BMED 1000 - Syllabus for Fall 2026

Intro and hello

Welcome *to/back to* GT & BME!

We (the BMED1000 instructional team) are glad that you will be in our course and that you are becoming part of the BME community.

Our syllabus, aka this document, outlines how we run the class and contains all the information (and a few "easter eggs") that you will need to navigate BMED1000. For this class we treat the syllabus as a contract between you (i.e., an individual student) and us (i.e., the instructional team) that defines what each of us will do to help the other learn. If you have any questions about the syllabus please ask - seeking information to ensure you are solving the right problem is probably the most basic engineering skill. One of our responsibilities is to be clear, so if you have questions it is our job to answer them.

Part of how we have designed this class is specifically to develop skills that will help you succeed in the rest of your time at GT. Said a different way, we try and teach students 'practical competence' (i.e., adulting) alongside the foundational skills of biomedical engineering in BMED1000. By practical competence we mean, turning work in on time and correctly, knowing and following collegiate-style course policies, and attention to detail. So, if you are wondering why we do certain things a certain way ask, we think we have good reasons and will happily explain. We also listen to feedback and change when students bring us a good argument as to why what we are doing isn't working or how to do better. If you are curious about how this works long term, ask the TAs. Most were hired *because* they disliked some element of the class and told us about it, but now see that aspect as really important in later classes.

As part of the 'practical competence' effort, we typically are rigid about class policies. However, we are intentional about ensuring those policies include ways of allowing you to make mistakes, and learn from them, in low stakes ways. We see you as humans, as people, and as adults, before students – and treat you as such. We do this because we care about you and preparing you for success at GT. We typically aim for what we call 'empathetically inflexible' but also acknowledge that also emphasizes our responsibility to ensure we are supporting students in the learning environment that we create.

If you have questions, ask. If you have emergencies, tell us – as soon as possible. If you just messed up, own it and we will work through things together. And, if we can do something better, let us know. We look forward to having you as a member of our course and the BME community.

Course description

Our course goal is for you to get the most out of your experience in the **B**io**m**edical **E**ngineering **D**epartment (BMED) at Georgia Tech. This is also your welcome to our department, community, and discipline.

We designed the course to develop three areas of knowledge: 1. Design thinking - using empathy and tools for understanding users to engineer better products. 2. Linking design thinking to the development of your individualized entrepreneurial mindset - to encourage you to exercise your curiosity, to see connections, and to appreciate the diverse ways you can create value. 3. Linking design thinking and your entrepreneurial mindset to help you define and create your personal vision of biomedical engineering. We will ask you to reflect, study, and appreciate your past influences and the opportunities of BMED while you build stories that represent your capabilities as a budding biomedical engineer. We believe that this course should be about your discovery of *your* BME, not just you adopting what we think BME is.

We designed this class to help you apply these three areas of knowledge to think critically as you learn about BME. This will be critical in the rest of your time in GT BME as well as your career. In our careers, we were rarely told how to do something – engineers are often just told to figure it out! This course adopts the same mindset, but with a little more structure.

Class structure

The structure of BMED1000 is slightly more complicated than a normal class, but we do this to try and ensure a personalized, small group setting that maximizes learning and your sense of belonging in your new BME community. Here is what you need to know:

- Each section meets once per week for 50 minutes
- Each section is divided into two subsections – GOLD and BLUE
- This class is divided into the design portion, and the discussion portion.
- The Gold and Blue subsections will alternate portions – one subsection is in the design portion while the other is in the discussion portion, the next week they switch. (see schedule)
- In the design portion of the course you will work on a realistic BME design project
- In the discussion portion, you will work with your peers and TAs (your more experienced peers) to discuss and do things that will help you succeed in this department and field.

Course learning objectives

Upon the successful completion of this course, students will…

1. Develop a plan to align their interests to personal and professional development opportunities during their time as an undergraduate student. To do that you will:
    a. Articulate the diversity of paths within biomedical engineering by connecting BME to their own interests, their own experiences, and realistic examples of BME work.
    b. Initiate the use of eportfolios, artifact curation, and storytelling as lifelong tools for making meaning of their experiences.

