

# COMPUTER SCIENCE, BS

## Course Sequencing

### Systems Programming

#### First Year

		Hours
<b>Fall</b>		
USSE 1201	University Seminar	2
ENGL 1301	Writing and Rhetoric I	3
COSC 1435	Introduction to Problem Solving with Computers I	4
MATH 2413	Calculus I	4
Social and Behavioral Sciences Core Requirement		3
<b>Hours</b>		<b>16</b>

#### Spring

ENGL 1302	Writing and Rhetoric II or COMM 1311 or Foundation of Communication	3
COSC 1436	Introduction to Problem Solving with Computers II	4
COSC 3301	Cyber Security	3
MATH 2305	Discrete Mathematics I	3
<b>Hours</b>		<b>13</b>

#### Second Year

		Hours
<b>Fall</b>		
COSC 2334	Computer Architecture	3
COSC 2437	Data Structures	4
MATH 2414	Calculus II	4
POLS 2305	U.S. Government and Politics	3
Creative Arts Core Requirement		3
<b>Hours</b>		<b>17</b>

#### Spring

ENGL 3310	Technical and Professional Writing for Computer Science	3
COSC 3324	Object-oriented Programming	3
POLS 2306	State and Local Government	3
COSC 4360	Principles of Programming Languages	3
Approved Upper-Division COSC Course		3
<b>Hours</b>		<b>15</b>

#### Third Year

		Hours
<b>Fall</b>		
MATH 3342	Applied Probability and Statistics or MATH 3345 or Statistical Modeling and Data Analysis	3
COSC 3336	Introduction to Database Systems	3
COSC 3370	Software Engineering	3
MATH 3311	Linear Algebra	3
Science Sequence		4
COSC 3300	Computing Ethics and Professional Skills	3
<b>Hours</b>		<b>19</b>

#### Spring

COSC 3346	Operating Systems	3
COSC 3373	Software Project Management	3
Approved Upper-Division COSC Course		3

American History Core Requirement	3	
Science Sequence	4	
<b>Hours</b>		<b>16</b>

#### Fourth Year

##### Fall

COSC 4342	Computer Networks	3
COSC 4343	Algorithms	3
COSC 4353	Compiler Construction or COSC 4370 or Models of Computation	3
Approved Upper-Division COSC Course		3
American History Core Requirement		3
<b>Hours</b>		<b>15</b>

##### Spring

COSC 4354	Senior Capstone Project	3
COSC 4348	Systems Programming	3
Approved Upper-Division COSC Course		3
Language, Philosophy & Culture Core Requirement		3
<b>Hours</b>		<b>12</b>

**Total Hours 123**

## Cyber Security and Infrastructure

#### First Year

		Hours
<b>Fall</b>		
USSE 1201	University Seminar	2
ENGL 1301	Writing and Rhetoric I	3
COSC 1435	Introduction to Problem Solving with Computers I	4
MATH 2413	Calculus I	4
Social and Behavioral Sciences Core Requirement		3
<b>Hours</b>		<b>16</b>

#### Spring

ENGL 1302	Writing and Rhetoric II or COMM 1311 or Foundation of Communication	3
COSC 1436	Introduction to Problem Solving with Computers II	4
COSC 2348	Introduction to Scripting	3
MATH 2305	Discrete Mathematics I	3
<b>Hours</b>		<b>13</b>

#### Second Year

		Hours
<b>Fall</b>		
COSC 2334	Computer Architecture	3
COSC 2437	Data Structures	4
COSC 2465	Linux Systems	4
POLS 2305	U.S. Government and Politics	3
Creative Arts Core Requirement		3
<b>Hours</b>		<b>17</b>

#### Spring

COSC 2466	Network Systems	4
COSC 3336	Introduction to Database Systems	3
POLS 2306	State and Local Government	3
American History Core Requirement		3
Component Area Option Core Requirement		3
<b>Hours</b>		<b>16</b>

**Third Year****Fall**

COSC 3351	Internet Programming	3
ENGL 3310	Technical and Professional Writing for Computer Science	3
COSC 4365	Windows Security	3
MATH 3342 or MATH 3345	Applied Probability and Statistics or Statistical Modeling and Data Analysis	3
COSC 3346	Operating Systems	3

