College of Information and Computer Sciences
UG CS Orientation
Fall 2015

Welcome!

CS By The Numbers!

- **866 Majors!**
- **50 Applicants**
- **88 Minors**
- **~101 UGs graduating each year** (Feb, May, Sept)
- **50 Faculty**
- **~250 Graduate Students**
  - 175 PhD track (5 Bay State)
  - 75 MS track (25 Bay State)

Undergraduate Academic Program Officers

Chair
(Allan)

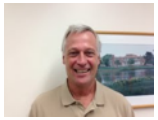
Associate Chair for
Academic Affairs
(Barrington)

UPM
(Fahey)

UPA
(Tara
LaFlamme)

Student
Outreach
Committee

UG Events
(Moll)



Undergraduate
Program Director
(Grupen)

Chief Undergraduate
Adviser
(Richards)

Honors
Program
(Marlin)

Transfers
(Anderson)

Peer Advising
Manager
(Verts)

Faculty
Advisers

CS ROCKs 5 Student
Leadership Committee

ACE 5 Student
Leadership Committee

CS Program

BS in Computer Science

- **Comprehensive Training in Computer Science**
- **Course Requirements**
  - 14 Computer Science
  - 4 Math
  - 2 Majors-Level Science
- **BS-CMPSCI Students Prepared For**
  - Graduate Study in CS
  - Most Technical Entry-Level Jobs in Industry

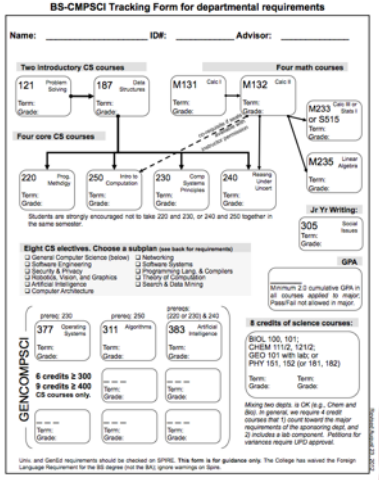
BA in Computer Science

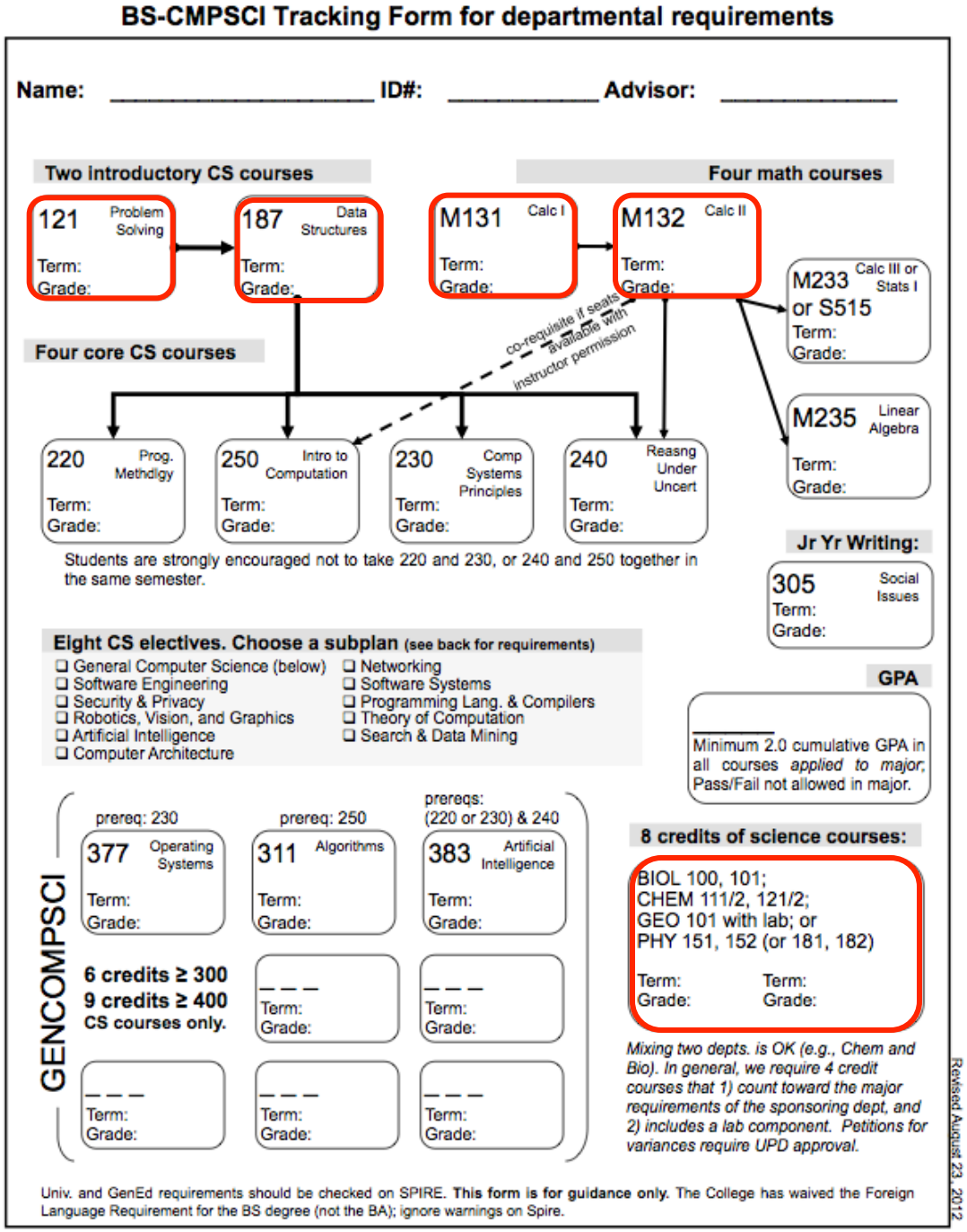
- **Computing Focus Degree in CS**
- **Course Requirements (Less CS)**
  - 10 Computer Science
  - 3 Math
  - Foreign Language
  - 4-Course Concentration

