

**Major: Information Sciences and Technology**  
**Option: Design and Development**

*Entered Penn State Fall 2017 or before*

**Total Credits: 125**

\*IST courses have enforced prerequisites.\*  
 \*1 credit of IST 495-IST Internship is required.\*

Semester 1	Credits	Semester 2	Credits
IST 110/110S <i>Information, People and Technology</i> <b>ETM Course</b>	3	IST 210 <i>Organization of Data</i> <b>ETM Course</b>	3
IST 140 <i>Introduction to Application Development</i> , <b>OR</b> CMPSC 121 <i>Introduction to Programming Techniques</i> , <b>OR</b> CMPSC 131 <i>Programming and Computation I: Fundamentals</i>	3	IST 220 <i>Networking and Telecommunications</i> <b>ETM Course</b>	3
MATH 110 <b>OR</b> MATH 140 (GQ)	4	CAS 100 (GWS)	3
World Language 001	4	World Language 002	4
		ENGL 15 <b>OR</b> ENGL 30 (GWS)	3
Total Credits:	14	Total Credits:	16

Semester 3	Credits	Semester 4	Credits
IST 230 <i>Language, Logic and Discrete Math</i>	3	IST 261 <i>Application Development Design Studio I</i>	3
IST 242 <i>Intermediate and Object-Oriented Application Development</i>	3	STAT 200 (GQ)	4
ECON 102 <b>OR</b> ECON 104 <b>OR</b> ECON 14 (GS)	3	General Education Selection	3
World Language 003	4	General Education Selection	3
General Education Selection	3	General Education Selection	3
Total Credits:	16	Total Credits:	16

Semester 5	Credits	Semester 6	Credits
IST 311 <i>Object-Oriented Design and Software Applications</i>	3	Support of Option (can be IST 361 <i>Application Development Design Studio II IF</i> IST 261 <i>Application Development Design Studio I</i> is completed)	3
IST 331 <i>Foundations of Human-Centered Design</i>	3	IST 301 <i>Information and Organizations</i>	3
Support of Option Selection	3	ENGL 202C <b>OR</b> ENGL 202D (GWS)	3
General Education Selection	3	International Cultures (IL)	3
General Education Selection	3	General Education Selection	3
Total Credits:	15	Total Credits:	15

Semester 7	Credits	Semester 8	Credits
IST 4xx <i>Emerging Issues and Technologies</i>	3	IST 440W <i>IST Integration and Problem Solving</i>	3
IST 412 <i>The Engineering of Complex Software Systems</i> , <b>OR</b> IST 413 <i>Usability Engineering</i>	3	IST 411 <i>Distributed Object Computing</i> , <b>OR</b> IST 413 <i>Usability Engineering</i>	3
International Cultures (IL)	3	US Cultures <b>OR</b> Elective	3
General Education Selection	3	Support of Option Selection (400-level)	3
General Education Selection	3	General Education Selection	2
Elective	1.5	Elective	1.5
Total Credits:	16.5	Total Credits:	15.5