BS-CS Tracking Form for major requirements

Name: _____________________  ID#: ____________  Advisor: ______________

Two introductory CS courses

121  Problem Solving
Term: Grade:

187  Data Structures
Term: Grade:

Four core CS courses

220  Programming: Methodology
Term: Grade:

250  Intro to Computation
Term: Grade:

230  Comp Systems Principles
Term: Grade:

240  Reasoning Under Uncertainty
Term: Grade:

Four math courses

M131  Calc I
Term: Grade:

M132  Calc II
Term: Grade:

M233 or S515  Calc III or Stats I
Term: Grade:

M235  Linear Algebra
Term: Grade:

Students are strongly encouraged not to take 220 and 230, or 240 and 250 together in the same semester.

Eight CS electives. Choose a subplan (see back for requirements)

- General Computer Science (below)
- Networking
- Software Engineering
- Software Systems
- Security & Privacy
- Programming Lang. & Compilers
- Robotics, Vision, and Graphics
- Theory of Computation
- Artificial Intelligence
- Search & Data Mining
- Computer Architecture

prereq: 230
prereq: 250
prereqs: (220 or 230) & 240

377  Operating Systems
Term: Grade:

311  Algorithms
Term: Grade:

383  Artificial Intelligence
Term: Grade:

6 credits ≥ 300
9 credits ≥ 400 CS courses only.

305  Social Issues
Term: Grade:

8 credits of science courses:

CHEM 111, 112 (or 121, 122);
GEO-SCI 101/lab, 103/131, 105/131);
or
PHYSIC 151, 152 (or 181, 182)

Term: Grade:

Term: Grade:

Term: Grade:

Term: Grade:

Students should satisfy these requirements in their primary.

Minimum 2.0 cumulative GPA in all courses applied to major. Pass/Fail not allowed in major.

GPA

Students are strongly encouraged not to take 220 and 230, or 240 and 250 together in the same semester.

prereqs:

CHEM 111, 112 (or 121, 122);
GEO-SCI 101/lab, 103/131, 105/131);
or
PHYSIC 151, 152 (or 181, 182)

Term: Grade:

Term: Grade:

Term: Grade:

Term: Grade:

Please see the section on Lab Science Courses at:
https://www.cs.umass.edu/ugrad-education/details-bs-requirements

Univ. and GenEd requirements should be checked on SPIRE. This form is for guidance only. The College has waived the Foreign Language Requirement for the BS degree (not the BA); ignore warnings on Spire.
SubPlans, other than GENCMSC
Pick only one!
• All numbers refer to CS courses.
• up to 3 credits total of 499T/P or 496 as noted [or 396 or above may satisfy a CS elective]. UPD approval required.
• † Graduate (600) level courses are permitted, but often have twice the workload of undergraduate courses.

Software Engineering (SOFTENG)
• Four required courses:
  311 Algorithms
  320 Software Engineering
  520 SE-Synthesis
  521 SE-Analysis & Evaluation
• Any two courses from the following:
  325 Intro HCI (or 590C HCI)
  365 Digital Forensics
  377 Operating Systems
  410 Compilers
  445 Information Systems
  453 Computer Networks
  453 Intro to Security
  499T/P or 496 (see note)
• Any one course from the following:
  383 Artificial Intelligence
  403/503 Robotics (Embedded Systems)
  473(or 390CG) Comp Graphics
  590GM (or 590GC 3D Mod & Sim)
• Two CS electives ≥ 300:
  1.  
  2.  

Theory of Computation (THEORYCMP)
• Three required courses:
  311 Algorithms
  320 Software Engineering
  501 Formal Language Theory
• Any one course from the following:
  377 Operating Systems
  445 Information Systems
  453 Computer Networks
  535 Architecture (or 335)
• Any two courses from the following:
  499T/P or 496 (see note)
  513 Logic in CS
  575 Comb. & Graph Theory
  590D Algorithms for Data Sci
  601 Computation Theory †
  611 Advanced Algorithms †
  MATH 411 Int. Abstract Alg.
• Two CS electives ≥ 300:
  1.  
  2.  