- **BA-CMPSCI Students Prepared For**
  - Application of computing to a secondary area

Timeline & Progress

- **Planning is important**
  - CS Classes you need to take
  - Requirements you need to fulfill
- **Keep track of your progress!**
  - Tracking Forms
  - https://www.cs.umass.edu/sites/default/files/uploads/BS-CMPSCI-tracking.pptx_.pdf
  - https://www.cs.umass.edu/sites/default/files/uploads/BA-CMPSCI-tracking.pptx_.pdf



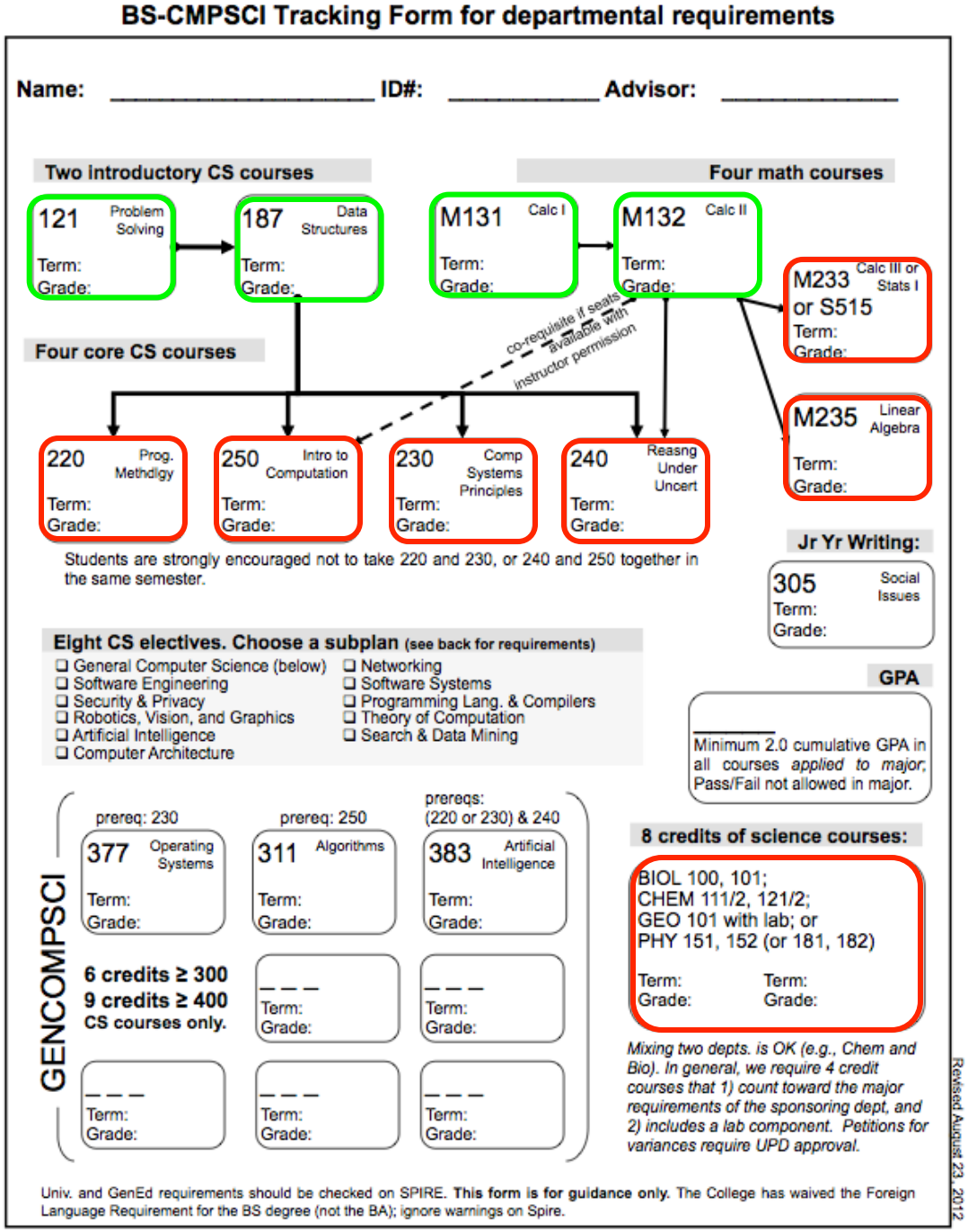


Computer Science Bachelors of Science

Freshmen Year

Thoughts

- Study Habits
- Attendance/ Participation!
- Office Hours!
- What courses did I like/dislike

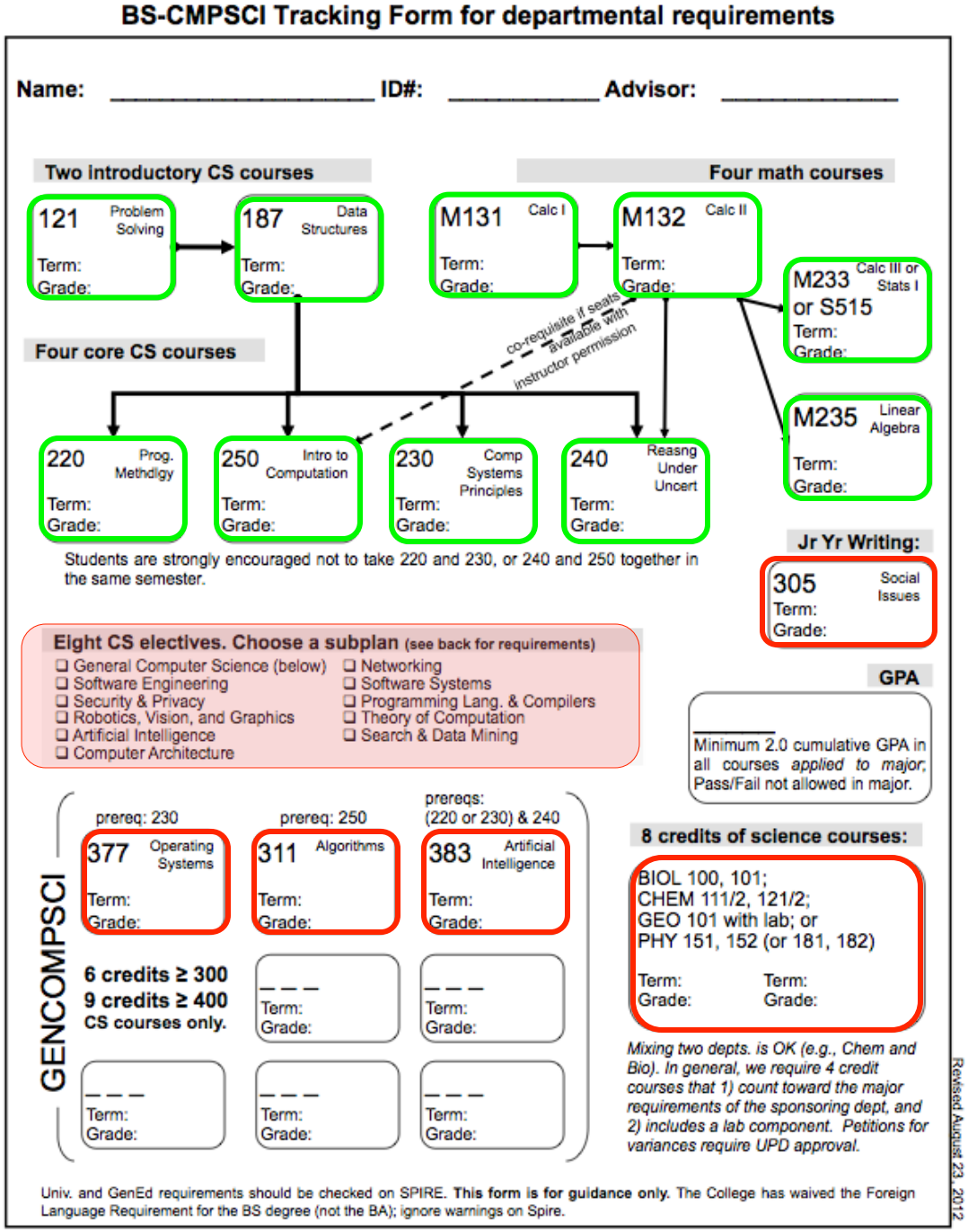


Computer Science Bachelors of Science

Sophomore Year

Thoughts

- Am I interested in the ACM group?
- Internships?
- Semester Abroad?
- Post-Grad Plans?
- Baystate Fellowship?

