

Integrative Design, Arts, and Technology (IDeATe)

IDeATe

Overview

The Integrative Design, Arts and Technology (IDeATe) (<http://ideate.cmu.edu>) network offers students the opportunity to become immersed in a collaborative community of faculty and peers who share expertise, experience, and passions at the intersection of arts and technology. Students will engage in active "learning by doing" in the IDeATe labs and classrooms based in Hunt Library. The program addresses current and emerging real-world challenges that require disciplinary expertise coupled with multidisciplinary perspectives and collaborative integrative approaches.

Minors

The IDeATe undergraduate curriculum consists of ten interrelated areas, all of which can be shaped into minors that students pursue alongside their primary majors. The themes of these areas integrate knowledge in technology and arts:

- **Game Design:** Design compelling game experiences and enhance your knowledge of key components of game design such as systems and mechanics, dramatic narrative and character development, programming and engine development, user testing and iterative development. Create games for a variety of audiences, including mobile applications, virtual reality platforms and even tabletop games.
- **Animation & Special Effects** (<http://coursecatalog.web.cmu.edu/intercollegeprograms/ideate/animation-special-effects-minor/>): Explore the technical and artistic aspects of 3D and 2D animation in an integrated manner and within different application contexts—from film animation and visual effects to interactive displays.
- **Media Design:** Design digitally mediated experiences across various platforms, from mobile devices to large-scale installations, and for varied applications—from media for daily living to mediated performances.
- **Design for Learning:** Explore the art and science of designing engaging learning experiences that creatively merge technology, learning sciences, and media arts know-how. Create inclusive learning media experiences ranging from mobile games to interactive museum exhibits, augmented classrooms, and adaptive ed-tech.
- **Sonic Arts:** Create experimental music and explore emerging applications and markets for sound design, music creation, and performance.
- **Innovation and Entrepreneurship:** Work collaboratively in hands-on explorations of the problems, opportunities, strategies, and circumstances that lead to innovations. You will experience integrated models of innovation that increase the likelihood of successful products and services that will bring value to society and/or the marketplace.
- **Intelligent Environments:** Design and implement interactive 3D spaces—both physical and virtual—that shape our experience of time and space.
- **Physical Computing:** Build interactive devices combining small programmable electronic controllers with physical embodiments, adding on-board processing and reactivity to nearly anything around you. Create novel games, useful devices, experimental provocations, and more.
- **Soft Technologies:** Weave together a rich set of traditions and experimental techniques to animate soft materials and matter.
- **Immersive Technologies in Arts & Culture:** Blend technological skills with creative imagination and critical humanistic practice.

Individuals who make significant contributions, academically and professionally, in these areas are solidly prepared in a related discipline. Their preparation is combined with the ability to work in multidisciplinary teams that span technology and the arts. IDeATe serves as a multidisciplinary collaborative learning addition to the education (and learning outcomes) that students receive through their disciplinary major rather than a standalone learning experience.

Innovation and advancement in the IDeATe areas, as in many complex areas of inquiry, is the result of collective inquiry and requires deep expertise in all contributing areas of knowledge (i.e., expert technologists and artists). Carnegie Mellon is the only university in the United States with highly ranked departments in key technological and artistic domains. With these resources, Carnegie Mellon is uniquely positioned to create faculty

and student teams that contain all necessary, high-level expertise in tech-arts areas of inquiry.

Educational Objectives

Students who participate in IDeATe will be able to combine the unique experience of a "deep dive" in their chosen discipline while connecting to the diverse areas of knowledge and skill across the university. To help facilitate this experience, the educational objectives of the IDeATe network are:

- Students from any undergraduate major can integrate a tech-arts area of study into their curricular plan through the IDeATe minors, which enhance and synthesize the tech-arts ecosystem at CMU.
- Students in IDeATe have the opportunity to:
 - Immerse themselves in a collaborative community of faculty and peers who share expertise, experience, and passions at the intersection of arts and technology
 - Engage in active "learning by doing" in shared labs and maker spaces
 - Address current and emerging real-world challenges that require disciplinary expertise coupled with multidisciplinary perspectives and integrative approaches.

Across the ten IDeATe areas, there are over 50 multi-disciplinary technology-arts courses that a student can choose from to customize their paths. Students are assisted in their choice of courses and minor by a dedicated IDeATe advisor who works in tandem with the advisor in their home department.

The IDeATe Portal Courses introduce students to the concepts and practices of knowledge areas beyond their discipline that contribute to the subject of each minor/concentration. After completing the portal courses, students should be able to (1) interpret cross-disciplinary communication from their collaborators (and use that interpretation productively in the collaborative work), (2) translate their own disciplinary expertise to describe ideas and outcomes in a way their cross-disciplinary collaborators can understand, and (3) develop interdisciplinary tech-arts prototypes (that include perspectives from multiple disciplines and enable further interdisciplinary communication and collaboration).

The remaining courses of IDeATe deepen exploration in a given area. Each course is focused on a key aspect of the area that it is categorized under. By taking these courses, the student can become familiar with many of the technical and creative issues in the area of the minor and the collaborative processes they entail. These courses are collaborative because they promote hands-on learning through making, critique, and iterative design and they promote learning from both the instructor and the interdisciplinary peer cohort. At the conclusion of each course a student should be in a position to collaboratively plan and implement an established outcome in the area within a limited amount of time and apply skills from both technology and arts disciplines to prototype ideas and leverage the diversity of perspectives to produce innovation in the field.

A completion of a minor should provide multidisciplinary training in the area of the concentration and furthermore *enhance collaborative learning experience and skills of students*: diversify the cohorts of the student, enhance collaboration skills, promote cognitive versatility, facilitate skill transfer across technology and the arts, and produce graduates that can innovate in 21st century creative industries.

For more information, please visit the IDeATe website (<https://ideate.cmu.edu>).