

Bachelor of Science in Software Engineering

APPLICATION DOMAINS

(2021-2022)

Application Domains (9 hours)

An important aspect of Software Engineering education is the use of software engineering concepts in a particular application domain. Students must complete at least one of the Application Domains below. Additional Application Domains may become available. **Completing an Application Domain may require careful scheduling since many of these classes will not be offered every semester.** Students are strongly encouraged to consult with an advisor and to plan schedules to include the following tentative schedule and the required prerequisites. Courses in each of the domains can be substituted by other appropriate elective courses offered in a particular semester with consent of the Computer Science Department. Consult your Academic Advisor.

Networks (9 hours)

Prereqs

CS 4390 Computer Networks	CS/CE/SE/TE 3345 or Equivalent
CS 4393 Computer Network Security	CS/CE/SE/TE 4348 or Equivalent
CS 4396 Networking Laboratory	CS 4390 or Equivalent

Information Assurance (9 hours)

Prereqs

CS 4389 Data & Applications Security	CS/SE 4347
CS 4393 Computer Network Security	CS/CE/SE/TE 4348 or Equivalent
CS 4398 Digital Forensics	CS/CE/SE/TE 4348, CS 4390, or Equivalent

Embedded Systems (9 hours)

Prereqs

CS 4341/4141 Digital Logic and Computer Design and Laboratory	CS/SE/TE 3340 or CE/EE 2310 and Phys 2326
CS/SE/TE 4348 Operating Systems Concepts	CS/SE/TE 3340 or Equivalent, CS/CE/SE/TE 3345, and CS/SE 3377
CS 4397 Embedded Computer Systems	CS/SE/TE 4348 or Equivalent

Computer Imaging (9 hours)

Prereqs

CS 4361 Computer Graphics	Math 2418, CS/CE 2336, CS/CE/SE/TE 3345 or Equivalent
CS 4391 Introduction to Computer Vision	CS/CE/SE/TE 3345 or Equivalent
CS 4392 Computer Animation	Math 2418 and CS/CE/SE/TE 3345 or Equivalent

Artificial Intelligence & Cognitive Modeling (9 Hours - TAKE 3 of 5)

Prereqs

CS 4314 Intelligent Systems Analysis	CGS 4313 or consent of instructor
CS 4315 Intelligent Systems Design	CGS 4313 or consent of instructor
CS 4365 Artificial Intelligence	CS/CE/SE/TE 3345 or Equivalent
CS 4375 Introduction to Machine Learning	CS/SE 3341 and CS/CE/SE/TE 3345 or Equivalent
CS 4395 Human Language Technologies	CS/SE 3341 and CS/CE/SE/TE 3345 or Equivalent

Human-Computer Interaction (9 hours)

Prereqs

CS 4352 Human Computer Interactions I	
CS 4353 Human Computer Interactions II	
CS 4361 Computer Graphics	Math 2418, CS/CE 2336, CS/CE/SE/TE 3345 or Equivalent