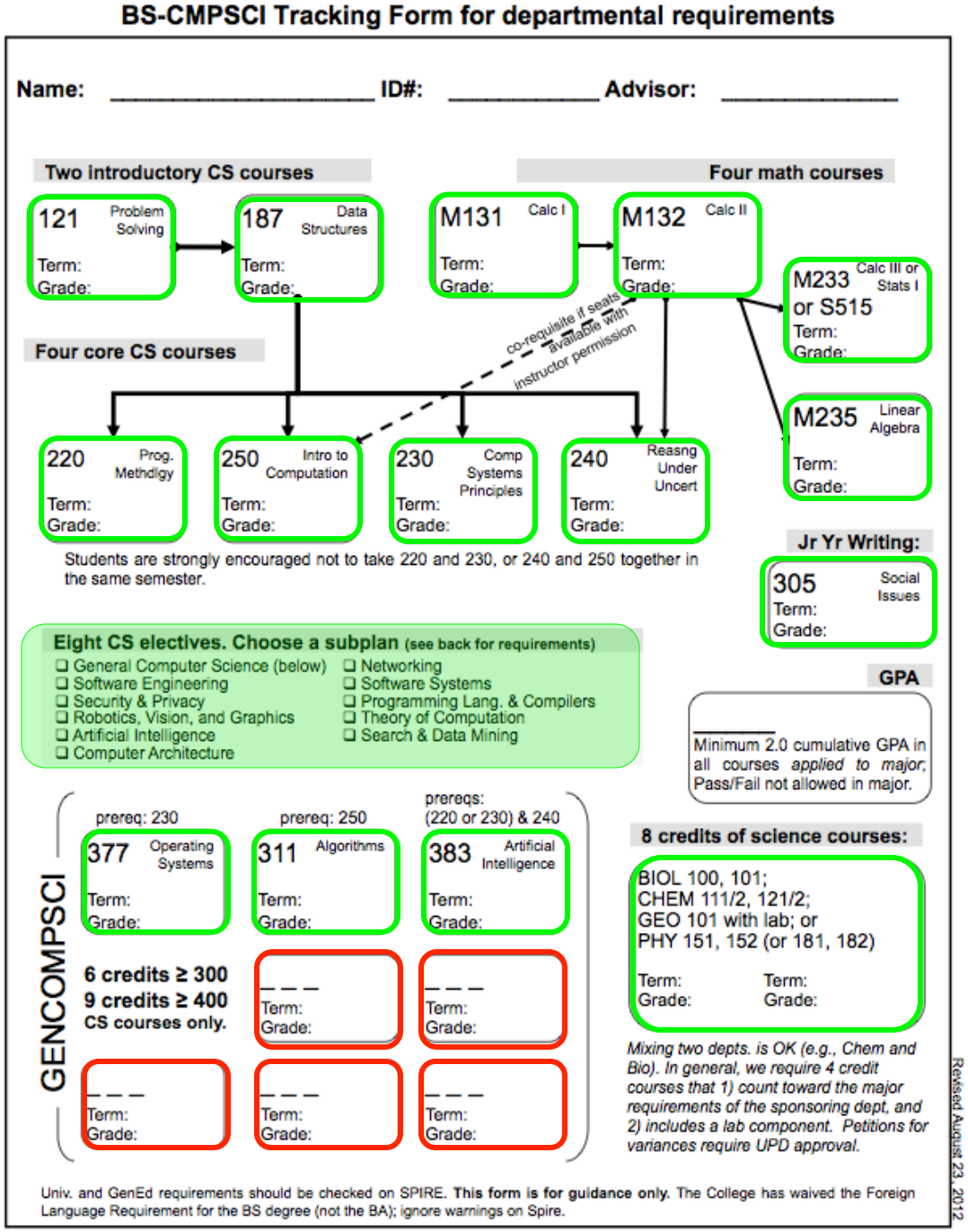


Computer Science Bachelors of Science

Junior Year

Thoughts

- CMPSCI 320 – Integrative Experience
- Internship?
- Baystate?
- REU Program?
- Industry or Grad School?



