About the program
The Human-Centered Design and Development major will help students understand how people use technology, and how to identify, design, build, and evaluate technologies to enhance people’s lives. Students will learn the methods for understanding users, techniques, and tools for designing effective technologies, and the modern platforms that are used to create effective technology solutions. The major connects students with potential users and customers to understand their needs and unique contexts, and then design, build, and evaluate impactful products and services.

Characteristics of successful Human-Centered Design and Development students
Passionate about useful and usable technology • Hard-working • Persistent • Strong communicators

Entrance to major requirements
Students typically choose their major by the end of their second year. To enter this major, students must:

- meet a minimum cumulative GPA,
- fall within a specific credit window, and
- complete required courses.

IST academic advisers collaborate with enrolled students to help them understand and meet the entrance to major requirements and stay on track for graduation.

For more information about entrance to major requirements and to review a recommended academic plan, visit ist.psu.edu/etm.

Designing useful technology
Designing great web and mobile applications takes more than just a knowledge of coding. It requires broad expertise in the tools, methods, and concepts used to create useful software that meets people’s needs. HCDD students gain these skills by exploring three critical knowledge areas:

- Application Development
  Learn to design and build useful, usable technologies to meet the needs of a rapidly evolving world. Understand and use tools to create user-friendly software and other interactive systems. Build web- and mobile-based applications to harness the power of digital infrastructure.

- User Experience Design
  Understand how people live, work, and play, and identify opportunities to enhance experiences through technology. Invent entirely new experiences not yet envisioned. Learn and practice design thinking to shape the future of interactive technology.

- User and Technology Research
  Use quantitative and qualitative methods to identify how technology can better support human activity. Study the effects of existing technologies on people’s lives, and how these technologies can be better matched to their goals and priorities.
Students pursuing a degree in Human-Centered Design and Development will take courses that build core competencies in three knowledge areas: application development, user experience design, and user and technology research. Most HCDD courses involve active learning where students apply new knowledge and skills to real-world technology problems and scenarios. Many courses are project based, challenging students to work in teams to design, build, and evaluate new technology solutions.

**SELECTED REQUIRED COURSES:**

Students in the Human-Centered Design and Development degree program will develop the foundation for their careers by taking a variety of required courses, such as:

- **HCDD 264 – Design Practice in Human-Centered Design and Development**
  Learn concepts, methods, techniques, and tools for designing effective technology-enabled experiences, while practicing iterative design with prospective users.

- **HCDD 340 – Human-Centered Design for Mobile Computing**
  Examine the technical aspects of mobile computing, including wearables, smart home devices, and virtual and augmented reality. Explore emerging ideas and concepts in the field, and study its impact across various domains.

- **IST 361 – Application Development Design Studio II**
  Engage with the concepts, processes, tools, and materials used to envision and develop software applications. Collaborate, experiment, and refine designs with feedback sessions throughout the development lifecycle.

- **HCDD 364W – Methods for Studying Users**
  Engage with the concepts, methods, and techniques for studying users and evaluating technology in the context of its use. Learn to select and use data gathering and analysis methods to guide user research design.

- **IST 412 – The Engineering of Complex Software Systems**
  Gain insight into the full software development cycle, including design, implementation, testing and quality assurance, deployment, maintenance, and project estimation and management. Apply these concepts to developing a complex software project.

“*You need to keep the user in mind when you’re designing and developing software, so you can be sure it is designed to meet their needs. We study these concepts to make technology more efficient.*”

> Lauren Doutt, Class of 2019

Learn more at [ist.psu.edu/DiscoverHCDD](http://ist.psu.edu/DiscoverHCDD)