INTEGRATED PRODUCT DESIGN, MIPD

The MIPD provides students from engineering, design or business backgrounds with expertise in a human-centered design process that leverages their existing skills and enables them to develop new ones.

Designed to ground students in the disciplines of product design while allowing them to tailor their learning experience to meet their individual goals. M:IPD students take both integrated courses designed specifically for the degree and single discipline courses that provide more in-depth training in business, design arts or engineering.

For more information: https://ipd.me.upenn.edu/ipd-programs/m-ipd-degree/

Curriculum

Code	Title	Course Units
Foundation		
IPD 5000	Product Engineering Basics	
IPD 5030	Design Fundamentals	
MKTG 1010	Introduction to Marketing	
or EAS 5450	Engineering Entrepreneurship I	
Core Courses [1]		**5**
IPD 5150	Product Design (1st Year)	
or IPD 5140	Design for Manufacturability	
IPD 5510	Design Processes (1st Semester)	
IPD 5520	Problem Framing (2nd Semester)	
IPD 7990	IPD Final Project (3rd Semester)	
IPD 7990	IPD Final Project (4th Semester)	
Breadth Courses		
Engineering		*1*
BE 5140	Rehab Engineering and Design	
CIS 5190	Applied Machine Learning	
CIS 5450	Big Data Analytics	
CIS 5570	Programming for the Web	
CIT 5900	Programming Languages and Techniques	
ESE 5160	IoT Edge Computing	
ESE 5450	Data Mining: Learning from Massive Datasets	
IPD 5010	Integrated Computer-Aided Design, Manufacturing and Analysis	
IPD 5140	Design for Manufacturability	
IPD 5160	Advanced Mechatronic Reactive Spaces.	
IPD/ESE 5190	Introduction to Embedded Systems	
IPD 5290	Designing Connected Objects and Experiences	
MEAM 5080	Materials and Manufacturing for Mechanical Design	
MEAM 5100	Design of Mechatronic Systems	
MEAM 5200	Introduction to Robotics	
Design Breadth		*1*
ARCH 7240	Technology in Design	
ARCH 7260	Furniture Design Strategic Process	
ARCH 7270/ IPD 5270	Industrial Design I	
ARCH 7280/ IPD 5280	Design of Contemporary Products: Design for Equity, Inclusion and Accessibility	
ARCH 7370	Semi-Fictious Realms	
ARCH 7390	New Approaches to an Architecture of Health	
ARCH 7430	Form and Algorithm	
ARCH 7440/ IPD 5440	Image, Object, Architecture	
ARCH 7510	Ecology, Technology, and Design	
CPLN 5710	Sensing the City	
DSGN 5001	Art, Design and Digital Culture	
DSGN 5002	Design 21: Design After the Digital	
DSGN 5004	Art of the Web: Interactive Concepts for Art & Design	
DSGN 5005	3-D Computer Modeling	
DSGN 5007	Typography	
DSGN 5013	Graphic Design Practicum	
DSGN 5016	Cultures of Making	
DSGN 5017	Biological Design	
DSGN 5018	Graphic Design I: Creative Technologies	
DSGN 5019	Functions for Form and Material	
DSGN 5021	Information Design and Visualization	
DSGN 5022	Interfacing Culture: Designing for Mobile, Web and Public Media	
DSGN 5023	User Experience (UX) and User Interface (UI) Design	
IPD 5210	Designing Smart Objects for Play and Learning	
IPD 5270	Industrial Design I	
IPD 5440	Image, Object, Architecture	
IPD 5680	Integrative Design Studio: Biological Design	
MEAM/IPD 5160	Advanced Mechatronic Reactive Spaces.	
Business		*1*
BDS 5010	Behavioral Science: Theory and Application of Experimental Methods	
BDS 5120	Power, Persuasion and Influence	
BDS 5210	Judgments & Decisions	
EAS 5120	Engineering Negotiation	
EAS 5450	Engineering Entrepreneurship I	
EAS 5460	Engineering Entrepreneurship II	
EAS 5490	Engineering Entrepreneurship Lab	
ENVS 6530	Corporate Sustainability Strategies	
ESE 5400	Engineering Economics	
FNCE 7500	Venture Capital and the Finance of Innovation	
HCMG 8530	Management and Strategy in Medical Devices and Technology	
HCMG 8670	Health Care Entrepreneurship	
MGMT 7290	Intellectual Property Strategy for the Innovation-Driven Enterprise	

MGMT 7310	Technology Strategy	
MGMT 8010	Entrepreneurship	
MGMT 8020	Change, Innovation & Entrepreneurship	
MGMT 8040	Venture Capital and Entrepreneurial Management	
MGMT 8060	Venture Implementation	
MGMT 8120	Social Entrepreneurship	
MKTG 6110	Marketing Management	
MKTG 6120	Dynamic Marketing Strategy	
MKTG 7110	Consumer Behavior	
MKTG 7120	Data and Analysis for Marketing Decisions	
MKTG 7210	New Product Management	
MKTG 7270	Digital Marketing and Electronic Commerce	
MKTG 7330	Marketing for Social Impact	
MKTG 7370	Introduction to Brain Science for Business	
MKTG 7410	Entrepreneurial Marketing	
MKTG 7700	Digital Marketing, Social Media and E-Commerce	
MKTG 7760	Applied Probability Models in Marketing	
MKTG 8090	Special Topics: Experiments for Business Decision Making	
MKTG 8500	Special Topics - Consumer Neuroscience	
OIDD 6120	Business Analytics	
OIDD 6140	Innovation	
OIDD 6620	Enabling Technologies	
OIDD 6910	Negotiations	
Electives		**2**
IPD 5090	Needfinding	
IPD 5110	How to Make Things: Production Prototyping Studio	
IPD 5250	Ergonomics/Human Factors Based Product Design	
Seminar Requirement		
IPD 6990	IPD Seminar.	
Total Course Units		**10**

1

The curriculum is comprised of 5 core courses, and 5 additional courses.

- Since the program is cross-disciplinary, students who do not have the requisite background in the three areas, engineering, design arts, and business, may be required to enroll in additional foundational courses in these areas.
- The core curriculum is comprised of 5 courses that are required of all students regardless of their undergraduate degree. The 5 additional courses are one in design, one in business one in engineering, and two additional electives in any of the disciplines and chosen from a pre-approved list.

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For more information about design, engineering and business courses see the Course Directory (https://ipd.me.upenn.edu/courses/).

Plan of Study

First Year

Summer		**Course Units**
IPD 5000	Product Engineering Basics (Engineering Foundation if necessary)	1
	Course Units	**0.00**
Fall		
IPD 5510	Design Processes (Core Course)	1
IPD 5450	Engineering Entrepreneu l (Business Foundation)	1
Design Elective [1]		1
	Course Units	**3.00**
Spring		
IPD 5520	Problem Framing (Core Course)	1
IPD 5140	Design for Manufactura (Core Course)	1
Business Elective [1]		1
	Course Units	**3.00**
Second Year		
Fall		
IPD 7990	IPD Final Project	1
Engineering Elective [1]		1
Business Elective [1]		1
	Course Units	**3.00**
Spring		
IPD 7990	IPD Final Project	1
	Course Units	**1.00**
	Total Course Units	**10.00**

For guidance on the policies and procedures that govern the program see the IPD Guidelines (https://ipd.me.upenn.edu/ipd-guidelines/).

The degree and major requirements displayed are intended as a guide for students entering in the Fall of 2022 and later. Students should consult with their academic program regarding final certifications and requirements for graduation.