Computer Science Bachelors of Science

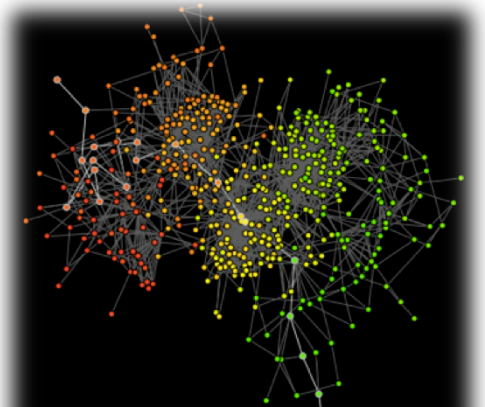
Senior Year

Thoughts

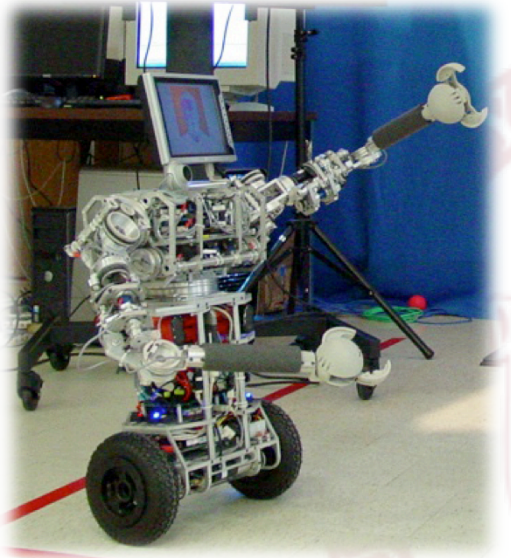
- Industry or Grad School?
- Is my resume in order? (career center)
- I should be planning to speak to recruiters!

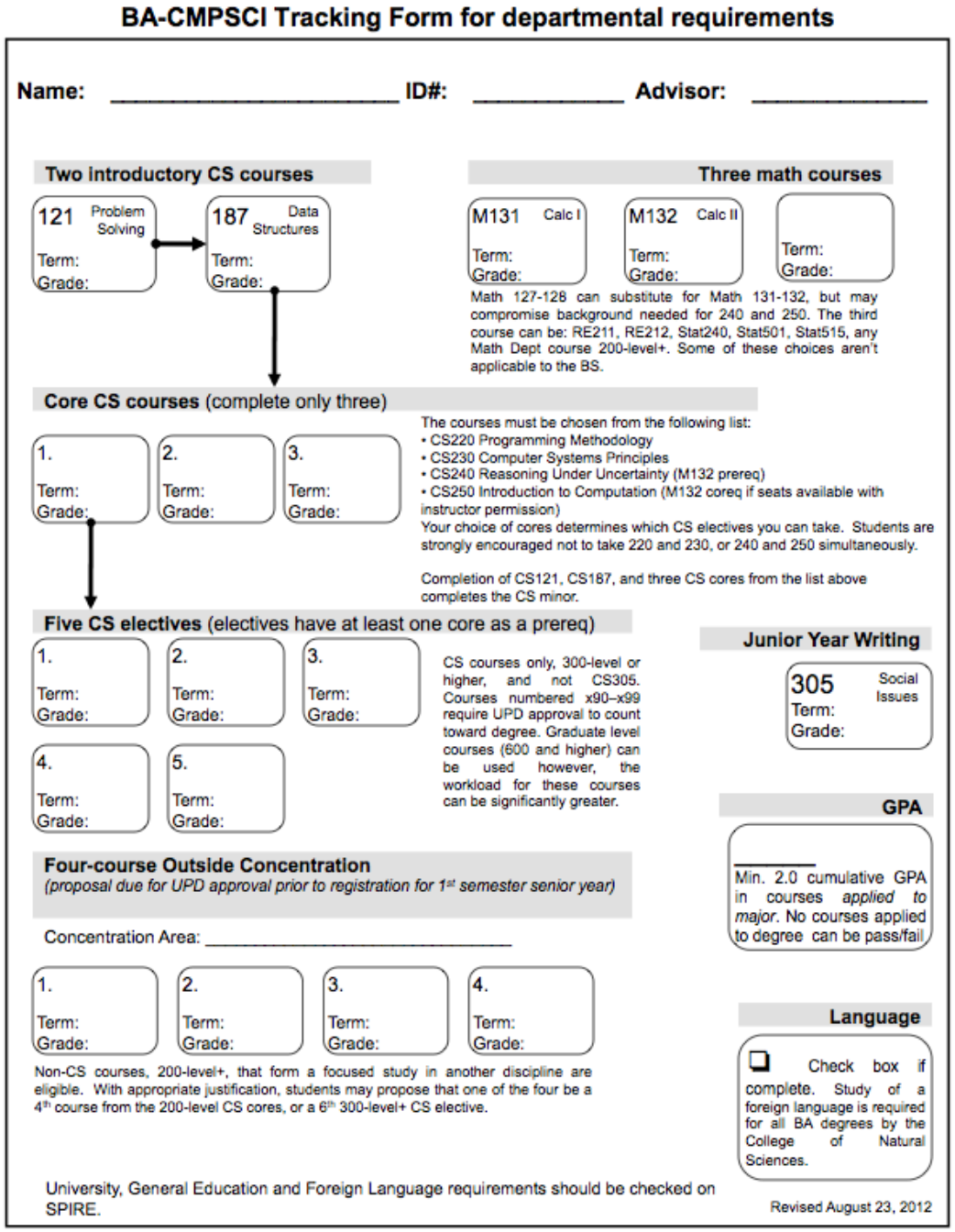
BS-CMPSCI Tracks

- General CMPSCI
- Artificial Intelligence
- Computer Architecture
- Networking
- Programming Languages & Compilers
- Theory of Computation



