

# BS IN INNOVATION, TECHNOLOGY AND DESIGN

## Overview

The **BS in Innovation, Technology and Design**, a multi-disciplinary degree program, is a unique University-wide program that will prepare graduates at the intersection of design, innovation, technology and entrepreneurship. Stewarded by the College of Engineering, with cooperation across the University, the new Bachelor of Science degree program is designed to create entrepreneurial-minded, experienced graduates who will tackle the complexities of real-world challenges and opportunities and translate ideas into sustainable, high-impact ventures. The students will be equipped to effectively integrate concepts from business, art and creativity, ethics, law, and engineering and draw on design tactics for innovation and problem solving. A critical component of this new degree is that most courses are team taught by faculty from multiple disciplines. The students will learn and innovate through experiential design challenges provided by industry partners every semester, and embedded internships and/or civic engagement.

## Curriculum Requirements

Code	Title	Credit Hours
<b>GENERAL EDUCATION REQUIREMENTS</b>		
Written Communication Skills:		
WRS 105	First-Year Writing I	3
WRS 107	First-Year Writing II: STEM	3
Quantitative Skills:		
MTH 161 or MTH 162	Calculus I Calculus II	4
Areas of Knowledge:		
Arts & Humanities Cognate		9
People & Society Cognate		9
STEM Cognate (9 credits) (fulfilled through the major)		
<b>MAJOR COURSES</b>		
<b>Core Courses</b>		
CIM 112	Innovation Design	3
EGN 114	Global Challenges Addressed by Engineering and Technology	3
EGN 123	Computing and Digital Solutions for the future	3
MGT 253	Introduction to Entrepreneurship	3
SOC 305	Globalization and Society	3
CIM 121	Prototyping	3
BTE 360	Systems Analysis and Design	3
MGT 354	Growing the New Venture	3
ITD 220	Ethics, Equity and Responsibility	3
Creativity, the Creative Process, and Innovation (NEW COURSE)		3
<b>Approved Electives</b>		<b>15</b>
Select 5 additional courses with advisor approval including the following:		
Informed Design: Sustainability (NEW COURSE)		
The Design Team in Society (NEW COURSE)		
Emerging Technologies (NEW COURSE)		
Current Practices in Software Development (NEW COURSE)		
Digital Infrastructure and Cybersecurity (NEW COURSE)		
CIM 202	User Experience Design	
ACC 211	Principles of Financial Accounting	
MKT 301	Marketing Foundations	
FIN 300	Fundamentals of Finance for Non-Finance Majors	
Other courses by approval		
<b>DESIGN CHALLENGES</b>		
ITD 120	Design Challenges 1 2	6
ITD 134	Design Challenges 3 4 (Empathize and Design)	6
ITD 256	Design Challenges 5 6	6

ITD 278	Design Challenges 7 8	6
<b>Design Challenge Capstone</b>		
Design Challenge Capstone 1 (New Course)		6
Design Challenge Capstone 2 (New Course)		6
<b>CIVIC/EMPLOYER ENGAGEMENT</b>		<b>12</b>
Complete 12 credits from the following options:		
Internship		
Civic Engagement		
<b>Total Credit Hours</b>		<b>120</b>

The BS in Innovation, Technology and Design offers two plan of study options for students: an intensive three-year option or a traditional four-year option.

## Sample Plan of Study: Intensive Three-Year Option

Students who wish to complete the program in three years can follow the intensive plan of study below. Students in this option would need to complete two required summer internships.

Year One		Credit Hours
<b>Fall</b>		
WRS 105	First-Year Writing I	3
CIM 112	Innovation Design	3
EGN 114	Global Challenges Addressed by Engineering and Technology	3
EGN 123	Computing and Digital Solutions for the future	3
ITD 120	Design Challenges 1 2	6
<b>Credit Hours</b>		<b>18</b>
<b>Spring</b>		
MTH 161 or 162	Calculus I or Calculus II	4
WRS 107	First-Year Writing II: STEM	3
MGT 253	Introduction to Entrepreneurship	3
SOC 305	Globalization and Society	3
ITD 134	Design Challenges 3 4 (Empathize and Design)	6
<b>Credit Hours</b>		<b>19</b>
<b>Summer</b>		
Internship		6
<b>Credit Hours</b>		<b>6</b>
<b>Year Two</b>		
<b>Fall</b>		
CIM 121	Prototyping	3
BTE 360	Systems Analysis and Design	3
MGT 354	Growing the New Venture	3
ITD 220	Ethics, Equity and Responsibility	3
ITD 256	Design Challenges 5 6	6
<b>Credit Hours</b>		<b>18</b>
<b>Spring</b>		
A&H Cognate Course		3
P&S Cognate Course		3
Approved Elective		3
Creativity, the Creative Process, and Innovation		3
ITD 278	Design Challenges 7 8	6
<b>Credit Hours</b>		<b>18</b>
<b>Summer</b>		
Internship		6
<b>Credit Hours</b>		<b>6</b>

