

# COMPUTER SYSTEMS OPTION

This option is offered within the following major(s):

- Computer Science - College of Engineering (<http://catalog.oregonstate.edu/college-departments/engineering/school-electrical-engineering-computer-science/computer-science-ba-bs-hba-hbs/>)

The Bachelor of Science (BS) and Honors Bachelor of Science (HBS) degrees for the Computer Systems Option of the Computer Science program are accredited by the Computing Accreditation Commission of ABET, <http://www.ABET.org> (<http://www.abet.org/>).

The Computer Systems option is for students who want to take up computer science as a career and seek an in-depth understanding of computer science as an academic discipline. This option provides excellent preparation for those who plan to work for companies developing systems software or embedded systems. It also provides excellent preparation for those who plan to pursue an MS or PhD in computer science.

## Option Code: 334

Code	Title	Credits
<b>Required Courses</b>		
COMM 111	*PUBLIC SPEAKING	3
or COMM 114	*ARGUMENT AND CRITICAL DISCOURSE	
CS 160	COMPUTER SCIENCE ORIENTATION	3
CS 161	INTRODUCTION TO COMPUTER SCIENCE I	4
CS 162	INTRODUCTION TO COMPUTER SCIENCE II	4-8
or CS 165	ACCELERATED INTRODUCTION TO COMPUTER SCIENCE	
CS 261	DATA STRUCTURES	4
CS 290	WEB DEVELOPMENT	4
ECE 271	DIGITAL LOGIC DESIGN	3
ECE 272	DIGITAL LOGIC DESIGN LABORATORY	1
MTH 231	ELEMENTS OF DISCRETE MATHEMATICS	4
or CS 225	DISCRETE STRUCTURES IN COMPUTER SCIENCE	
MTH 251	*DIFFERENTIAL CALCULUS	4
MTH 252	INTEGRAL CALCULUS	4
MTH 254	VECTOR CALCULUS I	4
MTH 306	MATRIX AND POWER SERIES METHODS	4
PH 211	*GENERAL PHYSICS WITH CALCULUS	4
PH 221	RECITATION FOR PHYSICS 211 <sup>1</sup>	1
WR 121	*ENGLISH COMPOSITION	3
<b>Additional Major Requirements</b>		
PH 212	*GENERAL PHYSICS WITH CALCULUS	8
& PH 213	and *GENERAL PHYSICS WITH CALCULUS	
PH 222	RECITATION FOR PHYSICS 212	2
& PH 223	and RECITATION FOR PHYSICS 213 <sup>1</sup>	
ST 314	INTRODUCTION TO STATISTICS FOR ENGINEERS	3
WR 214	*WRITING IN BUSINESS	3
or WR 222	*ENGLISH COMPOSITION	
WR 327	*TECHNICAL WRITING	3
Computer Science, College of Science, Engineering, or Liberal Arts Electives		6
Total Credits		79-83

Code	Title	Credits
<b>Other Required Courses</b>		
CS 321	INTRODUCTION TO THEORY OF COMPUTATION	3
CS 325	ANALYSIS OF ALGORITHMS	4
CS 340	INTRODUCTION TO DATABASES	4
CS 344	OPERATING SYSTEMS I	4

CS 361	SOFTWARE ENGINEERING I	4
CS 362	SOFTWARE ENGINEERING II	4
CS 372	INTRODUCTION TO COMPUTER NETWORKS	4
CS 381	PROGRAMMING LANGUAGE FUNDAMENTALS	4
CS 391	*SOCIAL AND ETHICAL ISSUES IN COMPUTER SCIENCE	3
CS 444	OPERATING SYSTEMS II	4
CS 461	*SENIOR SOFTWARE ENGINEERING PROJECT I	3
CS 462	*SENIOR SOFTWARE ENGINEERING PROJECT II	3
CS 463	SENIOR SOFTWARE ENGINEERING PROJECT	2
CS 480	TRANSLATORS	4
CS 472	COMPUTER ARCHITECTURE	4
or ECE 472	COMPUTER ARCHITECTURE	
ECE 375	COMPUTER ORGANIZATION AND ASSEMBLY LANGUAGE PROGRAMMING	4

## Computer Science Restricted Electives 12

Select three to four of the following:

CS 300–400 level courses (excluding CS 410 and courses required for Professional Program)	
CS 401-CS 406 (limited to 6 total credits)	
ECE 300–400 level courses (excluding courses required for Professional Program)	
MTH 351	INTRODUCTION TO NUMERICAL ANALYSIS
MTH 440	COMPUTATIONAL NUMBER THEORY
MTH 451	NUMERICAL LINEAR ALGEBRA
MTH 452	NUMERICAL SOLUTION OF ORDINARY DIFFERENTIAL EQUATIONS
MTH 453	NUMERICAL SOLUTION OF PARTIAL DIFFERENTIAL EQUATIONS

Others may apply with prior department approval

## Baccalaureate Core

Biological Science Course		4
Difference, Power, and Discrimination Course		3-4
HHS 231	*LIFETIME FITNESS FOR HEALTH	2
HHS 241	*LIFETIME FITNESS (or any PAC course)	1
Perspectives Course (Cultural Diversity)		3-4
Perspectives Course (Literature & Arts)		3-4
Perspectives Course (Social Processes & Institutions)		3-4
Perspectives Course (Western Culture)		3-4
Synthesis Course (Contemporary Global Issues)		3-4
Unrestricted Electives		0-6
<b>Total credits required for graduation</b>		<b>180</b>

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3 credits of PH 221, PH 222, and PH 223 can be substituted with a physical science course (3 cr. or higher).

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Baccalaureate Core Course (BCC)

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Writing Intensive Course (WIC)

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