

INNOVATION, TECHNOLOGY AND DESIGN

New First-Year Student Admission to the Innovation, Technology, and Design Program (ITD)

Prospective students who wish to be considered for direct admission to the Innovation, Technology, and Design Program as new first-year students (<https://bulletin.miami.edu/general-university-information/undergraduate-policies-and-procedures/admission/freshman-admission/>) must apply to the University of Miami and select Innovation, Technology, and Design (ITD) as the major at the time of application submission. The Office of Undergraduate Admission reviews and manages all applications to the University of Miami.

To all students: Failure to pass MTH 161 prior to the start of the 5th semester of coursework in ITD constitutes failure to make progress toward degree completion and leads to dismissal from the ITD major.

Students admitted to other schools and colleges at the University of Miami who wish to transfer to the Innovation, Technology, and Design Program must follow the "Internal Transfer to Innovation, Technology, and Design Program" as indicated in the subsection.

External Transfer Admission to the Innovation, Technology, and Design Program (ITD)

The Office of Undergraduate Admission reviews and manages all applications to the University of Miami.

Transfer applicants (<https://bulletin.miami.edu/general-university-information/undergraduate-policies-and-procedures/admission/transfer-admission/>) from outside the University of Miami must submit a satisfactory academic record in compliance with the standards of the University of Miami Office of Admission. Admitted applicants will be in good academic standing at all institutions previously attended and have a minimum transfer cumulative grade point average (GPA) of 2.7. All previous transfer courses must be from an accredited institution, and a minimum grade of "C" (2.0) must be earned in all transfer courses for UM credit to be awarded. This includes repeated courses under a forgiveness policy at any previous institution.

The external transfer applicant to the Innovation, Technology, and Design Program must meet the following criteria to be considered for admission:

- an earned grade of "C" or better in MTH 161 (<https://bulletin.miami.edu/search/?P=MTH%20161>) (4 credit hours) or MTH 151 (5 credit hours) or MTH 140 and MTH 141 (8 credit hours) or UM equivalent credit on the UM transcript for MTH 171 **OR** eligible to enroll in MTH 161 by the start of the second semester in the Innovation, Technology, and Design Program. Eligibility for enrollment into MTH 161 (<https://bulletin.miami.edu/search/?P=MTH%20161>) is determined by the requisites set forth by the University of Miami Department of Mathematics (<https://bulletin.miami.edu/search/?P=MTH%20161>). Please refer to the University of Miami Department of Mathematics Transfer Equivalencies page (<https://mathematics.miami.edu/undergrad/equivalencies/>) for more detailed information concerning equivalent math course approval.
- an earned minimum cumulative transfer GPA of 2.7 from all institutions previously attended.
- earned a cumulative maximum of 30 credits from all previously attended institutions
- If not already submitted as part of the University of Miami application, the student must provide a written essay outlining their motivation for joining the Innovation, Technology, and Design (ITD) program. The essay should articulate the student's personal, intellectual, or professional goals and explain how the ITD program aligns with those aspirations. The essay should not exceed 1,000 words.

Please note: Failure to pass MTH161 prior to the start of the 5th semester of coursework in ITD constitutes failure to make progress toward degree completion and leads to dismissal from the ITD major.

All transfer coursework must be reviewed on a course-by-course basis for equivalency to Innovation, Technology, and Design Program course requirements. The University of Miami Academic Transfer Evaluation System (MATES) (<https://mates.miami.edu/>) has been implemented to facilitate the course equivalency evaluation process. All students must submit their transfer coursework for evaluation through MATES.

Transfer students into the ITD program may not have more than 30 credits from all previous institutions combined. University Residency and other requirements, applicable to all students, are set out below in the section headed "Requirements for Graduation." Additionally, please refer to the University's specific residency requirements (<https://bulletin.miami.edu/general-university-information/undergraduate-policies-and-procedures/graduation/>) for transfer students and the University's Transfer Credit Policy for Undergraduate Students (<https://bulletin.miami.edu/general-university-information/undergraduate-policies-and-procedures/undergraduate-transfer-credit-policy/>). (<https://bulletin.miami.edu/general-university-information/undergraduate-policies-and-procedures/undergraduate-transfer-credit-policy/>)

Internal Transfer to the Innovation, Technology, and Design Program (ITD)

All students seeking internal transfer to the Innovation, Technology, and Design Program from another UM School or College must meet the following criteria prior to making a formal internal transfer request:

- an earned grade of "C" or better in MTH 161 (<https://bulletin.miami.edu/search/?P=MTH%20161>) (or equivalent) **OR** eligible to enroll in MTH 161 (<https://bulletin.miami.edu/search/?P=MTH%20161>) by the start of the second semester in the Innovation, Technology, and Design Program.
- an earned minimum cumulative GPA of 2.7
- earned a cumulative maximum of 30 credits

- Submission of a written essay articulating the student's motivations for joining the Innovation, Technology, and Design (ITD) program. The essay should reflect on personal, intellectual, or professional goals and demonstrate how the program aligns with the student's aspirations. The essay should not exceed more than 1000 words.

