HUMAN-CENTERED DESIGN AND DEVELOPMENT, B.S. (INFORMATION SCIENCES AND TECHNOLOGY)

Begin Campus: Abington, Altoona, Berks, Beaver, Brandywine, DuBois, Erie, Fayette, Greater Allegheny, Harrisburg, Hazleton, Lehigh Valley, Mont Alto, New Kensington, Shenango, Schuylkill, University Park, Wilkes-Barre, Scranton, York

End Campus: University Park

Suggested Academic Plan

The suggested academic plan(s) listed on this page are the plan(s) that are in effect during the 2025-26 academic year. To access previous years' suggested academic plans, please visit the archive (https://bulletins.psu.edu/undergraduate/archive/) to view the appropriate Undergraduate Bulletin edition.

Human-Centered Design and Development, B.S. at University Park Campus

The course series listed below provides **only one** of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an **Academic Requirements** or **What If** report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

First Year

Fall	Credits	Spring	Credits
HCDD 113/113S*#	3	STAT 200 (GQ)*‡#	4
IST 140*#	3	IST 220*#	3
MATH 110 or 140 (GQ)‡	4	IST 242*#	3
PSYCH 100 or SOC 3 (GS)‡	3	ENGL 15 or 30H (GWS)‡	3
General Education Selection	3	General Education Selection	3
	16		**16**

Second Year

Fall	Credits	Spring	Credits
HCDD 264*	3	IST 311*	3
IST 210*#	3	IST 256*	3
IST 230*	3	CAS 100 (GWS)‡	3
IST 261*	3	Application Focus Selection	3
Application Focus Selection	3	Elective	3
	15		**15**

Third Year

Fall	Credits	Spring	Credits	Summer	Credits
HCDD 340*	3	HCDD 364W*	3	IST 495*1	1
ENGL 202C or 202D (GWS)‡	3	HCDD 361 or IST 361 (or Elective)*	3		
Application Focus Selection	3	HCDD 412 or IST 412*	3		
General Education Selection	3	General Education Selection	3		
General Education Selection	3	General Education Selection	3		
	15		**15**		**1**

Fourth Year

Fall	Credits	Spring	Credits
HCDD 411 or IST 411*	3	HCDD 440*	3
IST 402*	3	General Education Selection	3
Application Focus Selection (400-level)	3	General Education Selection	3
General Education Selection	3	Elective	3
		Elective	3
	12		**15**

Total Credits 120

* Course requires a grade of C or better for the major

‡ Course requires a grade of C or better for General Education

\# Course is an Entrance to Major requirement

† Course satisfies General Education and degree requirement

1   1 credit of IST 495 is required. A grade of "SA" must be earned in this course. This course can be completed at any time before graduation.

University Requirements and General Education Notes:

US and IL are abbreviations used to designate courses that satisfy Cultural Diversity Requirements (United States and International Cultures).

W, M, X, and Y are the suffixes at the end of a course number used to designate courses that satisfy University Writing Across the Curriculum requirement.

General Education includes Foundations (GWS and GQ), Knowledge Domains (GHW, GN, GA, GH, GS) and Integrative Studies (Inter-domain) requirements. N or Q (Honors) is the suffix at the end of a course number used to help identify an Inter-domain course, but the inter-domain attribute is used to fill audit requirements. Foundations courses (GWS and GQ) require a grade of 'C' or better.

All incoming Schreyer Honors College first-year students at University Park will take ENGL 137H/CAS 137H in the fall semester and

ENGL 138T/CAS 138T in the spring semester. These courses carry the GWS designation and satisfy a portion of that General Education requirement. If the student's program prescribes GWS these courses will replace both ENGL 15/ENGL 30H and CAS 100A/CAS 100B/CAS 100C. Each course is 3 credits.

Application Focus Areas:

Students pick one of the tracks below or create a custom 4-course application focus. Students must pick three (3) credits at the 400 level. All twelve (12) credits must be in the same application focus area. It is recommended that students use the application focus area list to select a course that meets a General Education requirement (GS/GHW) and serves as a prerequisite for more advanced coursework within the application focus.