- Robotics, Vision, 7 Graphics
- Search & Data Mining
- Security & Privacy
- Software Engineering
- Software Systems





BA-CMPSCI Tracking Form for departmental requirements

Name: _____ **ID#:** _____ **Advisor:** _____

Two introductory CS courses

121 Problem Solving — Term: Grade:

→ 187 Data Structures — Term: Grade:

Three math courses

M131 Calc I — Term: Grade:

M132 Calc II — Term: Grade:

Term: Grade:

Math 127-128 can substitute for Math 131-132, but may compromise background needed for 240 and 250. The third course can be: RE211, RE212, Stat240, Stat501, Stat515, any Math Dept course 200-level+. Some of these choices aren't applicable to the BS.

Core CS courses (complete only three)

1. Term: Grade:
2. Term: Grade:
3. Term: Grade:

The courses must be chosen from the following list:
- CS220 Programming Methodology
- CS230 Computer Systems Principles
- CS240 Reasoning Under Uncertainty (M132 prereq)
- CS250 Introduction to Computation (M132 coreq if seats available with instructor permission)

Your choice of cores determines which CS electives you can take. Students are strongly encouraged not to take 220 and 230, or 240 and 250 simultaneously.

Completion of CS121, CS187, and three CS cores from the list above completes the CS minor.

Five CS electives (electives have at least one core as a prereq)

1. Term: Grade:
2. Term: Grade:
3. Term: Grade:
4. Term: Grade:
5. Term: Grade:

CS courses only, 300-level or higher, and not CS305. Courses numbered x90–x99 require UPD approval to count toward degree. Graduate level courses (600 and higher) can be used however, the workload for these courses can be significantly greater.

Junior Year Writing

305 Social Issues — Term: Grade:

GPA

_____

Min. 2.0 cumulative GPA in courses *applied to major*. No courses applied to degree can be pass/fail.

Four-course Outside Concentration

(proposal due for UPD approval prior to registration for 1st semester senior year)

Concentration Area: _____

1. Term: Grade:
2. Term: Grade:
3. Term: Grade:
4. Term: Grade:

Non-CS courses, 200-level+, that form a focused study in another discipline are eligible. With appropriate justification, students may propose that one of the four be a 4th course from the 200-level CS cores, or a 6th 300-level+ CS elective.

Language

❑ Check box if complete. Study of a foreign language is required for all BA degrees by the College of Natural Sciences.

University, General Education and Foreign Language requirements should be checked on SPIRE.

Revised August 23, 2012

Computer Science Bachelors of Arts

Differences

MATH 127/128 VS MATH 131/132

Required:
Concentration Plan by end of junior year (courses/statement of purpose)

