Georgia Tech | Center for Teaching and Learning

Learning Environment Toolkit

Promoting Student Learning and Academic Well-Being at Georgia Tech

To see the complete Toolkit on Creating a Positive Teaching and Learning Environment, go to **learningenvironment.ctl.gatech.edu**

Georgia Tech

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Dear Georgia Tech Colleagues:

In 2016, the Georgia Tech Task Force on the Learning Environment issued their report stating that a culture of civility, collegiality, and respect is the bedrock of a healthy instructional environment. "To produce a positive teaching and learning environment," states the report, "instructors and students must partner with one another in and out of the classroom. Mutual respect is at the heart of such a partnership…. "

The Task Force recommended that Georgia Tech raise instructor awareness of the learning environment and its overarching significance in guiding our educational practices. To implement this recommendation, Dr. Rafael Bras, Provost and Executive Vice President for Academic Affairs, requested that the Center for Teaching and Learning (CTL) create a "toolkit" that would help faculty and teaching assistants create positive learning experiences for Tech students. As Provost Bras stated recently, "We must ensure that Teach is a learning environment that serves as a lasting example of our institutional values of integrity, respect, community accountability, and adaptability."

Using evidence-based research and best practices, along with insights from faculty and students, the Center has now published a toolkit which highlights how seven dimensions of teaching impact the learning environment. This online resource can be found at www.learningenvironment.ctl.gatech.edu.

What follows here is a brief excerpt from the Toolkit with key points about the seven dimensions, comments from faculty and students about the dimensions, and teaching strategies that enhance each of the dimensions. In addition, you'll find information about a new area of the Toolkit that is under development. In response to the initiative on "A Path Forward – Together," the Center is now developing resources to help faculty and TAs create conditions for well-being in our Georgia Tech learning environments. We look forward to your contributions as we expand our Toolkit!

Sincerely,

Dr. Joyce Weinsheimer,
Director

Dr. David Lawrence,
Associate Director

Communicating Expectations

Studies show that students who understand their instructor's expectations for an assignment will perform better than students who do not have that understanding.

Instructors who effectively communicate how to succeed in their courses typically provide students with clear statements of course policies, share grading criteria, provide feedback on student work early in the semester, and reiterate their course learning outcomes throughout the semester.

Research shows that first-year students, first-generation students, and some international students can underperform because they do not know how to best navigate college classes. They may not know what to expect in college-level work, or may be uncomfortable initiating communication with instructors, even when they are struggling. By clearly communicating expectations to students, instructors can help remove barriers to learning for some of these students.

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- Communicate your expectations clearly in the syllabus and on the first day of class.
- Provide explicit, detailed explanations for class assignments.
- Use Canvas to assist in communicating class expectations.

- Communicate your expectations about the role of attendance and participation in class success.
- Use class time to explain your expectations for student academic work and classroom behavior.

Advice from Award-Winning Faculty:

Do not:

Instead:

Assume the syllabus is self-explanatory.

Establish a learning community in which students feel comfortable asking clarifying questions when needed.

Share contact information and office hours just once.

Demonstrate your accessibility to students, indicating how you can best be contacted. Show students what they can expect from you in terms of assistance and support when facing challenges.

Place artificial barriers between yourself and your students.

Introduce yourself, identify your personal teaching style and rules, and demonstrate enthusiasm for what and who you teach.

Create mystery about the grading process.

Provide clear expectations for assignments, due dates, and grading procedures.

Single out students who are late, confused, or otherwise different from the group.

Establish a culture of trust and safety for future engagement within the class.

