Simulation and Visualization Bachelor of Science

Degree Type
Bachelor of Science
Environment
campus
Program Length
80 weeks
Overview
In today's digital world, simulation and visualization technologies have become widespread throughout many industries for education, science, training, and entertainment purposes. From creating computerized models for understanding complex data to developing virtual environments for gaming, simulation and visualization technologies solve challenging problems, enable learning, and provide visual insight into abstract problems and ideas. The Simulation & Visualization curriculum was designed to create future engineers who will develop simulation and visualization systems for the twenty-first century. It was also designed to provide you with the technical and critical-thinking skills needed to study, design, develop, and test simulation and visualization systems. Furthermore, the curriculum allows you to develop your programming skills with hands-on experience in the engineering of simulation and visualization systems. You are trained using real-world approaches and emerging technologies to keep pace with this dynamic industry and prepare you for success in the twenty-first century. In addition to developing your technical expertise and subject knowledge, the Simulation & Visualization curriculum is designed to develop your creativity. You will learn strategies for engineering simulations and visualizations and apply those methods to develop unique engineering projects of your own.
Objective
Bachelor's Objective The goal of the Simulation & Visualization Bachelor of Science degree program is to develop engineers with the creative and critical-thinking skills and technical expertise required to produce simulations and visualizations based on real-world needs and applications. You will learn how to test and validate these simulations and visualizations, allowing you to display the skills needed to work in this new and growing industry. The curriculum in this degree program encompasses courses that address programming, simulation electronics, visualization software, machine intelligence, 3-D rendering, behavior modeling, mission-critical systems, analysis methods, leveraging content libraries, and simulation environments. This program is designed to prepare you to engage in constructive simulations and visualizations for training and entertainment applications. Graduates of the Simulation & Visualization Bachelor of Science degree program will be prepared to enter the workforce as entry-level simulation and visualization engineers.

Month 1

Month 1

Code	Title	Credit Hours
GEN1011	Creative Presentation	3.0
DEP1013	Psychology of Play	3.0

Month 2

Month 2

Code	Title	Credit Hours
TEM1001	Technology in the Entertainment and Media Industries	4.0
MAD1100	Discrete Mathematics	4.0

Month 3

Month 3

Code	Title	Credit Hours
COP1000	Programming I	4.0

Month 4

Month 4

Code	Title	Credit Hours
COP2334	Programming II	4.0

Month 5

Month 5

Code	Title	Credit Hours
SDV3111	Systems Programming	4.0
SIMC111	Professional Development Seminar I: Simulation and Visualization	1.0

Month 6

Month 6

Code	Title	Credit Hours
COS119	Project and Portfolio I: Computer Science	3.0
ENC1101	English Composition I	4.0

Month 7

Month 7

Code	Title	Credit Hours
SDV2213	Data Structures and Algorithms	4.0
GEN242	Linear Algebra	4.0

Month 8

Month 8

Code	Title	Credit Hours
GDD258	Software Engineering	4.0
SDV3012	Applied Human-Computer Interaction	3.0

Month 9

Month 9

Code	Title	Credit Hours
GEN262	Physics	4.0
SVB229	Project and Portfolio II: Simulation and Visualization	3.0

Month 10

Month 10

Code	Title	Credit Hours
SVB239	Project and Portfolio III: Simulation and Visualization	3.0
SIMC222	Professional Development Seminar II: Simulation and Visualization	1.0

Month 11

Month 11

Code	Title	Credit Hours
SIM313	Microcontrollers	4.0
GDD291	Operating Systems	3.0

Month 12

Month 12

Code	Title	Credit Hours
SIM3073	Simulation and Visualization Software	3.0
COD3721	Computer Networks	3.0

Month 13

Month 13

Code	Title	Credit Hours
SIM3321	Digital Fabrication	4.0

Month 14

Month 14

Code	Title	Credit Hours
GEN3322	Probability	4.0
SVB349	Project and Portfolio IV: Simulation and Visualization	3.0

Month 15

Month 15

Code	Title	Credit Hours
COD3315	Computer Graphics	3.0
SIM3032	Data Visualization and Modeling	3.0

Month 16

Month 16

Code	Title	Credit Hours
SDV4102	Machine Intelligence Systems	4.0
SIM4319	Virtual and Augmented Reality	3.0

Month 17

Month 17

Code	Title	Credit Hours
SIM4175	Simulation and Visualization Environments	3.0
HIS3320	Historical Archetypes and Mythology	4.0

Month 18

Month 18

Code	Title	Credit Hours
SVB359	Project and Portfolio V: Simulation and Visualization	3.0
SVB469	Project and Portfolio VI: Simulation and Visualization	3.0

Month 19

Month 19

Code	Title	Credit Hours
SIM4819	Simulation Production	3.0

Month 20

Month 20

Code	Title	Credit Hours
CRR4000	Career Readiness	4.0
SVB479	Project and Portfolio VII: Simulation and Visualization	3.0
	Total Credit Hours	**120**

Please Note

- Some specific courses may be offered online. Please see course descriptions for details.