Must Satisfy:
Foreign Language Requirement

ROCKs

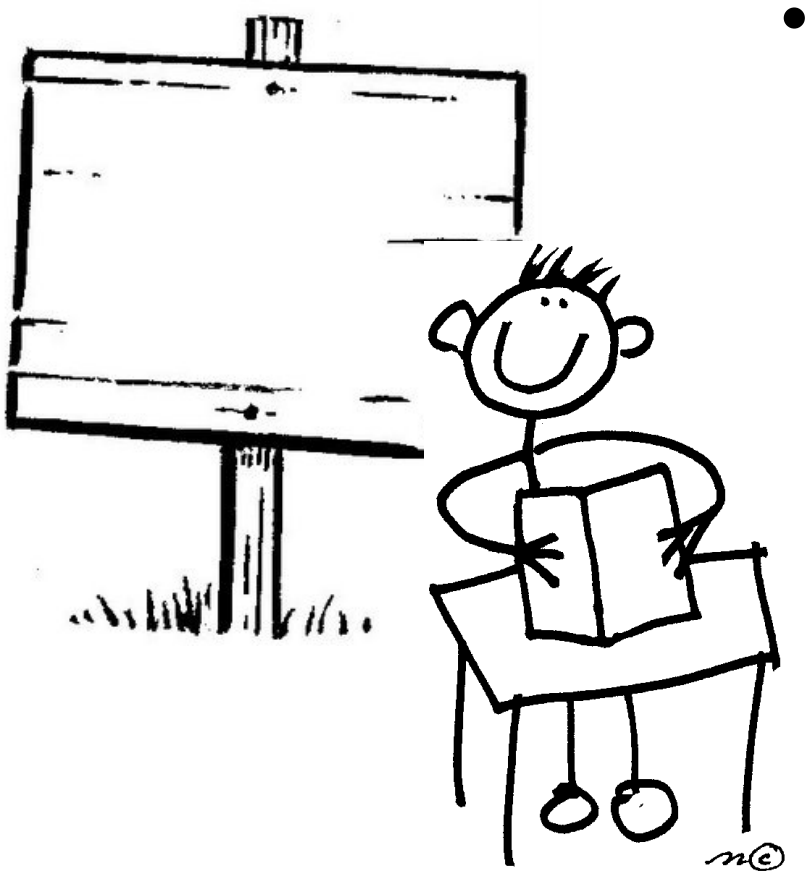
Leadership and Outreach Committee

- ROCKs Students…
  - are Juniors or Seniors in CS
  - have been successful in the CS program
  - serve as Student Ambassadors
  - are knowledgeable about the CS program
  - recruit new CS students
  - give tours
  - represent CS at university open houses and other outreach events
  - answer questions from prospective students

Main Office

ACE

Advising Center Committee



- ACE Students…
  - are Juniors or Seniors in CS
  - have been successful in the CS program
  - are knowledgeable about the CS program
  - are knowledgeable about CS courses
  - know how to navigate the program to ensure success as a CS student

Where can you find ACE?

USpace
Room 144
Computer Science Building

To be the **first point of contact** to first-year students, applicants to the major, and anyone interested in CS!

To be ***excellent*** peer advisors to the undergraduate CS population!

First Year Student Advising

- **Have a Freshman Advisor**
  - Gordon Anderson
  - froshadvising@cs.umass.edu

- **CS Peer Advisors**
  - ACE is the place!

- **Registration/Advising Meeting**
  Registration for Spring 2016
  Will be announced

Second Year Student Advising

- **Have a Sophomore Advisor**
  - Tim Richards
  - sophadvising@cs.umass.edu

- **CS Peer Advisors**
  - ACE is the place!

- **Registration/Advising Meeting**
  Registration for Spring 2016
  Will be announced

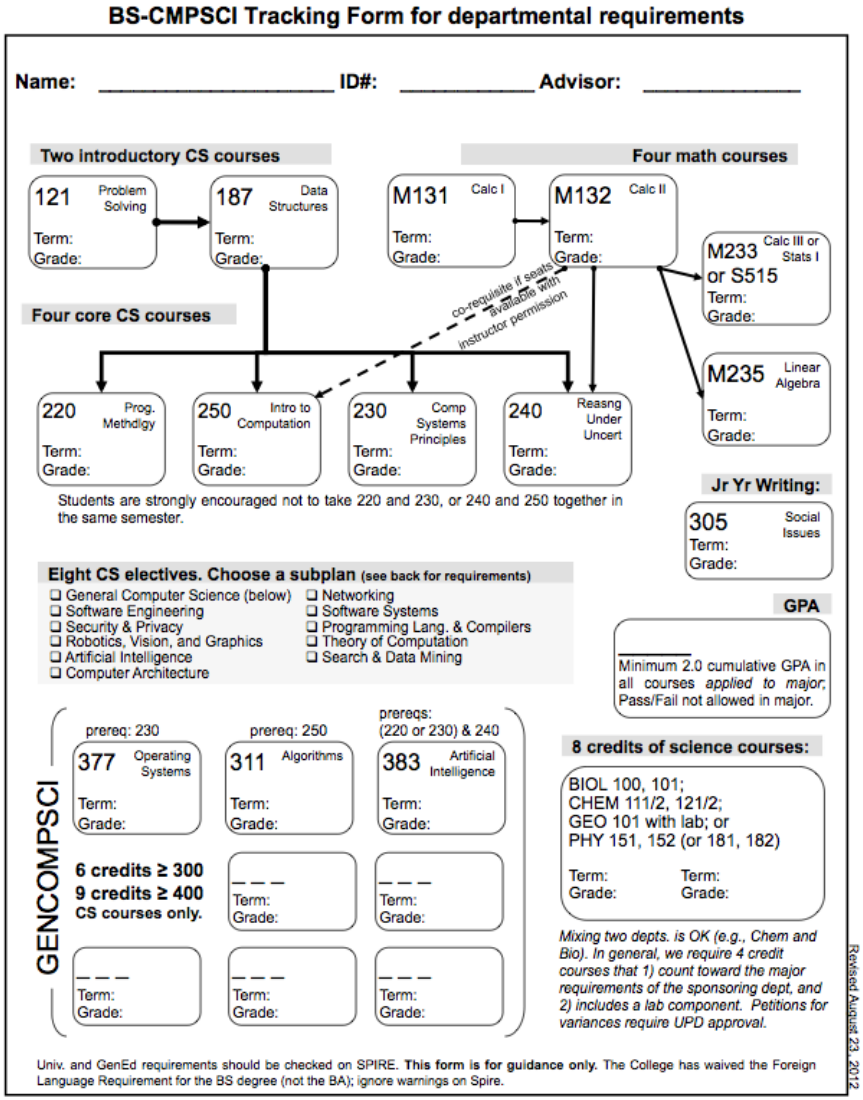
Post Grads & Transfers

- **Faculty Advisors**
  - Have been assigned to you
- **Advising Appointments**
  - Contact your advisor during registration period (they may contact you first, but don't assume)
  - Be prepared to discuss your course selection