Present yourself as the importer of course knowledge or source of information delivery.
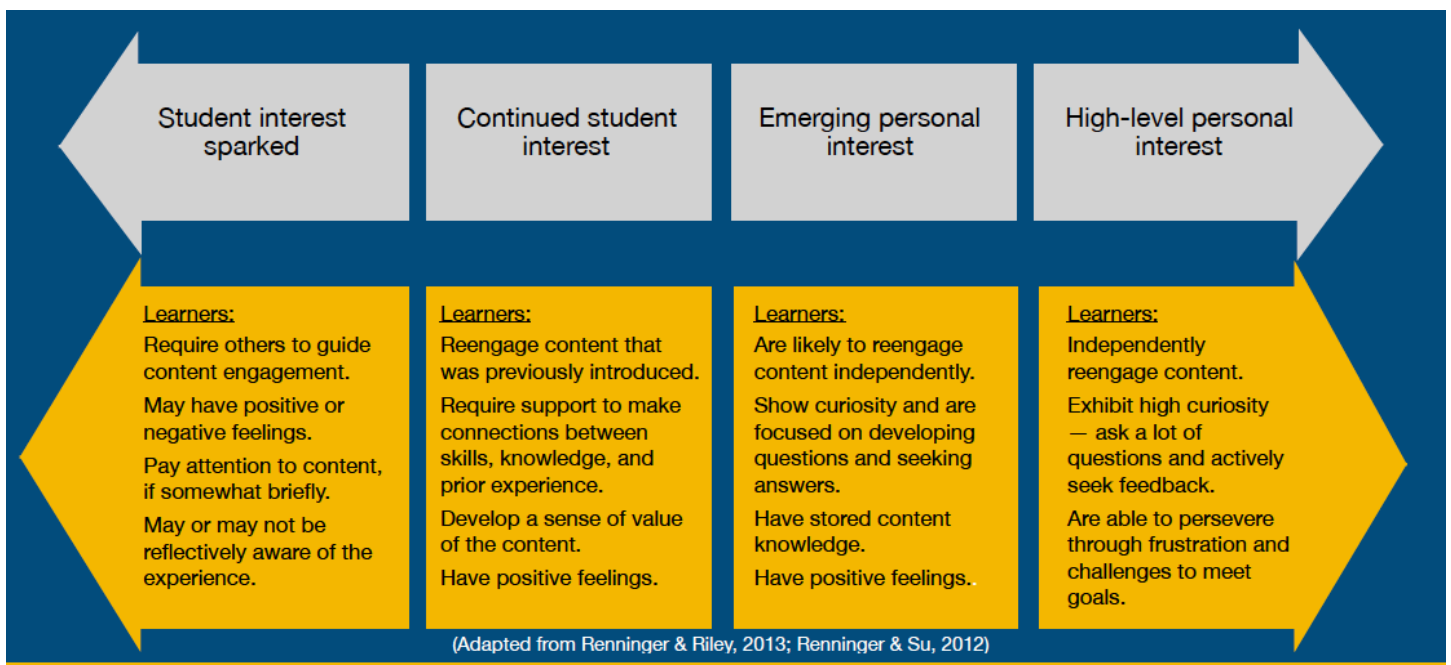
Find out students' prior experiences and understanding of the course material, and focus instruction on student learning needs.

Take for granted that students will understand your expectations for class participation.

Share criteria for evaluating student participation, and establish ground rules for class discussion.

Stimulating Student Interest

When students are interested in the content they are learning, they tend to learn more. Further, student attitudes about learning tend to improve as their interest is stimulated, leading again to greater levels of learning. As student interest increases, so do other positive learning behaviors–like generating questions, independent problem-solving, seeking deeper explanations, and more. In addition, as levels of interest increase, students are more likely to engage in course-related activity (e.g., studying, working on projects, etc.) for longer periods of time – positively influencing student learning.

Student interest sparked	Continued student interest	Emerging personal interest	High-level personal interest
Learners: Require others to guide content engagement. May have positive or negative feelings. Pay attention to content, if somewhat briefly. May or may not be reflectively aware of the experience.	**Learners:** Reengage content that was previously introduced. Require support to make connections between skills, knowledge, and prior experience. Develop a sense of value of the content. Have positive feelings.	**Learners:** Are likely to reengage content independently. Show curiosity and are focused on developing questions and seeking answers. Have stored content knowledge. Have positive feelings.	**Learners:** Independently reengage content. Exhibit high curiosity — ask a lot of questions and actively seek feedback. Are able to persevere through frustration and challenges to meet goals.

(Adapted from Renninger & Riley, 2013; Renninger & Su, 2012)

Strategies for Increasing Student Interest:

Create active and interactive learning experiences.
Student interest in content can be triggered and maintained through experiences where students are actively engaged with content and concepts instead of passively receiving information.

Introduce moments of novelty.
Use suspense and surprise, demonstrations, stories, and videos to promote curiosity.

Construct assignments that give students some degree of choice.
Research shows that students' choice of a topic of interest to them, not just the act of choice, increases their engagement, motivation, and interest in the content and task.