Please note: Failure to pass MTH 161 prior to the start of the 5th semester of coursework in ITD constitutes failure to make progress toward degree completion and leads to dismissal from the ITD major.

All requests for internal transfer to the Innovation, Technology, and Design Program will be reviewed at the end of each semester. Any changes to a student's degree plan as a result of a transfer to the Innovation, Technology, and Design Program may delay the student's date of graduation.

Advanced Writing and Communication Skills

The Innovation, Technology and Design students satisfy the University's Advanced Writing and Communication Skills requirement by completing a set of classroom courses, laboratory courses and design courses where they learn effective oral, graphical and technical writing skills. Innovation, Technology and Design students acquire Advanced Writing and Communication skills in the following core courses:

- EGN 114 Global Challenges Addressed by Engineering and Technology
- ITD 120 Design Challenges 1 & 2 - (Problem Identification and Scoping)
- ITD 134 Design Challenges 3 & 4 (Empathize and Design)
- ITD 256 Design Challenges 5 & 6 - (Ideate and Prototype)
- ITD 378
- ITD 410 Capstone 1 - Innovation, Technology and Design
- ITD 420
- ITD 295 Undergraduate Research in Innovation, Technology, and Design

ITD 102. Career Foundations: Obtaining Experiences to Support Career Goals. 1 Credit Hour.

Career Foundations- Obtaining Experiences to Support Career Goals Seminar is intended to equip students with the skills and tools needed to successfully find and obtain experiences that will support their career goals. This course will include sessions on understanding how one's interests and skills relate to careers, finding and applying for relevant opportunities, creating a personal brand and showcasing it to others, and applying strategies to be a successful applicant including the effective use of professional documents and interviewing.

Co-requisite: FYD 101.

Components: LSN.

Grading: GRD.

Typically Offered: Fall.

ITD 120. Design Challenges 1 & 2 - (Problem Identification and Scoping). 3 Credit Hours.

Design Challenges 1 and 2 use problem-based learning and the design process to introduce students to explore a question related to a problem on campus. Students are required to refine the assigned problem to something relatively simple and tractable, and then research and propose solutions. Students will develop skills around collaboration, problem scoping, and research. Students will engage in workshops and activities emphasizing teamwork and collaboration.

Components: EXP.

Grading: GRD.

Typically Offered: Fall.

ITD 134. Design Challenges 3 & 4 (Empathize and Design). 3 Credit Hours.

This course is the second in a series of courses whereby students will employ Design Thinking methodology. More specifically, it hones in on the second and thirds steps of design thinking: developing empathy and a point of view. It provides students with skills related to understanding and defining the social and emotional components of complex problem solving. Students will "listen with their eyes" in order to identify a problem to solve and practice techniques in order to better understand the user's state of mind and point of view (POV).

Pre-requisite: ITD 120.

Components: EXP.

Grading: GRD.

Typically Offered: Spring.

ITD 199. Internship 1. 1-6 Credit Hours.

Practical application of classroom theory through employment with firms and civic organizations offering positions consistent with programs objectives. The course will introduce Project Management and it will be woven throughout the summer internship in a final project presentation. All students enrolled in this course will gain practical experience and application of technical communication including written, oral and visual presentation skills. The work experiences will enhance the classroom experience and provide an insight to the application of previous design challenges. Innovation, Design and Technology students only.

Pre-requisites: ITD 134 and WRS 107.

Components: PRA.

Grading: GRD.

Typically Offered: Fall, Spring, & Summer.

ITD 220. Ethics, Equity and Responsibility. 3 Credit Hours.

Students will learn how to use digital tools, novel technologies, and machines to benefit others while taking responsibility for their appropriate use and recognizing misuses of communications and other technologies. During the course, students will learn to recognize that the same technologies are not available to everyone because of differences in economic, social, political, and cultural factors. The course introduces mechanisms to ensure that we do not widen inequalities through digital technologies. During class exercises students will discuss different viewpoints, understand complexities in technology transfer from one society to another, and consider the consequences of unethical uses of technology.