Advising & Tracking Forms

- **You are responsible for your progress!**
- **Fill this out!**
- **Keep it updated!**
- **Bring it to Advising Meetings!**

It will help you and your advisor make good choices that will help ***lead you to success!***



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 math courses

M131 Calc I — Term: Grade:

M132 Calc II — Term: Grade:

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

M235 Linear Algebra — Term: Grade:

co-requisite if seats available with instructor permission

Four core CS courses

220 Prog. Methdlgy — Term: Grade:

250 Intro to Computation — Term: Grade:

230 Comp Systems Principles — Term: Grade:

240 Reasng Under Uncert — Term: Grade:

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

Jr Yr Writing:

305 Social Issues — Term: Grade:

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

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

GPA

_____

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

GENCOMPSCI

prereq: 230

377 Operating Systems — Term: Grade:

prereq: 250

311 Algorithms — Term: Grade:

prereqs: (220 or 230) & 240

383 Artificial Intelligence — Term: Grade:

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

_ _ _ Term: Grade:

_ _ _ Term: Grade:

_ _ _ Term: Grade:

_ _ _ Term: Grade:

_ _ _ Term: Grade:

8 credits of science courses:

BIOL 100, 101;
CHEM 111/2, 121/2;
GEO 101 with lab; or
PHY 151, 152 (or 181, 182)

Term: Grade: Term: Grade:

Mixing two depts. is OK (e.g., Chem and Bio). In general, we require 4 credit courses that 1) count toward the major requirements of the sponsoring dept, and 2) includes a lab component. Petitions for variances require UPD approval.

Revised August 23, 2012

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.

Advice & Strategies

- **Focus on Doing Well!**
  - Do not overload
- **Be Proactive**
  - Contact ACE or advisor
  - Update your tracking form
- **Do not rush your degree!**
  - It is enticing to finish early, but…
- **Get involved!**

Getting Involved!

- **ACM**
  http://umass.acm.org
- **UMass Programming Team**
- **CS Women**
- **USpace** (Room CS 144)
- **Leadership Committees**
  - ACE Peer Advising
  - ROCKs Recruiting & Outreach

Research Opportunities

- **Research Labs**
  - Lots of opportunity to participate!
  - Great for jobs and graduate school in CS!
- **Independent Studies**
  - Work individually with a faculty member
- **Honors Program** (https://www.honors.umass.edu)
  - Departmental honors / capstone experience
- **Paid Undergraduates**

Bay State Program

- **Tuition-Free Masters Degree**
  - Complete BS-CMPSCI degree
  - GPA at least 3.6
  - With Small Assistantship ($$)
- http://www.cs.umass.edu/admissions/bay-state-fellowship-program

Internship Opportunities

- **Where do CS students get internships?**
  - BBN/Ratheon, Cisco, EMC, Fiksu, Google, Yahoo!, TripAdvisor, Vistaprint, Amazon, Microsoft, LinkedIn, General Dynamics, …
- **How do they do this?**
  - Attending Career Fairs (several at UMass)
  - Solid Resume, **Start Sophomore Year**
  - UMass CareerConnect http://umass.experience.com/experience/login

Computer Science

Welcomes You!

Departmental Resources

FAQ

http://www.cs.umass.edu/ugrad-education/faq-bs-program

CS course schedules

http://www.cs.umass.edu/ugrad-education/courses

Tracking Forms:

Bachelor of Science:

http://www.cs.umass.edu/sites/default/files/uploads/BS-CMPSCI-tracking.pptx_.pdf

Bachelor of Arts:

http://www.cs.umass.edu/sites/default/files/uploads/BA-CMPSCI-tracking.pptx_.pdf

Transfer Procedures: (transfer admits and pre-approval for courses taken elsewhere)

https://www.cs.umass.edu/admissions/transfer-students

General Advising:

https://www.cs.umass.edu/ugrad-education/advising-and-advisors

https://www.cs.umass.edu/ugrad-education/registration-counseling

Advice on Proposing **BA** Concentrations (subject to UPD approval):

http://www.cs.umass.edu/ugrad-education/ba-degree-requirements

University Resources

Dean's Office (Academic Advising)

http://www.cns.umass.edu/students/academic-advising

Registrars Office:

http://www.umass.edu/registrar/

UMass Career Services - internships, resumes, job search

http://www.umass.edu/careers/

University Health Services - Mental Health Services

http://www.umass.edu/uhs/mentalhealth/

Academic Regulations

http://www.umass.edu/registrar/students/policies-and-practices/academic-regulations