Help students see the purpose and value of what they are learning.
Students take more intrinsic interest in content and perceive content to be meaningful when they can make connections to materials that are relevant to their own experiences and goals.

Generate "ah-ha!" experiences.
By layering questions and engaging students in reflection on their responses—both in class and with out-of-class work—you can lead students along a path from a starting point to a realization of something important or noteworthy about the content they are learning.

Use verbal cues to demonstrate appeal of content.
Try using verbal cues to draw student attention to important and interesting ideas with statements such as "This next topic is really key because we will return to it again and again…"

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Providing Clear Instruction

Instructor clarity and organization influence student learning and performance by supporting student motivation and information processing, and by decreasing student anxiety about the course. Making course and content organization obvious to students helps them navigate the learning process and access the right information at the right times, for the right purposes.

Students think instructors are being <u>clear</u> when they:

- Use examples and illustrations to explain difficult points.
- Provide clear and carefully planned explanations for abstract ideas and theories.
- Present class materials in a well-organized manner with outlines, headings, and other cues to help students follow along.
- Use questions and other techniques to check for student understanding.

Students think instructors are being <u>unclear</u> when they:

- Fail to align assignments with course materials and objectives.
- Use class time inefficiently or assign activities that do not support learning.
- Appear to be disorganized or unprepared.
- Do not draw sufficient attention to key points.
- Rarely provide opportunities to check for understanding.
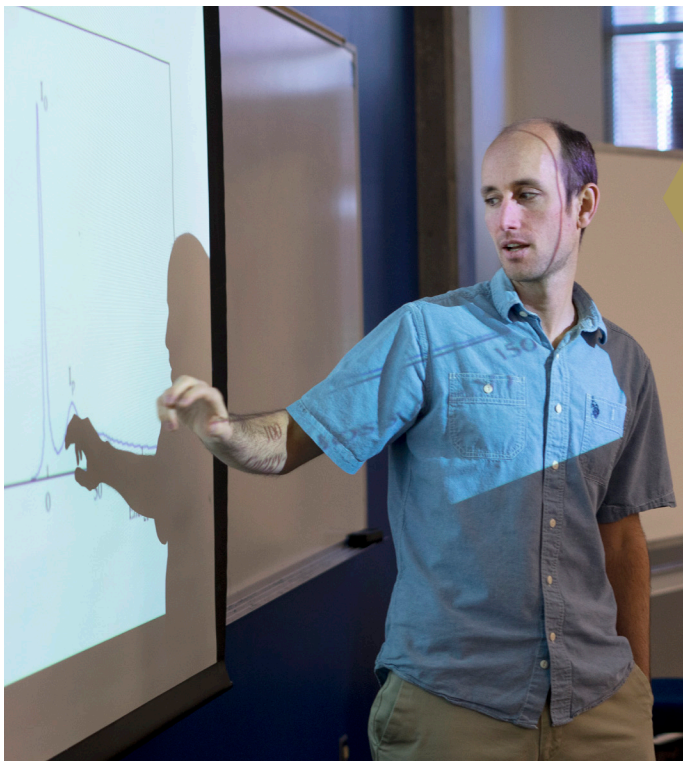
How Can I Enhance Clarity for Students?

- **Articulate well-formed learning objectives** and use them to drive your course design decisions. See ctl.gatech.edu/resources/syllabus for learning objective examples.

- **Incorporate lower stakes assessments** prior to major assignments or tests, so that students can see what is expected of them early in the course.

- **Link current concepts and content** with both previous and future concepts and content. Build in time to make specific connections between previous course content and current material.

- **"Chunk" information into sizes that students can understand.** Arrange chunks logically and sequentially to help students see how various concepts connect.

- **Prioritize material** that supports progress toward mastery of learning objectives, and reduce superfluous content.

- **Use verbal cues** (e.g., first, next, important) to signal transitions on the board, in slides, and in handouts.

- **Provide a list of conceptual questions** students should be able to answer (or tasks they should be able to complete) by the end of the class or unit.

- **Explain concepts** with examples, models, and stories.

- **Use Classroom Assessment Techniques (CATs)** to check student comprehension while you teach. When needed, take time to revisit areas of confusion and misunderstanding.