2. Develop and integrate design thinking with an entrepreneurial mindset. To do that you will:
    a. Apply design thinking skills when solving ambiguous engineering problems.
    b. Explain how to use an entrepreneurial mindset to create value in different ways.

3. Integrate reflection as a habitual part of their engineering practice.

Assignments, grades, and associated policies

BMED1000 uses a grading system called 'specifications grading'. Each assignment is pass/fail and will be graded based on an explicit and objective set of *specifications* that list what you must do to receive a passing grade for the assignment. If you do happen to fail, forget to submit, or need to delay an assignment, you can do so using a Joker. Final grades will be assigned based on cumulative passing of assignments throughout the semester. All of this is described below.

A few upfront notes about grading:

- Turning in an unreadable, in the wrong place, or an incorrect/corrupted file is considered NOT turning in the work on time, but can be addressed using a joker.[1]
- All grades will be posted on canvas as soon as possible and will be accompanied by feedback on your assignment. The feedback and grade are totally independent[2]. If you have further questions, please seek out your TAs or your instructors and ask for further feedback.
- Grades are not negotiated or flexible. However, if you believe we made an objective error in our assessment of your work, see the regrade policy, we will take your concern seriously.

Assignment grading

Each assignment is graded as either pass (you get points) or fail (you get 0 points). All assignments will have a clear set of specifications for 'passing' that are stated in the assignment. In no case will passing require perfection, but it will require good work (think 'B' level). A passing grade is based solely on your submitted work meeting the specifications for the assignment. Some assignments will define minor and major categories of mistakes. Major mistakes relate to conceptual understanding of an assignment (e.g., you selected the wrong formula, even if you did the math correctly). Minor mistakes affect the assignment quality but do not disrupt your basic understanding of the topic (e.g., typos).

Due dates – probably the most important thing in the syllabus

One specification for passing any assignment is turning it in on time. If you were to fail an assignment for not turning it in on time – that is '*jokerable*' (see next sections to understand that). Assignments in this class are linked to either discussion or design sessions. Each is due no later than 11:59:59pm the night before the day of your next design/discussion (with a few listed exceptions).

As part of developing the necessary skills to manage your workload at GT, ***we generally do not list due dates on Canvas – it is your responsibility to keep track***. However, we do list everything in the syllabus and provide a spreadsheet with every single (exact) submission for each section (see canvas). The spreadsheet is at the request of students last semester. The only deadlines listed in canvas are those that deviate from the pattern – e.g., the final design report.

If you wonder 'why the heck do you do this' – here is why we think it's important: *"when you are in BMED1000 [due dates] feels like CHAOS, then you get into any other class and you realize that it was very structured and preparing you for the actual chaos of the way some other classes are run. It's like a scary safety net" (quote from former student)*

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[1] We know this sounds draconian but it is a policy you will encounter throughout your career. According to the National Science Foundation, 1/3 of grant applications are returned because they break rules – let's be the 2/3.

[2] Feedback in this case is what we call 'formative' aka feedback to help you see some new opportunity or point, or take things further or see thing differently. You will get formative feedback no matter how well you do on the assignment. Us giving that feedback is meant to show respect for you and the time you took to do the work.

Jokers

Each student is allowed to use 2 'Jokers'. A joker allows you to re-submit 1 failing assignment. That includes assignments that were graded as failing due to being late. If you use a joker, you have exactly one week from when you received a 0 (and comment) on your original submission to resubmit the assignment. To resubmit an assignment using a joker, you will submit it to one of the 'joker submission' dropboxes in canvas AND fill out the survey linked in the assignment dropbox. There will be 1 opportunity to earn an extra joker during cycle 5. All assignments are jokerable **EXCEPT** the final design report, portfolio showcase, and final portfolio assignments. Class attendance is not jokerable.

