students to install on their personal computers. There is a document under the Resources/Class_Info tabs in the left menu of T-Square with instructions for obtaining and installing the software. Be careful to set your affiliation to Student and select the version MATLAB r2014b for students. MATLAB is also available on all the public computers on campus.

Textbook

Computation for Engineering with MATLAB – Second Custom Edition for Georgia Tech, David M. Smith and Holly Moore
ISBN-10: 1-269-86532-3
ISBN-13: 978-1-269-86532-6

Engineering Computation using MATLAB - Third Edition, David M. Smith
ISBN-10: 0-13-256870-5
ISBN-13: 978-0-13-256870-8

Personal Response System (PRS)

Students ***will need*** to purchase a PRS or 'clicker', the ResponseCard NXT remote device by TurningPoint Technologies. The ResponseCard device is available at the Georgia Tech bookstore if they wish to participate in class feedback activities. The use of this system will result in a small amount of extra credit.

The mobile online PRS system, ResponseWare, will NOT be used in this class.

T-Square

All course information and resources can be found in T-square https://t-square.gatech.edu/portal to include: Syllabus, Assignments, Submissions, Announcements, Grades & Feedback, Resources, ….

- T-Square is NOT forgiving about due dates and times.
- T-Square submissions:
  - Check for your confirmation email ---- No email means nothing was turned in (it's tricky!)
  - Double check submission by downloading and running ---- It's the only way to be sure!!
  - You can resubmit updated files until the due date/time ----- but resubmit ***all*** files if you do resubmit
  - T-Square is hardcore about the due time. Imagine a train taking off whether or not you are fully onboard. It has no love.

Course Components

1. Lectures - Attend, listen and learn. This is usually where we will introduce new material. Bring your laptop to program in class. We will use the PRS (Personal Response System) in each lecture for in-class exercises.
2. Recitations - occur weekly, are required, begin the first week; and see Oscar for the schedule. Recitations are smaller groups of students led by two TAs. Example questions with discussion. Questions about the homework and interactive solutions, taking advantage of the small group setting. This time is occasionally used to return graded work and address any questions.
3. "Help Desk" - group-oriented help for specific homework and lab questions, and more general help on other topics. Help Desk hours will be announced on the course T-Square site.
4. Weekly homework (up to 14 assignments) – help students to learn the topics in depth. Apply the material covered in lecture to programming problems. Assignments are posted on T-Square, the Georgia Tech course management system, and must be submitted on T-Square. Homework sent by e-mail is ***never*** graded.

5. Tests (3) - will demonstrate your understanding of the course material. Focus on applying concepts and skills learned in homework to new problems.
6. Final Exam - cumulative assessment of everything in the course.

Lecture and Recitation Attendance are required, and it is assumed you are attending.

Course Policies

- **Open Door Policy**

  Each of the Professors maintains an open door policy. You are free to visit us during the posted office hours or by appointment. It is very important to contact us as soon as you feel that you might need to. Problems, unlike fine wines, don't improve with age.

- **Email Policy**
  - You ***must*** conduct all official email correspondence for this course using your ***official GT email*** account. This is to protect your privacy.
  - Include [CS1371] in the subject line of the email, followed by a brief description. For example, "[CS1371] lost homework 3".
  - Be professional in the email. Sign your name in the email.

- Academic Honor Code

  Every Student is expected to read, understand and abide by the Georgia Tech Academic Honor Code. http://www.honor.gatech.edu/

- **Collaboration Policy**
  - Academic misconduct is taken very seriously in this class.
  - Homework is designed to be a learning experience and is graded to assist the students in completing the programming content correctly. Collaboration is permitted and encouraged when working on your homework. However, the material you turn in must be essentially your own work. Submitting large bodies of material written by others without specifically attributing the authorship is plagiarism, and is not permitted on this course, or anywhere else at Georgia Tech.
  - For individual assignments, each student must turn in a unique program. Your submission must not be substantially similar to another student's submission. Collaboration at a reasonable level will not result in substantially similar code.
  - Collaboration with other students currently in this CS 1371 class is an important learning method. The following explanation will help you understand collaboration.
    - Students may only collaborate with fellow students currently taking CS 1371, the TA's and the Professor. Collaboration means talking through problems, assisting with debugging, explaining a concept, etc. You should not exchange code or write code for others.
    - Each individual programming assignment must be coded by you. You may work with others to understand concepts and data structures, but each student must turn in their own version of the assignment.
  - You are expressly forbidden to supply to another student a copy of your homework via electronic means. If multiple, similar copies are discovered, all participants, including the originator, will be prosecuted.