Computer Architecture (CMPCARCH)
• Four required courses:
  311 Algorithms
  320 Software Engineering
  535 Architecture
  635 Modern Architecture
• Any two courses from the following:
  377 Operating Systems
  410 Compilers
  445 Information Systems
  453 Computer Networks
  499T/P or 496 (see note)
  501 Formal Language Theory
  520 SE-Synthesis I
  530 Programming Languages
  610 Compiler Techniques †
  653 Adv. Comp. Networks †
  677 Adv. OS †
  ECE 353 Digital Logic I
  ECE 354 Digital Logic II
  ECE 558 Architecture
• Two CS electives ≥ 300, one specifically not listed above:
  1.  
  2.  

Security & Privacy (SECURPRV)
• Three required courses:
  311 Algorithms
  377 Operating Systems
  460 Introduction to Security
• Any one course from the following:
  348 Knowledge Discovery
  445 Information Systems
  453 Computer Networks
  590CC Cloud Computing
• Any two courses from the following:
  365 Digital Forensics
  466 (or 597CR Crypto Engg)
  591SP MultStdySec (or 660 †)
  ECE 597AB Security Engg
• Two CS electives ≥ 300:
  1.  
  2.  

Software Systems (SOFTSYS)
• Four required courses:
  311 Algorithms
  320 Software Engineering
  377 Operating Systems
  445 Information Systems
• Any two courses from the following:
  325Intro HCI (or 590C HCI)
  453 Computer Networks
  460 Introduction to Security
  466 (or 597CR Crypto Engg)
  535 Architecture (or 335)
  590CC Cloud Computing
  653 Adv. Comp. Networks †
• Two CS electives ≥ 300:
  1.  
  2.  

Networking (NETWORK)
• Four required courses:
  311 Algorithms
  377 Operating Systems
  453 Computer Networks
  491S Networking Lab
• Any two courses from the following:
  320 Software Engineering
  445 Information Systems
  460 Introduction to Security
  466 (or 597CR Crypto Engg)
  590CC Cloud Computing
  653 Adv. Comp. Networks †
• Two CS electives ≥ 300:
  1.  
  2.  

Programming Languages & Compilers (PROGLANG)
• Four required courses:
  311 Algorithms
  377 Operating Systems
  410 Compilers
  530 Programming Languages
• Any two courses from the following:
  320 Software Engineering
  445 Information Systems
  499T/P or 496 (see note)
  535 Architecture (or 391B)
• Two CS electives ≥ 300:
  1.  
  2.  

Search & Data Mining (SRCHDATA)
• Six required courses:
  311 Algorithms
  320 Software Engineering
  348 Knowledge Discovery
  445 Information Systems
  446 Search Engines
  585 Natural Lang. Processing
• Two CS electives ≥ 300:
  1.  
  2.  

Robotics, Vision & Graphics (ROBVISGR)
• Five required courses:
  311 Algorithms
  320 Software Engineering
  370 Computer Vision (or 670 †)
  403/503 Robotics/Eembedded Systems
  473(or 390CG) Comp Graphics
• Any one course from the following:
  383 Artificial Intelligence
  403/503 Robotics (if not used above)
  474 Adv. Image Synthesis
  499T/P or 496 (see note)
• Two CS electives ≥ 300:
  1.  
  2.  

ECE Courses:
• Two CS electives ≥ 300:
  1.  
  2.  

Artificial Intelligence (AI)
• Three required courses:
  311 Algorithms
  320 Software Engineering
  383 Artificial Intelligence
• Any two courses from the following:
  370 Computer Vision (or 670 †)
  403 Robotics
  446 Search Engines
  503 Embedded Systems
  585 Natural Lang. Processing
  589 Machine Learning
  683 Advanced AI †
• Three CS electives ≥ 300:
  1.  
  2.  
  3.  

Note: At least 3 of the 8 track courses must be ≥ 400 level