BS Tracking Form for CS Major requirements

Effective Fall 2016

Name: ______________________ ID#: ______________________ Advisor: ______________________

**Two Introductory CS Courses**

121
Intro to Problem Solving
Semester: ______________________
Grade: ______________________

187
Data Structures
Semester: ______________________
Grade: ______________________

**Four Math Courses**

M131
Calc I
Semester: ______________________
Grade: ______________________

M132
Calc II
Semester: ______________________
Grade: ______________________

M233
Multivariate Stats
Semester: ______________________
Grade: ______________________

M235
Linear Algebra
Semester: ______________________
Grade: ______________________

**Four CS Core Courses**

220
Programming Methodology
Semester: ______________________
Grade: ______________________

230
Comp Sys Principles
Semester: ______________________
Grade: ______________________

240
Reasoning Under Uncertainty
Semester: ______________________
Grade: ______________________

250
Intro to Computation
Semester: ______________________
Grade: ______________________

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

**Eight Upper-Level Courses**

301
Algorithms
Semester: ______________________
Grade: ______________________

CS 300+
Semester: ______________________
Grade: ______________________

Or, Outside Approved Elective**
Semester: ______________________
Grade: ______________________

305
Social Issues in Computing
Semester: ______________________
Grade: ______________________

**Integrative Experience**

Choice of 320*, 326*
Semester: ______________________
Grade: ______________________

*320 or 326 may also satisfy an upper-level elective.

Choice of 320*, 326*
Semester: ______________________
Grade: ______________________

*320 or 326 may also satisfy an upper-level elective.

**Approved outside courses include:
ECE 353, ECE 597AB, ECE 668, LINGUIST 401,
MATH 411, MATH 545, MATH 551, MATH 552

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Univ requires IE and JYW courses be taken at UMass Amherst. Secondary CS Majors should satisfy IE and JYW Req in primary major.

JrYr Writing

305
Social Issues in Computing
Semester: ______________________
Grade: ______________________

JrYr Writing

305
Social Issues in Computing
Semester: ______________________
Grade: ______________________

*IE Req., if 320 or 326

Choice of 320*, 326*
Semester: ______________________
Grade: ______________________

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Semester: ______________________
Grade: ______________________

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

**CNS Lab Science Courses (8 credits)**

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

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

University and GenEd requirements should be checked on SPIRE. This form is for guidance only.
Specialized Study in CS

All numbers refer to CS courses unless otherwise noted.

Select courses that satisfy Eight (8) upper-level requirements for the BS:

- 311 Algorithms
- 3 CS300+ (may include IE Req)
- 3 CS400+
- 1 CS300+ (or Outside Approved Elec)

NOTE: UPD may approve a maximum of 3 credits of CS 499T/P or CS 396/496 to satisfy a CS elective at the appropriate level.

While some graduate courses (600 level+) are permitted, these often have twice the workload of undergrad courses and may not be available to undergraduates.

CS Upper Level Elective Options

ARTIFICIAL INTELLIGENCE
320 Software Engineering
383 Artificial Intelligence
370 Computer Vision
403 Intro to Robotics
446 Search Engines
503 Embedded Systems
585 Natural Language Processing
589 Machine Learning

COMPUTER ARCHITECTURE
320 Software Engineering
377 Operating Systems
410 Compiler Techniques
445 Information Systems
453 Computer Networks
501 Formal Language Theory
585 Natural Language Processing
589 Machine Learning

DATA SCIENCE
320 Software Engineering
326 Web Programming
348 Knowledge Discovery
370 Computer Vision
390MB Mobile Health Sens/Monitor
445 Information Systems
446 Search Engines
585 Natural Language Processing
589 Machine Learning

MATH 545 Linear Alg for Applied Math
MATH 552 Appl Sci Computing

INFORMATION RETRIEVAL
320 Software Engineering
325 Intro to HCl
345 Practice/Applic of Data Mgmt
348 Knowledge Discovery
370 Computer Vision
445 Information Systems
446 Search Engines
585 Natural Language Processing
589 Machine Learning

NATURAL LANGUAGE PROCESSING
320 Software Engineering
326 Web Programming
348 Knowledge Discovery
383 Artificial Intelligence
445 Information Systems
446 Search Engines
501 Formal Language Theory
585 Natural Language Processing
589 Machine Learning

LINGUIST 401 Intro to Syntax

NETWORKING
320 Software Engineering
377 Operating Systems
445 Information Systems
453 Computer Networks
460 Intro to Security
466 Applied Cryptography
491G Networking Lab
590B Detecting Interference in Ntwks
590CC Cloud Computing
597CR Crypto Engineering

ROBOTICS, VISION AND GRAPHICS
320 Software Engineering
370 Computer Vision
373 Intro to Computer Graphics
383 Artificial Intelligence
403 Intro to Robotics
474 Image Synthesis
503 Embedded Systems
590GC 3D Modeling & Simulation

SECURITY AND PRIVACY
348 Knowledge Discovery
365 Digital Forensics
377 Operating Systems
391L Computer Crime Law
445 Information Systems
453 Computer Networks
460 Intro to Security
466 Applied Cryptography
590B Detecting Interference in Ntwks
590CC Cloud Computing
591SP MultDisc Study of Sec/Priv
597CR Crypto Engineering

SOFTWARE ENGINEERING
320 Software Engineering
325 Intro to HCl
335 In Box: How Computers Work
377 Operating Systems
445 Information Systems
453 Computer Networks
460 Intro to Security
466 Applied Cryptography
535 Computer Architecture
590B Detecting Interference in Ntwks
590CC Cloud Computing
590C Human Comp Interaction

SOFTWARE SYSTEMS
320 Software Engineering
325 Intro to HCl
335 In Box: How Computers Work
377 Operating Systems
445 Information Systems
453 Computer Networks
460 Intro to Security
466 Applied Cryptography
535 Computer Architecture
590B Detecting Interference in Ntwks
590C Human Comp Interaction
590CC Cloud Computing
597CR Crypto Engineering

THEORY OF COMPUTATION
320 Software Engineering
335 In Box: How Computers Work
377 Operating Systems
445 Information Systems
453 Computer Networks
501 Formal Language Theory
513 Logic in CS
535 Computer Architecture
575 Combntrcs & Graph Theory
590D Algorithms for Data Science

MATH 551 Intro Scientific Computing
MATH 411 Intro Abstract Algebra I

MY PLANNED UPPER-LEVEL CS

1. 311
2. 3____IE Req: 320 or 326
3. 3____
4. 3____
5. 4____
6. 4____
7. 4____
8. 3____/Outside______