Data Sciences

Code	Title	Credits
DS 120	Scripting for Data Sciences	1
DS 200	Introduction to Data Sciences	4
DS 220	Data Management for Data Sciences	3
DS 300	Privacy and Security for Data Sciences	3
DS 310	Machine Learning for Data Analytics	3
DS 330	Visual Analytics for Data Sciences	3
DS 402	Emerging Trends in the Data Sciences	3
DS 410	Programming Models for Big Data	3
MIS 301	Business Analytics	3
MIS 431	Business Data Management	3
MIS 441	Business Intelligence for Decision Making	3
MIS 445	Business Intelligence	4
STAT 184	Introduction to R	2
STAT 380	Data Science Through Statistical Reasoning and Computation	3

Digital Arts and Communication

Code	Title	Credits
AA 121	Design Thinking and Creativity	3
AA 122	Introduction to Graphic Storytelling	3
CAS 101N	Introduction to Human Communication	3
CAS 175N	Persuasion and Propaganda	3
CAS 215	Argumentation	3
CAS 271N	Intercultural Communication	3
CAS 383N	Culture and Technology	3
CAS 471	Intercultural Communication Theory and Research	3
COMM 100N	The Mass Media and Society	3
COMM 190/ GAME 140	Gaming and Interactive Media	3
COMM 241	Graphic Design for Communications	3
COMM 310	Digital Media Metrics	3
COMM 320	Introduction to Advertising	3
COMM 325	Effects of digital games	3
COMM 370	Public Relations	3
COMM 372	Digital Public Relations	3
COMM 418	Media Effects: Theory and Research	3
COMM 420	Research Methods in Advertising and Public Relations	3
COMM 422	Advertising Media Planning	3
COMM 441	Advanced Graphic Design for Communications	3
COMM 450	Digital Advertising	3
COMM 450A	Digital Campaigns	3
GD 100	Introduction to Graphic Design	3

- Note that the College of Arts and Architecture is currently developing new courses that will fit into this focus area and added to this list once the new courses are approved and available.

Geographic Information Systems

Code	Title	Credits
CAS 101N	Introduction to Human Communication	3
GEOG 6N	Maps and the Geospatial Revolution	3
GEOG 260	Geographic Information in a Changing World: Introduction to GIScience	3
GEOG 361	Cartography--Maps and Map Construction	3
GEOG 362	Image Analysis	3
GEOG 363	Geographic Information Systems	3
GEOG 364	Spatial Analysis	3
GEOG 461W	Dynamic Cartographic Representation	3
GEOG 463	Geospatial Information Management	3
GEOG 464	Advanced Spatial Analysis	3
GEOG 485	GIS Programming and Software Development	3
Any ARMY, NAVSC, AIR ROTC		1-6

Healthcare

Code	Title	Credits
BBH 101	Introduction to Biobehavioral Health	3
BBH 302	Diversity and Health	3
BBH 305	Introduction to Global Health Issues	3
BBH 315	Gender and Biobehavioral Health	3
BBH 316	Foundations and Principles of Health Promotion	3
BBH 402	African Health & Development	3
BBH 432	Biobehavioral Aspects of Stress	3
BBH 440	Principles of Epidemiology	3
HDFS 210	Ethnicity, Health and Aging	3
HDFS 249N	Adult Development and Aging	3
HDFS 445	Development Throughout Adulthood	3
HPA 101	Introduction to Health Services Organization	3
HPA 210	Health Care Payment	3
HPA 211	Financial Decisions in Health Care Organizations	3
HPA 301W	Health Services Policy Issues	3
HPA 311	Population Health and Healthcare	3
HPA 332	Health Systems Management	3
HPA 470	Health Care Information Management	3

Informatics

Code	Title	Credits
ENGR 310	Entrepreneurial Leadership	3
ETI 301 or IST 301	Information and Organizations	3
HCDD 446 or IST 446	An Introduction to Building Computer/Video Games	3
IST 222H	Community Informatics	3

IST 234N	Digital Cultures	3
IST 402	Emerging Issues and Technologies	3
IST 431	The Information Environment	3
MGMT 215	Entrepreneurial Mindset	3

Psychology

Code	Title	Credits
PSYCH 221	Introduction to Social Psychology	3
PSYCH 244	Introduction to the Psychology of Human Factors Engineering	3
PSYCH 253	Introduction to Psychology of Perception	3
PSYCH 256	Introduction to Cognitive Psychology	3
PSYCH 301W	Basic Research Methods in Psychology	4
PSYCH 370	Psychology of the Differently-Abled	3
PSYCH 420	Advanced Social Psychology	3
PSYCH 421	Self and Social Judgment	3
PSYCH 423	Social Psychology of Interpersonal/Intergroup Relationships	3
PSYCH 458	Visual Cognition	3

- Note that this assumes PSYCH 100 will be chosen from Additional Courses, as it is a prerequisite for many of these classes.

