

## Program Detailed Structure

<b>Term I</b>			
<b>Course</b>		<b>Prerequisite</b>	
<b>Code</b>	<b>Title</b>	<b>Code</b>	<b>Title</b>
<b>LH135</b>	ESP-I		
<b>BA101</b>	Calculus I		
<b>BA113</b>	Physics		
<b>AR115</b>	Visual Studies		
<b>CS111</b>	Introduction to Computers		
<b>IS171</b>	Introduction to Information systems		
<b>BA003 *</b>	Math 0		

<b>Term II</b>			
<b>Course</b>		<b>Prerequisite</b>	
<b>Code</b>	<b>Title</b>	<b>Code</b>	<b>Title</b>
<b>LH136</b>	ESP-II	<b>LH135</b>	ESP-I
<b>BA102</b>	Calculus II	<b>BA101</b>	Calculus I
<b>NC272</b>	Fundamentals of Business		
<b>EC134</b>	Fundamentals of Electricity and Electronics	<b>BA113</b>	Physics
<b>CS143</b>	Introduction to Problem Solving and Programming	<b>CS111</b>	Introduction to Computers
<b>NC233</b>	Communication Skills		

<b>Term III</b>			
<b>Course</b>		<b>Prerequisite</b>	
<b>Code</b>	<b>Title</b>	<b>Code</b>	<b>Title</b>
<b>CE216</b>	Digital Logic Design	<b>EC134</b>	Fundamentals of Electricity and Electronics
<b>CS243</b>	Object-Oriented Programming	<b>CS143</b>	Introduction to Problem Solving and Programming
<b>BA201</b>	Calculus III	<b>BA102</b>	Calculus II

<b>CS202</b>	Discrete Structures	<b>CS111</b>	Introduction to Computers
<b>BA203</b>	Probability and Statistics	<b>BA102</b>	Calculus II
	Humanities Elective		

(\*): *This course is added for students of science section only.*

<b>Term IV</b>			
<b>Course</b>		<b>Prerequisite</b>	
<b>Code</b>	<b>Title</b>	<b>Code</b>	<b>Title</b>
<b>SE291</b>	Introduction to Software Engineering	<b>CS243</b> <b>IS171</b>	Object-Oriented Programming Introduction to Information systems
<b>CS212</b>	Data Structures and Algorithms	<b>CS243</b>	Object-Oriented Programming
<b>CE243</b>	Intro. to Computer Architecture	<b>CE216</b>	Digital Logic Design
<b>BA204</b>	Linear Algebra	<b>BA102</b>	Calculus II
<b>IS373</b>	Database systems	<b>CS143</b>	Introduction to Problem Solving and Programming
<b>CE231</b>	Introduction to Networks	<b>CS143</b>	Introduction to Problem Solving and Programming

<b>Term V</b>			
<b>Course</b>		<b>Prerequisite</b>	
<b>Code</b>	<b>Title</b>	<b>Code</b>	<b>Title</b>
<b>GM350</b>	Introduction to Multimedia	<b>CS111</b>	Introduction to Computers
<b>CS433</b>	Web Programming	<b>IS373</b>	Database Systems
<b>CS244</b>	Advanced Programming Applications	<b>CS243</b>	Object-Oriented Programming
<b>SE391</b>	Project Management	<b>SE291</b>	Intro. to Software Engineering
<b>CS452</b>	Computer Graphics	<b>CS212</b> <b>BA204</b>	Data Structures and Algorithms Linear Algebra
	Minor Elective		

<b>Term VI</b>			
<b>Course</b>		<b>Prerequisite</b>	
<b>Code</b>	<b>Title</b>	<b>Code</b>	<b>Title</b>
<b>CS322</b>	Operating Systems	<b>CE243</b> <b>CS212</b>	Intro. to Computer Architecture Data Structures & Algorithms
<b>CS366</b>	Introduction to Artificial Intelligence	<b>CS202</b> <b>CS212</b>	Discrete Structures Data Structures & Algorithms
<b>GM352</b>	Digital Lighting and rendering	<b>CS452</b>	Computer Graphics

<b>GM354</b>	3D Modeling	<b>CS452</b>	Computer Graphics
<b>CS343</b>	Game Programming	<b>CS243</b> <b>CS452</b>	Object-Oriented Programming Computer Graphics
	Minor Elective		

<b>Term VII</b>			
<b>Course</b>		<b>Prerequisite</b>	
<b>Code</b>	<b>Title</b>	<b>Code</b>	<b>Title</b>
<b>GM450</b>	Computer Animation	<b>GM352</b>	Digital Lighting and rendering
<b>CS481</b>	Computers & Society		99 CR or more
<b>GM401</b>	Project I		GPA=2.0 & 99 CR or more
	Major Elective		
	Major Elective		
	Minor Elective		

