

Certificate in science program ($\geq 638xxxx$)

AM

Certificate in Actuarial Mathematics (≥ 638)	
To earn certificate in actuarial mathematics, students need to complete the following 12 credits courses in addition to or included in their existing requirement(s) for their respective major(s), minor(s) or certificate(s).	
Actuarial Mathematics Certificate Courses 12 credits	
	Credit
ICMA 353 Actuarial Mathematics I	4 (4-0-8)
ICMA 354 Actuarial Mathematics II	4 (4-0-8)
ICMB 215 Business Finance for Entrepreneurs	4 (4-0-8)

CH

Certificate in Chemistry for non-chemistry students (≥ 638)
Chemistry Certificate courses
To receive a certificate in Chemistry, students need to complete at least 12 credits chemistry courses in addition to their existing requirement(s) for their respective major(s), minor(s) or certificate(s). The list of available courses is the same as for minor.

PY

Certificate in Physics (≥ 638)	
The physics program offers a certificate in gadget developer. Students are required to complete 12 credits from the following courses	
Certificate in Gadget Developer	
	Credit
ICPY 102 Physics II	4 (4-0-8)
ICPY 221 Computer Programming for Physics	4 (4-0-8)
ICPY 492 Electronics	4 (4-0-8)

Certificates in Computer Science (≥ 638)

Students in any major, including Computer Science, can earn a certificate below when they complete the set of 3 courses as specified for that certificate. Certificates are optional, and multiple certificates may be awarded.

AI and Analytics	
ICCS 361 Data Mining	4 (4-0-8)
ICCS 371 Scalable Systems	4 (4-0-8)
ICCS 461 Machine Learning	4 (4-0-8)
Software Platform Engineering	
ICCS 320 Computer Networks	4 (4-0-8)
ICCS 322 Operating Systems Design and Implementation	4 (4-0-8)
or	
ICCS 324 Computer Architecture	4 (4-0-8)
ICCS 371 Scalable Systems	4 (4-0-8)
UX, UI, and How to Make It Work	
ICCD 119 2D Design Principles	4 (2-4-6)
ICCS 302 Human Computer Interaction and Visualization	4 (4-0-8)
ICCS 340 Web Application Development	4 (4-0-8)
or	
ICCS 488 Mobile Application Programming	4 (4-0-8)

Computer Science Certificates (≥ 638)

Students from majors other than Computer Science can choose to complete any Computer Science certificates as listed in the Computer Science I-Design section with the additional of the following certificate:

Computer Science Foundation	
ICCS 101 Introduction to Computer Programming	4 (3-2-7)
ICCS 208 Data Structures and Abstractions	4 (3-2-7)
ICCS 206 Discrete Mathematics	4 (4-0-8)