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**Hours** **15**

**Spring**

COSC 3370	Software Engineering	3
COSC 3300	Computing Ethics and Professional Skills	3
COSC 3372	Network Security	3
COSC 4310	Digital Forensics	3
Component Area Option Core Requirement		3
Approved Upper-Division COSC Course		3

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**Hours** **18**

**Fourth Year****Fall**

COSC 4367	Firewall and Intrusion Detection Systems	3
COSC 3474	Cyber Defense I	4
American History Core Requirement		3
Life & Physical Science Core Requirement		3

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**Hours** **13**

**Spring**

COSC 4354	Senior Capstone Project	3
COSC 4368	Penetration Testing	3
Approved Upper-Division COSC Course		3
Life & Physical Science Core Requirement		3
Language, Philosophy & Culture Core Requirement		3

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**Hours** **15**

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**Total Hours** **123**

**Computer Game Programming****First Year****Fall**

USSE 1201	University Seminar	2
ENGL 1301	Writing and Rhetoric I	3
COSC 1435	Introduction to Problem Solving with Computers I	4
MATH 2413	Calculus I	4
Social and Behavioral Sciences Core Requirement		3

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**Hours** **16**

**Spring**

ENGL 1302 or COMM 1311	Writing and Rhetoric II or Foundation of Communication	3
COSC 1436	Introduction to Problem Solving with Computers II	4
COSC 2325	Game Design	3
COSC 3301	Cyber Security	3

MATH 2305	Discrete Mathematics I	3
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**Hours** **16**

**Second Year****Fall**

COSC 2334	Computer Architecture	3
COSC 2437	Data Structures	4
PHYS 2425	University Physics I	4
MATH 2414	Calculus II	4

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**Hours** **15**

**Spring**

PHYS 2426	University Physics II	4
MATH 3311	Linear Algebra	3
ENGL 3310	Technical and Professional Writing for Computer Science	3
COSC 3325	Game Programming	3
COSC 3336	Introduction to Database Systems	3
Language, Philosophy & Culture Core Requirement		3

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**Hours** **19**

**Third Year****Fall**

COSC 3324	Object-oriented Programming	3
COSC 3300	Computing Ethics and Professional Skills	3
COSC 3346	Operating Systems	3
COSC 3385	Numerical Methods	3
COSC 4328	Computer Graphics	3
POLS 2305	U.S. Government and Politics	3

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**Hours** **18**

**Spring**

MATH 3342 or MATH 3345	Applied Probability and Statistics or Statistical Modeling and Data Analysis	3
COSC 3370	Software Engineering	3
COSC 4342	Computer Networks	3
COSC 4325	Advanced Game Programming	3

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**Hours** **12**

**Fourth Year****Fall**

COSC 4330	Introduction to Artificial Intelligence	3
COSC 4343	Algorithms	3
Theory Group		3
Approved Upper-Division COSC Course		3
American History Core Requirement		3

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**Hours** **15**

**Spring**

COSC 4354	Senior Capstone Project	3
POLS 2306	State and Local Government	3
American History Core Requirement		3
Creative Arts Core Requirement		3

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**Hours** **12**

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**Total Hours** **123**

## Computer Information Systems

### First Year

Fall		Hours
USSE 1201	University Seminar	2
ENGL 1301	Writing and Rhetoric I	3
COSC 1435	Introduction to Problem Solving with Computers I	4
MATH 2413	Calculus I	4
Social and Behavioral Sciences Core Requirement		3
<b>Hours</b>		<b>16</b>

### Spring

ENGL 1302	Writing and Rhetoric II or COMM 1311 or Foundation of Communication	3
COSC 1436	Introduction to Problem Solving with Computers II	4
MATH 2305	Discrete Mathematics I	3
Creative Arts Core Requirement		3
<b>Hours</b>		<b>13</b>

### Second Year

Fall		Hours
COSC 2334	Computer Architecture	3
COSC 2437	Data Structures	4
COSC 2470	COBOL Programming	4
Minor Course		3
POLS 2305	U.S. Government and Politics	3
ENGL 3310	Technical and Professional Writing for Computer Science	3
<b>Hours</b>		<b>20</b>