Security and Risk

Code	Title	Credits
CYBER 100	Computer Systems Literacy	3
CYBER 221 or SRA 221	Overview of Information Security	3
CYBER 262	Cyber-Defense Studio	3
CYBER 366	Malware Analytics	3
SRA 111	Introduction to Security and Risk Analysis	3
SRA 211	Threat of Terrorism and Crime	3
SRA 231	Decision Theory and Analysis	3
SRA 268	Visual Analytics	3
SRA 311	Risk Analysis in a Security Context	3
SRA 421	The Intelligence Environment	3
SRA 468	Spatial Analysis of Risks	3
SRA 472	Integration of Privacy and Security	3
Any ARMY, NAVSC, AIR ROTC		1-6

Sociology

Code	Title	Credits
SOC 5	Social Problems	3
SOC 120N	Knowing Right from Wrong	3
SOC 207	Research Methods in Sociology	3
SOC 403	Advanced Social Psychology	3
SOC 404	Social Influence and Small Groups	3
SOC 405	Sociological Theory	3
SOC 422	World Population Diversity	3
SOC 423	Social Demography	3
SOC 425	Social Conflict	3
SOC 459	Communities and Crime	3
SOC 467	Law and Society	3

- Note that this assumes SOC 3 will be chosen from Additional Courses, as it is a prerequisite for many of these classes.

Custom Application Focus

There is an option for a student to create a custom 4-course application focus sequence. It must be a coherent sequence of courses that provides context for the student in terms of content relevant to the HCDD program. It must contain three credits of 400-level coursework, so it's important to consider course prerequisites when creating your custom application focus area. It must be selected in consultation with a teaching HCDD faculty member and an academic adviser.

Human-Centered Design and Development, B.S. at Commonwealth Campuses

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First Year

Fall	Credits	Spring	Credits
HCDD 113/113S*#	3	IST 220*#	3
IST 210*#	3	STAT 200 (GQ)*‡#†	4
MATH 110 or 140 (GQ)‡†	4	ENGL 15 or 30H (GWS)‡	3
General Education Selection	3	CAS 100 (GWS)‡	3
General Education Selection	3	General Education Selection	3
	16		**16**

Second Year

Fall	Credits	Spring	Credits
IST 140*#1	3	IST 242*#2	3
PSYCH 100 or SOC 3 (GS)‡†	3	Application Focus Selection or General Education Selection	3
Application Focus Selection or General Education Selection	3	General Education Selection	3
General Education Selection	3	General Education Selection	3
Elective	3	Elective	3
	15		**15**

Third Year

Fall	Credits	Spring	Credits	Summer	Credits
IST 311*	3	HCDD 364W*	3	IST 495*3	1
HCDD 264*	3	IST 361*	3		
ENGL 202C or 202D (GWS)‡	3	IST 230*	3		
IST 261 (or Elective)*	3	IST 256*	3		
Application Focus Selection or General Education Selection	3	Application Focus Selection or General Education Selection	3		
	15		**15**		**1**

Fourth Year

Fall	Credits	Spring	Credits
IST 412*	3	HCDD 440*	3
IST 402*	3	IST 411*	3
HCDD 340*	3	Application Focus Selection	3
Application Focus Selection (400-level)	3	General Education Selection	3
		Elective	3
	12		**15**

Total Credits 120

* Course requires a grade of C or better for the major
‡ Course requires a grade of C or better for General Education
# Course is an Entrance to Major requirement
† Course satisfies General Education and degree requirement

1 Students may meet the requirement for IST 140 by taking one of the following alternate paths: CMPSC 121, or CMPSC 131, or CMPSC 101 and IST 240
2 Students may meet the requirement for IST 242 by taking one of the following alternate paths: CMPSC 121 and CMPSC 221, or CMPSC 131 and CMPSC 221
3 1 credit of IST 495 is required. A grade of "SA" must be earned in this course. This course can be completed at any time before graduation.

University Requirements and General Education Notes:

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Application Focus Areas:

Students pick one of the application focuses listed on the "University Park Campus" plan or create a custom four-course application focus. It must contain three credits of 400-level coursework, so it's important to consider course prerequisites when creating your custom application focus area. All twelve credits must be in the same application focus area. Not all application focuses are available at all campuses. See your

academic adviser to find out which courses and focuses are available at your campus.