"You have the uncanny ability to teach dense material in a way that is easy to understand, and the analogies you drew between the mechanisms and abstractions of operating systems to the functions of a toy making shop provided an avenue that helped me recall information during exams." — from a "Thank-a-Teacher" note to Ada Gavrilovska, College of Computing

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Sharing Enthusiasm

Why is enthusiasm important? When instructors bring enthusiasm—or passion—to their teaching, they tend to create environments where students are engaged and motivated, while also connecting their positive feelings to their learning goals. How do students perceive enthusiasm? Students perceive the enthusiasm of their instructor through verbal and non-verbal cues. When certain features are present (see figure below), students conclude, consciously or unconsciously, that their instructors are passionate and interested in the content and the process of teaching it.

"Your class has been incredibly exciting, not only because of the relevant discussion on modern design principles, but also because you've been so enthusiastic and engaging. The fact that you've consistently provided relevant examples from your own experience about the things we learn has been incredibly eye-opening, and I'm grateful that you always provided abundant resources in case we wanted to look further into a subject."

— from a "Thank-a-Teacher" note to Robert Waters, College of Computing
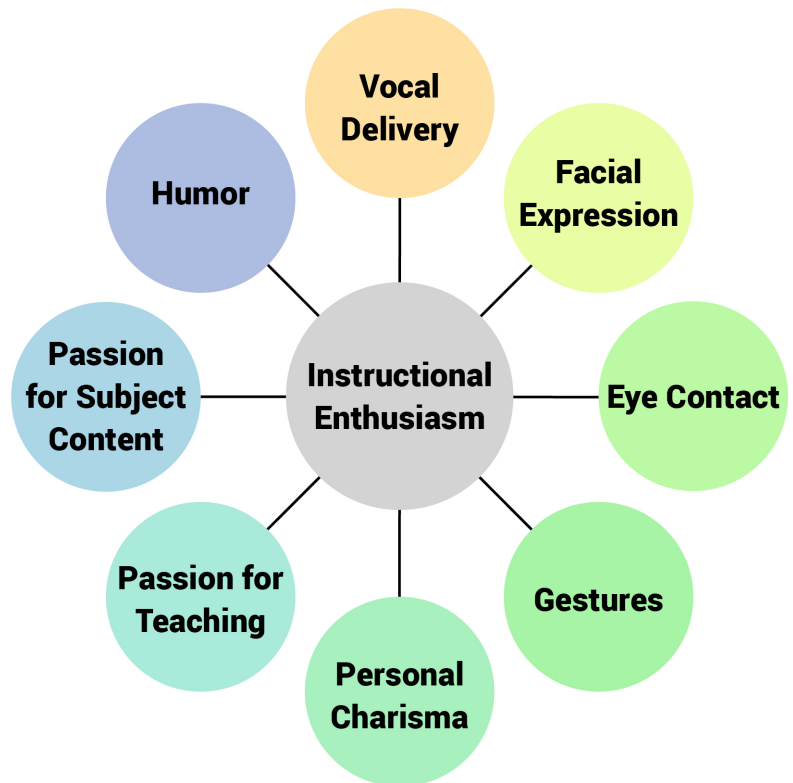
The features of Instructional Enthusiasm.

Let your passion for the subject and content guide you.
Students often view instructors as role models, so demonstrating your love for—and frustration with—content gives students permission to do the same.

Let your enjoyment of teaching come through.
Share with students some of the thought and preparation you put into the course, and some of your favorite moments from past classes.

Make connections to class material through stories and humor.
Stories and humor attract student attention, provide an anchor point for students' memory and schema building about class content, allow instructor and students to connect, and offer moments of levity that can reduce student anxiety and resistance to learning.

"This class has helped me appreciate linear algebra, and thanks to your contagious enthusiasm, I've come to enjoy the subject. I remember texting my friend right after class after learning the reason behind LU decomposition because it was so mindblowing."

— from a "Thank-a-Teacher" note to Yao Yao, Mathematics

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Showing Respect and Concern for Students

What does respect and concern for students look like?

- Listening to what students say.
- Providing students time to think and respond with their ideas.
- Recognizing students' ideas in a serious, valued manner.
- Exhibiting an interest in the academic success of your students.

Be consistent in your interactions with students.
Providing consistent interactions with students constructs a learning environment that students find relatable from class to class. Providing opportunities to one student, but not all, can be perceived as not caring about the academic performance of all students.

Listen to your students, and respond in a constructive manner.
Listen to students' questions so that you answer their concerns and not your perceptions, or expectations, of their inquiries. Do not engage in words or actions that embarrass or belittle students.

