BS-CMPSCI Tracking Form for departmental 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 Calc III or Stats I
Term: Grade:
M235 Linear Algebra
Term: Grade:

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

Int Experience:

Jr Yr Writing:

- __ __ Choice of 320, 326, or 305
- __ __ NatSci 494
- __ __ Social Issues

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

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:

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

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

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 GENCOMPSCI
Pick only one!

- All numbers refer to CS courses
- up to 3 credits total of 497/T 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 (SOFTENGIN)

- Four required courses:
  - 311 Algorithms
  - 320 Software Engineering
  - 520 SE-Synthesis
  - 521 SE-Analysis & Evaluation
- Any two courses from the following:
  - 325 Usability
  - 365 Digital Forensics
  - 377 Operating Systems
  - 410 Compilers
  - 445 Information Systems
  - 453 Computer Networks
  - 460 Intro to Security
  - 499T/P or 496 (see note)
  - 501 Formal Lang/Theory
  - 513 Logic in CS
  - 529 SE Project Management
  - 575 Comb. & Graph Theory
- Two CS electives ≥ 300:
  1.                     2.                     

### Artificial Intelligence (ARTIFINTEL)

- 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

### Search & Data Mining (SRCHDATAMIN)

- 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 (ROBVISGRAPH)

- Five required courses:
  - 311 Algorithms
  - 320 Software Engineering
  - 370 Computer Vision (or 670 †)
  - 403/503 Robotics/Embedded Sys
  - 473 (or 390CG) Comp Graphics
- Any one course from the following:
  - 383 Artificial Intelligence
  - 474 Adv. Image Synthesis
  - 499T/P or 496 (see note)
  - 590GM Geometric Modeling
  - 603 Robotics †
  - 617 Comp. Geometry †
  - 690IV Intel Visual Computing †
- Two CS electives ≥ 300:
  1.                     2.                     

### Theory of Computation (THEORYCOMP)

- Three required courses:
  - 311 Algorithms
  - 320 Software Engineering
  - 501 Formal Lang Theory
- Any one course from the following:
  - 377 Operating Systems
  - 445 Information Systems
  - 453 Computer Networks
  - 535 Architecture (or 391IB)
- Any two courses from the following:
  - 499T/P or 496 (see note)
  - 513 Logic in CS
  - 575 Comb. & Graph Theory
  - 601 Computation Theory †
  - 611 Advanced Algorithms †
  - MATH 411 Int. Abstract Alg. I
- Two CS electives ≥ 300:
  1.                     2.                     

### Computer Architecture (COMPARCH)

- Four required courses:
  - 311 Algorithms
  - 320 Software Engineering
  - 535 Architecture
  - 635 Modern Architecture
- Any two courses from the following:
  - 377 Operating Systems
  - 440 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 (SECURITY)

- 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
- Any two courses from the following:
  - 365 Digital Forensics
  - 391LI Computer Crime Law
  - 466 Applied Cryptography
  - 660 Adv. Info Assurance †
  - ECE 597AB Security Engg
- Two CS electives ≥ 300:
  1.                     2.                     

### Networking (NETWORKING)

- Four required courses:
  - 311 Algorithms
  - 320 Software Engineering
  - 445 Information Systems
  - 4913 Networking Lab
- Any two courses from the following:
  - 325 Usability
  - 453 Computer Networks
  - 460 Introduction to Security
  - 466 Applied Cryptography
  - 653 Adv. Comp. Networks †
- Two CS electives ≥ 300:
  1.                     2.                     

### Software Systems (SOFTSYSMS)

- Four required courses:
  - 311 Algorithms
  - 320 Software Engineering
  - 377 Operating Systems
  - 445 Information Systems
- Any two courses from the following:
  - 325 Usability
  - 453 Computer Networks
  - 460 Introduction to Security
  - 466 Applied Cryptography
  - 677 Operating Systems †
- Two CS electives ≥ 300:
  1.                     2.                     

### Programming Languages & Compilers (PROGLANCMCP)

- 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 391IB)
- Two CS electives ≥ 300:
  1.                     2.                     

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November 11, 2014