List of Assignments

The full list of assignments can be found in the schedule above. All assignments are worth 1 point with the following exceptions:

- The final portfolio assignment – counts as 3 assignments (it has two parts)
- The mid-semester design review – counts as 2 assignments
- The final design report– counts as 2 assignments
- *The BME insider mid-semester check-in – counts as 0 points but earns you an extra joker*

Final exam / Portfolio showcase

There will be a final exam in this class. We typically call it the portfolio showcase, and it is an opportunity to share and get preliminary feedback on the final portfolio you will create in our class. The portfolio showcase will be collaborative, participatory, and INTERACTIVE – NOT sitting at a desk writing silently on paper. You have two options for when to take the final – you do not have to attend both, and options will be announced on Canvas. The exam usually takes 90 min or less. **If you arrive late, you may not be able to participate**.

If you find that you have more than 2 finals in a day on all of these days, or have an exam conflict at all of these times, you must alert us no later than November 1st. We will accommodate you by moving our final exam. Because this is a one credit course, please do not ask other instructors to move their final exam to accommodate ours – we will move ours to accommodate theirs. *HOWEVER – flight schedules are not a reason to move the exam,* ***look at your exam schedule before buying plane tickets***.

Final Grading Scale

In total, it is possible to earn 18 points in our class from 14 assignments. You will receive a letter grade using the following scale. It follows a typical 90=A, 80=B, 70=C, 60=D scheme.

Grade	Assignments during course
A	16 or more points (>89%)
B	14 or 15 points (>78%)
C	13 points (>72%)
D	11 or 12 points (>61%)

Regrading

Regrading specifically means correcting errors made in grading. Regrading is important to us because grading your work is our responsibility and a sign of our respect for you. All regrades must be submitted via a written email to your section's instructor no later than one week after feedback on that assignment is returned to you. ***You must include in the request a***

reason why you would like a regrade. That reason should clearly identify the specification(s) on which you think we made a mistake, as well where in the assignment we should look to see that the specification was met. Regrades that do not do so, or request a change in grade for other reasons, will not be entertained.

General policies and expectations for our learning environment

These are key policies that you should know and are expected to follow

- **24hr rule** – You're responsible for any information posted on Canvas 1 day after its posted
- **Email policy** – To get us all on the same page (and help us out) we have an explicit policy about how to email us. First, when emailing us, please (1) use your name as it appears in canvas, (2) indicate which section you are in, and (3) clearly state a request or question. We try to answer email within 24hrs, but please allow us 48 hrs. We also typically do not check or respond to email on the weekends. We get a lot of email, this helps us & you.
- **Email address** – for your privacy and security, we can only communicate with you using a Georgia Tech issued email address.
- **Talk to us early and in emergencies** – While we do have a lot of rules, we are seriously committed to student success. We ask that you don't ask us to make exceptions to these policies for things within your control. However, if you have an emergency or other situation that you think warrants us making an exception PLEASE ASK. It helps if, whenever possible, you learn to talk with instructors **in advance**.

Attendance policy

Attendance will be taken during all class sessions. Attendance is expected; being in class helps you, your instructors, and your classmates learn. Summary:

- You must be in class unless you have a valid reason and tell the appropriate TA or instructor. If you are significantly late or leave significantly early for an unexcused reason, you may not be counted as present at our discretion.
- Any unexcused absences beyond one will count as a failed assignment. This is not "Jokerable."
- Being sick is a valid reason, but you must tell us in advance.
- If you are physically present but not participating (e.g. working on another class) you may not be counted as present at our discretion. The goal of the in-person course time is to work with your teammates, don't waste their time by working on something else.
- We also expect you to show professional courtesy and respect for biomedical engineering ethics and NOT come to class sick. If you are sick, that is an *excused* absence. However, we do monitor for abuse of this policy. We ask that you attempt to attend design classes virtually.

Academic integrity

Academic misconduct, including plagiarism and completing others' work for them, hurts you and your classmates and will not be tolerated in this course[3]. Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards and Tech's Academic Honor Code (http://www.catalog.gatech.edu/policies/honor-code/).