<b>Year Three</b>		
<b>Fall</b>		
A&H Cognate Course		3
P&S Cognate Course		3
Approved Elective		3
Approved Elective		3
Design Challenge Capstone 1		6
<b>Credit Hours</b>		<b>18</b>
<b>Spring</b>		
A&H Cognate Course		3
P&S Cognate Course		3
Approved Elective		3
Approved Elective		3
Design Challenge Capstone 2		6
<b>Credit Hours</b>		<b>18</b>
<b>Total Credit Hours</b>		<b>121</b>

## Sample Plan of Study: Traditional Four-Year Option

Students who wish to have the full four-year undergraduate experience can choose to extend the course requirements over four years, rather than three. Below is one example of how a student might do this. This would enable a student to study abroad during the third year or pursue a minor or other co-curricular activities. Students can work with their advisor to fit the 12-credit internship requirement into their customized plan of study.

<b>Year One</b>			<b>Credit Hours</b>
<b>Fall</b>			
WRS 105	First-Year Writing I		3
CIM 112	Innovation Design		3
EGN 114	Global Challenges Addressed by Engineering and Technology		3
EGN 123	Computing and Digital Solutions for the future		3
ITD 120	Design Challenges 1 2		6
<b>Credit Hours</b>			<b>18</b>
<b>Spring</b>			
MTH 161 or 162	Calculus I or Calculus II		4
WRS 107	First-Year Writing II: STEM		3
MGT 253	Introduction to Entrepreneurship		3
ITD 134	Design Challenges 3 4 (Empathize and Design)		6
<b>Credit Hours</b>			<b>16</b>
<b>Year Two</b>			
<b>Fall</b>			
CIM 121	Prototyping		3
ITD 220	Ethics, Equity and Responsibility		3
MGT 354	Growing the New Venture		3
ITD 256	Design Challenges 5 6		6
Internship			3
<b>Credit Hours</b>			<b>18</b>
<b>Spring</b>			
SOC 305	Globalization and Society		3
Creativity, the Creative Process, and Innovation			3
ITD 278	Design Challenges 7 8		6
Internship			3
<b>Credit Hours</b>			<b>15</b>

<b>Year Three</b>		
<b>Fall</b>		
BTE 360	Systems Analysis and Design	3
A&H Cognate Course		3
P&S Cognate Course		3
P&S Cognate Course		3
Internship		3
<b>Credit Hours</b>		<b>15</b>
<b>Spring</b>		
A&H Cognate Course		3
A&H Cognate Course		3
P&S Cognate Course		3
Approved Elective		3
Internship		3
<b>Credit Hours</b>		<b>15</b>
<b>Year Four</b>		
<b>Fall</b>		
Approved Elective		3
Approved Elective		3
Design Challenge Capstone 1		6
<b>Credit Hours</b>		<b>12</b>
<b>Spring</b>		
Approved Elective		3
Approved Elective		3
Design Challenge Capstone 2		6
<b>Credit Hours</b>		<b>12</b>
<b>Total Credit Hours</b>		<b>121</b>

## Mission

The BS in Innovation Technology & Design program, an initiative of the University of Miami New Century Education Incubator, will prepare students to research, analyze, prototype and design innovative products and processes from concept to launch.

## Student Learning Outcomes

- Students will be able to describe and employ various stages of the design-and-innovation process, from initial research to new concept generation and on to implementation.
- Students will be able to integrate social, technological and formal analysis in the design of innovative product, service, and system concepts.
- Students will be able to identify and characterize stakeholders surrounding technology innovation in relation to specific design concepts.
- Students will be able to conduct research and understand the expectations, experiences, and practices of technology users and key stakeholders.