Learn the names of your students.
Students appreciate when you know their names and use them in class instead of just pointing at individuals.
Using your students' names is perceived as an indication that you care about their presence and well-being in the class.

Keep your word.
If you make promises to students or changes to the course, be sure to follow through with whatever you said you were going to do. Your students need to know they can count on you.

Exhibit patience with your students.

Students will occasionally frustrate you and may even test you. Respect and concern for students means treating them as equals, and not disparaging them, even if their actions are inappropriate.

Be prepared and act confidently in class.

Come prepared to class. Coming to class ill-prepared signals to students that you do not value their time and learning needs.

Treat students as emerging professionals.

A significant factor for building respect is how you treat others. As instructors, you can establish a class environment of respect and concern by engaging students as emerging young professionals in your field.

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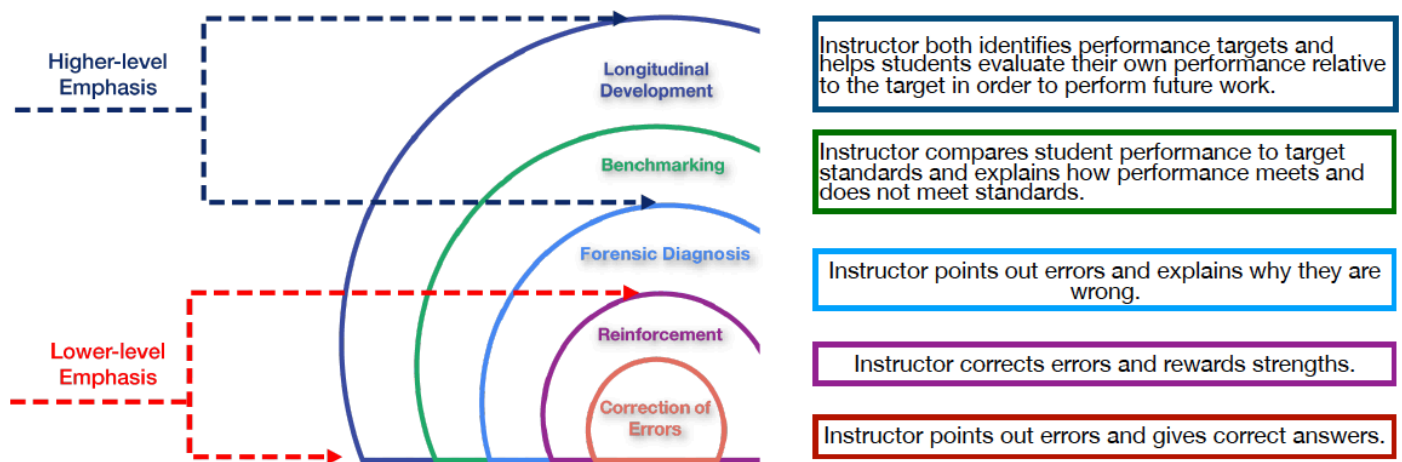
Providing Feedback

Instructors who give effective feedback to students aid their learning experience by correcting mistaken understanding, clarifying expectations, and helping students reflect on and improve their performance.

Helpful feedback contributes to learning by:

- Clarifying acceptable performance levels.
- Delivering quality information to students about their learning.
- Facilitating student self-assessment (reflection) of their learning.
- Encouraging dialogue between instructors and students and among students.
- Building student motivation and self-esteem.
- Reducing the gap between students' current and desired performance.

Nested Hierarchy of Instructor Feedback

Higher-level Emphasis

Longitudinal Development — Instructor both identifies performance targets and helps students evaluate their own performance relative to the target in order to perform future work.

Benchmarking — Instructor compares student performance to target standards and explains how performance meets and does not meet standards.

Forensic Diagnosis — Instructor points out errors and explains why they are wrong.

Reinforcement — Instructor corrects errors and rewards strengths.

Lower-level Emphasis

Correction of Errors — Instructor points out errors and gives correct answers.

(Adapted from Price et al., 2010)

Help students understand the purpose of feedback.

Use some class time to discuss the role of feedback in the learning process and provide guidance for students about how to use the feedback they will receive.

Provide feedback that is instructive and encouraging.

The best feedback models how errors should be corrected and provides a path for improvement. Pointing out when students do something well supports them in continuing those practices.

Direct feedback toward relevant aspects of the assignment.