Collaboration is *NOT* allowed on tests/exams. All work should be your own. Attempt to view another student's answers, or use any unauthorized class notes, text books, articles, or any other documents (on paper or digital) is considered cheating.

Tests and the final are our primary means of assessing your understanding of course material. The tests will be administered in a supervised environment during lecture periods. The date and time of the final exam ***may not*** follow the usual final exam schedule on the Registrar's web site. Check for a separate CS1371 final exam schedule on that web site.

All answers should contain your own work exclusively. You should neither give nor receive inappropriate help during the taking of any examination, in compliance with the letter and spirit of the Georgia Tech Academic Honor Code.

- **Late Work Policy / Excused Absences**

No late homework, tests or exams are accepted in this class.

Any request for relief from the consequences of this policy due to incapacitating illness, death in the family, judicial procedures, military service, official school functions, or something similarly serious must be accompanied by supporting documentation and submitted to the Dean of Students Office. The Dean of Students Office will make the decision on the excuse, and contact your Professor directly stating what (if any) accommodations will be provided. http://www.studentlife.gatech.edu/content/stressed-or-distressed

If you miss your test / exam period without prior approval or a valid excuse, you may take the test at a period following yours. However, you will be penalized 25% of your test score.

****CAUTION: the preprinted note from the infirmary stating that you visited the infirmary is not sufficient documentation.****

Problem Escalation policy

If you need help and/or have a problem, you should contact the following people:

(1) Your TA
(2) Your Head TA
(3) Your Professor (e-mail addresses on the class web site)

If you are not comfortable talking to your TA about a particular issue, please contact the professor.

Where to Find your TA:

- Help Desk is located in Clough 272
- TA Office is located in CCB 109.
- Schedule of Help Desk hours will be posted on T-Square. You may see any CS1371 TA

Grading Policies

- **Grading Scale**

There is no curve in this course. However, we may elect to include extra credit assignments at various times during the semester. The grading breakdown is as follows:

Homeworks	15%	5% ABCs, 95% Coding Problems, 10% Comments (yes, that adds up to more than 100%...extra credit!)
Tests	45%	Three tests, at 15% each
Final	40%	The final is an important part of your grade!

Letter grade assignments are given according to the following cutoffs with no rounding:

90.0 <= A < = 100

80.0 <= B < 90.0

70.0 <= C < 80.0

60.0 <= D < 70.0

0 <= F < 60.0

- **Pass/Fail Criteria**

  Pass/Fail grade assignments are given according to the following cutoffs with no rounding:

  70.0 <= S < = 100

  0.00 <= U < 70.0

- **Appealing Grades**

  You have the right to question your grade on any assignment; but you must initiate discussion about the grade in the following ways:

  - Homework grades may be appealed within **one week** of receiving the grade. They should be sent via email to the TA for your section. In the email, include your T-square id and a clear description of which questions you would like reviewed and why.
  - Regrades for **tests** must be requested in writing before leaving the meeting at which your test was returned.

  Grade issues addressed outside the requirements listed above will not be considered. Pay attention to your grades. If something doesn't look right, address it immediately! Be sure to follow the guidelines outlined in the "Problem Escalation Policy".

  It is your responsibility to ensure that all the grades in T-Square are correct ***before finals week.*** After that, the only grade discussion will be about grading your final. Any discussion of your grades after the final exam must be done in person, and ***cannot occur*** until the 3rd week of the next semester you are on campus. (Study abroad not included.)

Assignments

Due Dates/Times

Assignments are due electronically as indicated on the class T-Square Assignment page. The system will accept multiple submissions; we strongly recommend that you make partial submissions as you complete parts of the assignment. Be aware, however, that if you are submitting multiple files

and you resubmit, all the files must be uploaded again. After any submission, you will receive a confirmation e-mail. Check to be sure you have submitted the files you intended to the assignment you intended. Note that saving a file is not the same as submitting it on T-Square.

Homework Re-Dos

For each homework assignment, you will be given an opportunity to submit a second time. You have the following options, and resulting outcomes:

- **Do no resubmit anything** --> Your overall grade for that assignment will be based only on your first submission. You will NOT be penalized for not re-submitting.
- **Resubmit ALL files** --> Upon resubmitting, you MUST resubmit ALL files for the entire assignment (even those that you did not change). Your overall grade for that assignment will be based on the average of your two submissions (the last submission from each submittal period for the given assignment).

We do NOT guarantee you will receive feedback on your first submission before the second submission is due.

Comment Grades

You will only receive credit for comments included in your first submission. Whatever grade you receive for comments on your first submission will be carried over to your overall grade for the second submission. Comment early, comment often!