Components: LEC.

Grading: GRD.

Typically Offered: Fall.

ITD 256. Design Challenges 5 & 6 - (Ideate and Prototype). 3 Credit Hours.

Design Challenges 5 and 6 are focused on the Ideate and Prototyping stages of the design thinking process. For Design Challenge 5, students are challenged to support arts and culture organizations in developing solutions to their most pressing problems, while employing ideation techniques inspired by creative industries. For design challenge 6, students will engage with a private sector organization or civic partner who is working to develop prototype solutions that address an issue related to environmental sustainability. Students will have hands-on experiences working with the prototyping tools.

Pre-requisites: ITD 120 and ITD 134.

Components: EXP.

Grading: GRD.

Typically Offered: Fall.

ITD 270. Creativity, the Creative Process and Innovation. 3 Credit Hours.

Students will be exposed to the theoretical frameworks of innovation and creativity. They will learn the fundamentals of and approaches to the creative process that include experiential, collaborative, and problem-based learning, associative and divergent thinking, idea generation, experimentation, and the importance of taking risks and embracing failure. Over the course, students will develop creative confidence that will serve as the basis for the design challenges and capstone projects they will undertake in their second and third year.

Components: EXP.

Grading: GRD.

Typically Offered: Spring.

ITD 278. Design Challenges 7 & 8. 3 Credit Hours.

For the final two design challenges before the Capstone project, students are tasked with focusing on improving their skills within the Test and Synthesis phases of the design thinking process. The first half of the semester is dedicated to a design challenge in which students gain practice in testing their design solutions with users. The second half will be focused on synthesizing student learnings from all past projects to deliver a project on social inequality which demonstrates knowledge in all stages of the design thinking process (empathize, define, ideate, prototype, test, synthesize).

Pre-requisites: ITD 120 and ITD 134 and ITD 256.

Components: EXP.

Grading: GRD.

Typically Offered: Spring.

ITD 295. Undergraduate Research in Innovation, Technology, and Design. 1-6 Credit Hours.

Supervised Research and/or design project related to Innovation, Technology & Design.

ITD 102 - Pre-Requisite or approval by the course instructor.

Components: RSC.

Grading: GRD.

Typically Offered: Fall, Spring, & Summer.

ITD 299. Internship 2. 1-6 Credit Hours.

Practical application of classroom theory through employment with firms and civic groups offering positions consistent with programs objectives.?

The course will build on Project Management and it will be woven throughout the internship in a final project presentation. All students enrolled in this course will gain practical experience and application of technical communication including written, oral and visual presentation skills. The work experiences will enhance the classroom experience and provide an insight to the application of previous design challenges. Innovation, Design and Technology students only.

Pre-requisite: ITD 199.

Components: PRA.

Grading: GRD.

Typically Offered: Fall, Spring, & Summer.

ITD 320. Capstone 2. 6 Credit Hours.

This course is the second half of the culminating experience for students in the B.S. in Innovation, Technology, and Design. Students bring together all of the skills they have acquired over the preceding courses to identify a problem, task, or research project to pursue independently or collaboratively. Students must develop a learning plan and then complete the project. All students must complete an academic write-up of their project, in addition to any deliverables (e.g. a prototype, a process, a business model) they might develop. Students will be supervised by a faculty member over two semesters who will advise and evaluate their Capstone. Students are encouraged but not required to partner with private or public sector organizations in the pursuit of their Capstone projects.

Pre-requisite: ITD 410.

Components: LEC.

Grading: GRD.

Typically Offered: Spring.

ITD 410. Capstone 1 - Innovation, Technology and Design. 3 Credit Hours.

This course is the first half of the culminating experience for students in the B.S. in Innovation, Technology, and Design. Students bring together all of the skills they have acquired over the preceding courses to identify a problem, task, or research project to pursue independently or collaboratively. Students must develop a learning plan and then complete the project. All students must complete an academic write-up of their project, in addition to any deliverables (e.g. a prototype, a process, a business model) they might develop. Students will be supervised by a faculty member over two semesters who will advise and evaluate their Capstone. Students are encouraged but not required to partner with private or public sector organizations in the pursuit of their Capstone projects.

Pre-requisite: ITD 378, MTH 162.

Components: LEC.

Grading: GRD.

Typically Offered: Fall.