<b>Term VIII</b>			
<b>Course</b>		<b>Prerequisite</b>	
<b>Code</b>	<b>Title</b>	<b>Code</b>	<b>Title</b>
<b>CS421</b>	Computer Security	<b>CS322</b> <b>CE231</b>	Operating Systems Introduction to Networks
<b>CS451</b>	Human Computer interaction	<b>SE291</b>	Introduction to Software Engineering
<b>GM402</b>	Project II	<b>GM401</b>	
	Major Elective		
	Major Elective		
	Minor Elective		

**Multimedia and Computer Graphics**  
**Department**

**Courses for Major Electives**

<b>Code</b>	<b>Title</b>	<b>Code</b>	<b>Prerequisite</b>
<b>GM355</b>	Digital Audio & Video Fundamentals	<b>GM350</b>	Introduction to Multimedia
<b>GM356</b>	Video Editing	<b>GM350</b>	Introduction to Multimedia
<b>GM357</b>	Media Production and Editing	<b>GM350</b>	Introduction to Multimedia
<b>CS444</b>	Computer Games programming: Tools and Techniques.	<b>CS343</b>	Game Programming
<b>GM471</b>	Computer Graphics Information Systems	<b>CS452</b>	Computer Graphics
		<b>IS171</b>	Intro. to Information systems
<b>CS462</b>	Machine Learning and AI for Games	<b>CS366</b>	Introduction to Artificial Intelligence
		<b>CS343</b>	Game Programming
<b>GM452</b>	Writing Games Analysis – concept art for gaming	<b>CS343</b>	Game Programming
		<b>GM354</b>	3D Modeling
<b>GM455</b>	3D animation and Graphics Programming Tools	<b>GM450</b>	Computer Animation
		<b>GM354</b>	3D Modeling
<b>GM456</b>	Video Databases	<b>GM350</b>	Introduction to Multimedia
		<b>IS373</b>	Database Systems
<b>GM457</b>	Game Modeling Design	<b>CS343</b>	Game Programming
<b>GM458</b>	Video Streaming	<b>GM350</b>	Introduction to Multimedia
		<b>CE231</b>	Introduction to Networks

## Courses for Minor Electives

### Computer Science

Code	Title	Prerequisite	
		Code	Title
CS301	Numerical Methods	BA204	Linear Algebra
		CS143	Intro. to Problem Solving & Programming
CS345	Structure of Programming Languages	CS311	Theory of Computation
		CS321	Systems Programming
CS311	Theory of Computation	CS202	Discrete Structures
CS405	System Modeling & Simulation	BA203	Probability and Statistics and 99 CR or more
CS321	System Programming	CS243 CE243	Object-Oriented Programming Intro. to Computer Architecture
CS312	Computing Algorithms	CS212 CS311	Data Structures & Algorithms Theory of Computations

### Information Systems

Course		Prerequisite	
Code	Title	Code	Title
IS372	Information Systems Theory & Practice	IS171	Introduction to Information systems
IS391	Systems Analysis & Design	IS171 CS243	Introduction to Information systems Object-Oriented Programming
IS474	Advanced Database Systems	IS373	Database Systems
IS371	E-business Fundamentals	IS171	Intro. to Information Systems
IS461	Decision Support Systems	CS366	Introduction to Artificial Intelligence

### Software Engineering

Course	Prerequisite
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<b>Code</b>	<b>Title</b>	<b>Code</b>	<b>Title</b>
<b>SE392</b>	Software Requirements & Specifications	<b>SE291</b>	Introduction to Software Engineering
<b>SE393</b>	Principle of Software Architecture	<b>SE291</b>	Introduction to Software Engineering
<b>SE491</b>	Software Component Design	<b>SE291</b>	Introduction to Software Engineering
<b>SE492</b>	Software Verification	<b>SE291</b>	Introduction to Software Engineering

## **Humanities Courses**

<b>Code</b>	<b>Title</b>
<b>NC252</b>	Principles of Marketing
<b>NC364</b>	Principle of Microeconomics
<b>NC373</b>	Global Business
<b>NC382</b>	Financial Accounting

## **Legend**

<b>AR</b>	Architecture	<b>BA</b>	Basic and Applied Sciences	<b>CE</b>	Computer Engineering
<b>CS</b>	Computer Science	<b>GM</b>	Graphics and Multimedia	<b>IS</b>	Information Systems
<b>LH</b>	Linguistics and Humanities	<b>NC</b>	Non-Computing	<b>SE</b>	Software Engineering