### Spring

COSC 3336	Introduction to Database Systems	3
Approved Upper-Division COSC Course		3
Minor Course		3
American History Core Requirement		3
POLS 2306	State and Local Government	3
<b>Hours</b>		<b>15</b>

### Third Year

Fall		Hours
MATH 3342	Applied Probability and Statistics or MATH 3345 or Statistical Modeling and Data Analysis	3
COSC 3300	Computing Ethics and Professional Skills	3
COSC 3346	Operating Systems	3
COSC 3324	Object-oriented Programming	3
Minor Course		3
American History Core Requirement		3
<b>Hours</b>		<b>18</b>

### Spring

COSC 3370	Software Engineering	3
Approved Upper-Division COSC Course		3
Life & Physical Science Core Requirement		3
Component Area Option Core Requirement		3
<b>Hours</b>		<b>12</b>

### Fourth Year

#### Fall

COSC 4342	Computer Networks	3
Approved Upper-Division COSC Course		3
Minor Course		3
Minor Course		3
Life & Physical Science Core Requirement		3
<b>Hours</b>		<b>15</b>

#### Spring

COSC 4354	Senior Capstone Project	3
Approved Upper-Division COSC Course		3
Minor Course		3
Language, Philosophy & Culture Core Requirement		3
Component Area Option Core Requirement		3
<b>Hours</b>		<b>15</b>
<b>Total Hours</b>		<b>124</b>

## Artificial Intelligence

### First Year

Fall		Hours
USSE 1201	University Seminar	2
ENGL 1301	Writing and Rhetoric I	3
COSC 1435	Introduction to Problem Solving with Computers I	4
MATH 2413	Calculus I	4
Social and Behavioral Sciences Core Requirement		3
<b>Hours</b>		<b>16</b>

### Spring

ENGL 1302	Writing and Rhetoric II or COMM 1311 or Foundation of Communication	3
COSC 1436	Introduction to Problem Solving with Computers II	4
COSC 3301	Cyber Security	3
MATH 2305	Discrete Mathematics I	3
Life and Physical Science Core Requirement		3
<b>Hours</b>		<b>16</b>

### Second Year

Fall		Hours
COSC 2334	Computer Architecture	3
COSC 2437	Data Structures	4
MATH 3311	Linear Algebra	3
POLS 2305	U.S. Government and Politics	3
Creative Arts Core Requirement		3
<b>Hours</b>		<b>16</b>

### Spring

ENGL 3310	Technical and Professional Writing for Computer Science	3
COSC 3336	Introduction to Database Systems	3
MATH 3342	Applied Probability and Statistics	3
POLS 2306	State and Local Government	3
American History Core Requirement		3
<b>Hours</b>		<b>15</b>

**Third Year****Fall**

COSC 3346	Operating Systems	3
COSC 4343	Algorithms	3
COSC 3326	Introduction to Image Processing and Computer Vision	3
COSC 3330	Introduction to Artificial Intelligence	3
Approved Upper-Division COSC Course		3
<b>Hours</b>		<b>15</b>

**Spring**

COSC 3370	Software Engineering	3
COSC 3345	Introduction to Machine Learning	3
Approved Upper-Division COSC Course		3
American History Core Requirement		3
Life and Physical Science Core Requirement		3
<b>Hours</b>		<b>15</b>

**Fourth Year****Fall**

COSC 3300	Computing Ethics and Professional Skills (Foundation of Language Models and Processing)	3
COSC 4335	Foundation of Language Models and Processing	3
COSC 4346	Introduction to Deep Learning	3
Approved Upper-Division COSC Course		3
Component Area Option Core Requirement		3
<b>Hours</b>		<b>15</b>

**Spring**

COSC 4354	Senior Capstone Project	3
COSC 4375	Knowledge Representation and Retrieval	3
Approved Upper-Division COSC Course		3
Language, Philosophy & Culture Core Requirement		3
Component Area Option Core Requirement		3
<b>Hours</b>		<b>15</b>
<b>Total Hours</b>		<b>123</b>