Feedback should focus on the criteria or objectives that the assignment was designed to assess, as well as suggestions for improvement on future assignments.

Be timely with your feedback.

The faster your students receive feedback on their work, the more likely they are to read it, interpret it well, and apply it to future work.

For big projects, give feedback in stages that are clear, nested, and iterative.

Providing multiple opportunities for feedback on a major project or paper enables students to make improvements and develop the ability to evaluate their own work.

"Thank you Dr. Haas, for equipping us with strong fundamentals and entertaining quips. I really liked how you would make the class interactive and help us grow with a constructive feedback after our presentations. Though the assignments were tough, somewhere along [the way] solving the questions, I also solved my dilemma of corporate vs academia. You inspire me and make me realize [that] pursuing academia could be cool!"

— from a "Thank-a-Teacher" note to Kevin Haas, Civil Engineering

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Being Available to Students

Students identify interaction with their instructors outside of their class meeting time as an important characteristic of good teaching, expressing gratitude and appreciation for this access. Instructor availability is an important way to build rapport and relationships with students who benefit from opportunities to learn outside of class meetings.

Instructor availability can positively influence student behavior in the following ways:

- Improving relationships between students and professors.
- Increasing student motivation due to the additional emotional support received for educational pursuits.
- Encouraging students to share ideas and problems with instructors.
- Improving academic performance and understanding of course content.
- Increasing student confidence in career-related decisions.
- Reinforcing academic persistence.

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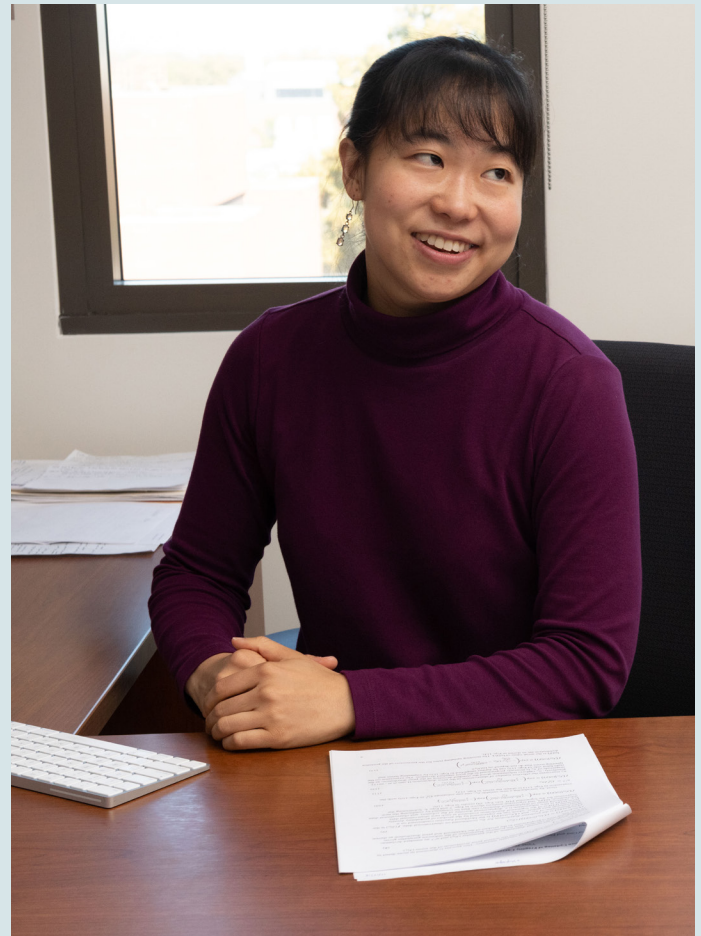
Strategies for Enhancing Instructor Availability:

- Help students understand the purpose and value of office hours.
- Communicate your availability to students frequently and through multiple channels.
- Respond to emails in a timely and understanding fashion.
- Set students at ease and communicate tolerance, empathy, and professionalism.
- Consider student schedules, preferences, and learning needs when scheduling office hours.

"Before exams, she sends out emails to let students know when her extended office hours will be. Furthermore, to help more students, she usually has an extremely brief lunch in her office in between classes while answering students' questions…as long as students have questions, she is always more than willing to have a little talk after class in the classroom or in her office."