As a member of the Georgia Tech community, we assume that you have read and understood the Academic Honor Code. We will submit any cases where there is ***significant evidence*** of academic misconduct to the Office of Student Integrity, who will investigate the incident. We

[3] This is your notification that we keep an archive of submissions from all previous semesters we check work against

are then constrained to the results of that process. This is in accordance with the GT policy, developed with input from SGA.

Our minimum penalty for a first-time academic integrity offense is a zero on the assignment and our minimum penalty for a second offense in this class is an F in the course.

Collaboration and group work policy

In this class, assignments include both collaborative and individual work. If you are unclear about the definitions or boundaries of academic misconduct in regards to individual or collaborative academic work, it is explicitly your responsibility to seek clarification in advance.

Individual assignments should be your own work, although we encourage you to work together. What that means is that the intellectual output should be yours and yours alone, in your words, completed by you and you alone. On individual assignments, discussing with and learning from peers is acceptable. **We treat AI-based assistance, such as ChatGPT, similarly to collaboration with other people.** Submitting the work of others, in part or in whole, as your own work is not acceptable, regardless of whether the other person is a student in this course. *If, under this policy, you have questions on or need help with appropriate citation of others' work, just ask.* **It is better to ask now than to have to explain or deal with consequences later.**

For collaborative assignments, we expect all group members to participate in the intellectual labor of assignments. Students choosing not to effectively and meaningfully collaborate on such assignments should not expect to receive credit for the work of their teammates. In this course, **we consider placing your name on group assignments that you have not contributed to equitably to be academic misconduct.**

Office hours:

Office hours will be determined during the 1st week of the semester and **posted on Canvas** so that we can plan to accommodate as many schedules as possible. Some office hours may be in person, hybrid, and/or virtual. We will post a clear announcement once that is finalized.

Two notes about office hours…

1) You can go to office hours for anyone on the instructional team, you do not have to go to the hours from only the instructor/TA for your section.

2) What are office hours? Office hours are times when faculty and TAs are available to assist students with any matter related to the class. We ***STRONGLY ENCOURAGE*** everyone to attend office hours. Research[4] shows that students who attend office hours are significantly more likely to succeed in college courses. *We mention this because we have had people not realize how to use office hours until senior year. No bueno!*

Non-first year student specific policies

This course is mostly designed for students newly transitioning from high school to college. However, the course material and assignments are also useful for others, such as transfer students or students who changed majors. The assignments in this course are *research-driven*, meaning that they are influenced by research on what helps *any* engineering student succeed.

However, we also know some tweaks are necessary for different needs. Therefore, on most of your 'Plan-Do-Reflect' assignments, there will be specific instructions and different options to

[4] *Ventura, P. R. (2005). Identifying predictors of success for an objects-first CS1.*

meet your needs, experiences, and interests. To be clear, the options are only for you, the transfer student or major-changer.

Policies related to creating an equitable learning environment.

Some, most, or all of these may not apply to you but are probably worth skimming. We have a lot here to try and cover all eventualities. The list has gotten longer over the years as we identify have come upon new situations where it is helpful to have an explicit policy in advance.

Diversity, inclusion, and equity

We expect our classroom to be a place where you, and everyone else, are treated with respect. Our class will welcome individuals of all backgrounds, beliefs, bodies, and identities both visible and invisible. All members of this class are expected to cooperate in the creation of a respectful, welcoming, and inclusive environment for every other member of the course. If there are things the teaching team or others have done to degrade that environment we encourage you to bring them to our attention and we will work to correct them.

This statement is meant to express our values as instructors. Many of us are used to entering spaces (physical or otherwise) where we automatically feel welcome, but that is not universal.

Basic needs statement

Any student who has difficulty affording groceries or accessing sufficient food to eat every day or who lacks a safe and stable place to live, and believes this may affect their performance in the course, is urged to contact the Dean of Students for support and direction to available resources. Furthermore, if you are comfortable doing so, please notify Dr. Christian. These types of needs are a critical foundation for you succeeding in our (or any) course. They need to be in place before you can learn and perform at your best. Contacting us will enable us to direct you towards any resources that we are aware of or that are within our control – and let us know there are things beyond your control that we need to be empathic and understanding of.