Help!!! (Resources)

There are many resources available to help you succeed in this course (listed below). If you are struggling with a topic, make sure you seek assistants from these resources. The sooner the better! It doesn't hurt to be proactive either. Read ahead. Do extra practice problems. Meet with your TA and/or professor regularly.

- **The Textbook** - A great resource for all of the topics covered in lecture. Be sure to check out the practice problems and the end of each chapter.
- **Online Lecture Notes** - Each professor posts their source code from lecture. You can find these files linked from the class T-Square site.
- **Help Desk** - TAs will be available for individual help. Watch the Announcements page for details on dates, times, and locations.
- **Last Week Tonight** - TAs will hold occasional content review sessions throughout the semester. Watch the Announcements page for details on dates, times, and locations.
- **Office Hours** - Your professors will hold regular weekly office hours. You may also schedule appointments outside these hours if need be.
- **Yourself!!!** - It is up to you to seek out these resources as you see fit. However, as with most things in life, you will only get out of these resources what you put in. Come prepared with questions, and be ready to work hard.

Course Expectations

This course is about programming, and is more closely related to creative writing or learning a musical instrument than to any "science." As with writing or music, you cannot learn by watching or reading a book, even a great text book like ours! ***The only way you learn to program is by programming.*** It will be difficult at first, but will get easier as you gain experience. Get started. Now. The following guidelines are supplements to, not replacements for, your practicing programming skills yourself.

1. Attend lecture on a regular basis and keep up with the reading. These are the ONLY sources of new material to be learned. Readings should be completed before class on the date indicated on the Calendar.
2. Try the code done in lecture – don't be afraid to edit it, change it, and see what happens. In fact, type along during the lecture!
3. Participate in all discussions and ask questions about the material. This is your best opportunity to review the material and see examples to solidify your understanding.
4. Visit your Professor's office hours with questions about grades and the course materials. This is your chance to have one-on-one contact to take care of individual questions and issues.
5. Refer to the course forum (currently hosted by Piazza) to have discussions about course material with your classmates and the TAs. This is where you can have general-interest questions answered outside lecture and office hours. You are also expected to follow good newsgroup etiquette. This keeps the newsgroups usable in a large class like CS 1371.
6. Complete every homework assignment and use it as a learning opportunity; use collaboration in order to gain a better understanding, not to get the work done faster. This is your chance to learn the material in preparation for the test; not having a solid understanding of the homework *will* lead to poor performance later (i.e. tests, other homework and the final exam). Learning to program is like learning a sport. It takes actual practice to become comfortable and proficient at coding.
7. Take responsibility for your coursework submissions; it is your job to make sure that you successfully turned in what you meant to turn in and verify your submission by retrieving and checking your files. This is how you make sure that you get credit for the work you do.
8. Be prepared when you go to get help from a TA or your Professor with specific questions. Bring your work (on computer media) and any other relevant materials to the meeting.
9. Take initiative. You will only get out of this class what you put into it. Begin your assignments early and if you think you need help, come prepared. Use the resources that are provided for you, and be determined to succeed from the start.
10.

Miscellaneous Reminders

1. You are responsible for turning in assignments on time. This includes allowing for unforeseen circumstances.
2. You are also responsible for ensuring that what you turned in is what you meant to turn in. The course support software includes a retrieve submission feature. USE IT. This allows you to retrieve what you submitted and ensure that the submission process was complete. Every semester, students manage to lose credit for assignments because they unknowingly fail to complete the submission process. Following every submission with a retrieval of that same submission will allow you to be sure this does not happen to you.

3. Finals and tests must be taken at the scheduled date and time. Any change to your Test or Final time must be approved in writing by your Professor two weeks before the affected date. Please do not ask for special treatment because you have purchased non-refundable airline tickets. The safe time to travel is after finals week. The finals schedule published at the beginning of the semester is **TENTATIVE**. The official schedule is published very late in the semester.
4. If you have any personal issues (family/illness/etc.) please go to the Dean of Student's office as soon as possible. Their office is located in the Student Services Building (Flag Building) next to the Student Center. They are equipped and are authorized to verify the problems. They will issue a note to your Professors making them aware of the problem and requesting whatever considerations are necessary.
5. The class announcements should be read every day. Official announcements about course matters will be posted there. The general course forum (Piazza) is for posting technical questions about assignments, tests etc. Complaints, questions about your personal problems, etc. should be discussed with your Professor in person or via email.
6.

Final Times and Places

CS1371 administers a common final exam which has a special place on the Registrar's final exam schedule. Please be aware that the final exam times for all classes shown on the Registrar's schedule are tentative — do not make travel plans around them!!! **The date and/or time are subject to change. GA Tech announces the actual final exam schedule much later in the semester.**