— from a "Thank-a-Teacher" note to Tatiana Rudchenko, Scheller College of Business

"Thank you for dedicating so much of your time to making sure that students understand the material. I really appreciated the day long office hours to help us with the project."

— from a "Thank-a-Teacher" note to Adam Vitalis, Scheller College of Business

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Creating Conditions for Academic Well-Being

Flexibility:

Providing students with multiple ways to engage in the course offers them some control over their learning experiences and contributes to their sense of well-being.

Course Design
- Offer students choice in assignments.
- Give students an opportunity to set their own deadlines for assignments (within a specific timeframe) or percentage that the assignment counts for the final grade.
- Offer students the option to choose their "best two out of three" grades for assignments or quizzes.
- Offer opportunities for students to receive feedback on assignments/projects before the deadline.
- Give partial credit for revisions of graded work or correction of exams.
- Consider alternative forms of office hours (i.e. groups office hours, canvas chat, skype)

Classroom Practices
- Include students in decision making.
- Share your rationale for what you do to promote learning and invite alternatives.
- Seek anonymous feedback from students throughout the semester. Discuss your findings with students, and adjust when appropriate.
- Adapt to students' needs when something unexpected occurs.

Social Connection:

Facilitating interaction in class helps students build social networks with peers and relationships with faculty/TAs. Helping students make these connections invites a sense of belonging and well-being.

Course Design
- Begin the course by asking each member of the instructional team and each student to do an introduction to the group.
- Make activities a regular part of the curriculum.
- Integrate small group discussions/problem solving into daily plans.
- Make the quality of teamwork important by including points for the group process in grading rubrics.

Classroom Practices
- Start the first class with an "ice breaker" so that everyone gets to know each other.
- Be intentional about setting a welcoming tone in each class throughout the semester.
- Create class guidelines as a group to create a safe place for interaction and discussion.
- Facilitate a class check-in activity where students can share their experiences or discuss how they are doing at a particular point in the term.
- Move tables and chairs (when possible) into small groups to facilitate discussion, or ask students to stand and talk with a partner.
- Use active learning techniques and give students a chance to work together regularly.
- Encourage students to extend the connections they make in class to form study groups that work together outside of class.

It is widely accepted that health and well-being are essential elements for effective learning. But what contributes to student well-being in the academic learning environment? This section of Georgia Tech's Learning Environment Toolkit highlights four conditions that make a difference—note that there are strategies to consider from both a course design perspective and what you do in the classroom as well. Many thanks to Simon Frasier University and their Healthy Campus Community Initiative for sharing their groundbreaking work in this area.

Involvement and Engagement:

Providing students with the opportunity to make a real and valued contribution through their coursework creates a sense of well-being and satisfaction with the learning environment.

Course Design
- Give purpose to students' efforts by having them apply what they learn to a project that is relevant to them or to a real-world setting.
- Create assignments in which the results can be used by a campus initiative, a community group, a particular company, or state legislators.
- Incorporate service learning, experiential learning, or volunteering into the course.
- Consider what mindsets and skills students will use in life and/or their careers, and find ways to foster these attributes intentionally throughout the course (i.e. empathy, initiative, teamwork, communication, problem solving, etc.).

Classroom Practice
- Bring in guest speakers or program alumni who are practitioners in the course content area and can help relate the course material to real life issues.
- Use real world examples to demonstrate theories in class.
- Incorporate news stories and current events to illustrate relevancy of course material.
- Take students out of the classroom to real world settings.
- Highlight how students' efforts can make a difference to others locally, nationally, and /or globally.
- Spark awareness and interest in career pathways related to the course that students might not realize are possibilities to consider.

Optimal Challenge:

Challenging students to perform their best contributes to their well-being when we minimize unnecessary stress, provide on-going feedback about their learning, and connect them with resources that can support their success.

Course Design
- Set clear course goals, and make sure that expectations are clear from the start.
- Consider the timing of exams and assignments.
- Recognize that more tasks do not always lead to more learning.
- Avoid heavily weighted components, such as an exam worth 50% of the final grade.

Classroom Practice
- Share grading rubrics in advance.
- Provide activities where students can practice using key concepts without being penalized while they learn.
- Provide feedback on each stage of an assignment, and help students progress to the next stage of larger projects.
- Give targeted and timely feedback about strengths and weaknesses.
- Provide activities where students design mock study/ test questions.
- Tell students (and remind them at appropriate times) about academic support resources.

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