Parenting and child care needs

If you are a parent and have specific needs related to child care, pumping, etc. Please let your instructor know so they can help with accommodations. Having children often is, but should not be, negatively impactful on your education. As a blanket statement, if you have a childcare failure that results in needing to bring a child to class or missing class – let us know and we will accommodate you.

Disability and accommodations

If you have a disability services accommodation letter, please contact Dr. Christian (specifically) as soon as possible with your letter. Dr. Christian is the course accommodations coordinator, and can collaborate with you on accommodations. If you need formal accommodations and have not already done so, you should also contact the Office of Disability Services at (404)894-2563 or http://disabilityservices.gatech.edu/, as soon as possible, to make an appointment to discuss your needs and to obtain an accommodation letter. We are happy to help with that if you have any questions.

Generally, we all need some educational accommodations because we each learn differently. Your accommodations might include captions on videos or a low distraction place to go and think during class. We are committed to supporting accommodations whenever feasible. For example, this syllabus and all other course documents are also available in the **Dyslexie** font upon request[5]. The font is designed to ease reading for those with certain learning disabilities.

[5] *Currently, the font is Georgia, because we are in Georgia and your instructional team really like details.*

Asking for help when you need it is an important life and engineering skill. It is also a skill that we want to help you develop through this course.

Preferred name / pronouns

We will gladly use the name or gender pronoun of your choice. If you wish us to use a name or pronoun different from that listed on the course roster, please advise your instructors of this as early as possible so that we may make appropriate changes to our records. At your preference, we will use preferred names in all cases or only when working with you privately.

Safe Zone

One member of the instructional team (Dr. Christian) has taken Safe Zone ally training and is available to listen and support you in a safe and confidential manner. As a Safe Zone Ally, she can help you connect with resources to address problems you may face that interfere with your ability to engage in academic and social pursuits on campus as it relates to issues of sexual orientation, gender identity, and other elements of your identity and life experience. Our goal is to help you be successful and to maintain a safe and equitable campus. If I (Dr. Christian) or the other instructors can help, we are always here to listen.

Major life emergency policy

During the semester, it is possible that a major disruption will occur in your life (death in the family, unexpected move, family issues, mental health, etc.) that prevents you from focusing fully on your studies. We are more than willing to work with students to manage such disruptions, but we cannot do so unless you communicate with us about it. You do not need to give us all of the details, but we do need to have some idea of the severity of the issue as well as how much it is disrupting your life. In cases where you have a major outside life emergency that are affecting you, please contact Dr. Christian as soon as possible so we can work with you.

Emergency Procedures

In the event of a fire alarm during in person classes, everyone must immediately evacuate the building until given the all clear by the fire department. In the event of an all hazards siren, everyone should immediately seek shelter in a safe location. In both cases, you should solicit additional clarifying information by all possible means: Georgia Tech Homepage, TV, radio, email, etc. Additional information about campus preparedness is available at http://www.gatech.edu/emergency/

In the event of a major campus emergency, including severe weather or a change to online education, course requirements, deadlines, and grading totals are subject to change that may be necessitated by a revised semester calendar or other circumstances beyond the instructor's control. Information about course changes related to campus emergencies can be accessed via Canvas and will also be distributed via email as soon as is practical. That is our responsibility, your first responsibility is the safety of yourself and your peers.

A contract

For this class we treat the syllabus as a contract between you (i.e., an individual student) and us (i.e., the instructional team) that defines what each of us will do to help the other learn. We ask that you sign and return the below section of the page as your first discussion assignment. That communicates that you have read, understand, and agree to the provisions in the syllabus. If you have any questions or wish any clarification, please see us as soon as possible.

Welcome to our class!

Your instructional team

I, the undersigned, assert that I have read, understood, and agree to this syllabus.

Sign: _____ Date: _____

Print Name: _____ Section (A, B, C): _____