Academic Orientation

Computer Science Majors

Friday, August 24, 2012

Advising Team

Dr. Mirela Damian (MSC 167A)

Dr. Frank Klassner (MSC 160C)
Jobs of the Advisor

- Consult for:
  - General insights into college life
  - Schedule planning
  - Internship ideas
  - Study abroad
  - Career planning
  - Summer opportunities

Advisor’s Role

- Help plan your courses for the next several semesters
- Help build the schedule for the next semester
- Approve registration for Villanova and for courses taken elsewhere
- Help modify schedules when necessary
- Give you a registration PIN when planning complete
Schedule Information

- Current semester: no advanced placement
  - Algorithms and Data Structures I (Java) [CSC 1051]
  - Calculus I [MAT 1500]
  - Core Humanities Seminar [ACS 1000]
  - Foreign Language
  - Humanities or Social Science [maybe PHI 1000]

More Schedule Information

- Advanced Placement
- Previous college credit
  - Courses at your high school
  - Courses at the nearby college
**Important Dates**

- Drop/Add deadline: Friday, August 31
- Labor Day: Monday, Sep 3 – no class
- Student Research Posters: Tuesday, Sep 20 (?)
- Fall break: Monday, Oct 15 – Friday, Oct 19
- Midterm grades: Wednesday, Oct 24
- WX deadline: Wednesday, Nov 14
- Thanksgiving break: no classes W-F, Nov 21 – 23
- Reading Day: Friday, Dec 14
  - Projects Day: Lunch and Posters
- Final exams: Sat, Dec 15 – Fri, Dec 21

**UIS**

Universal Information Source:
The fantastic, all-powerful, information rich
CS Department web site

csc.villanova.edu
Degree Requirements

- **Computer science**
  - 13 required courses
  - 3 elective courses
- **Mathematics**
  - 3 required courses (11 credit hours)
- **Science**
  - 8 credit hours of science (for science majors)
  - Total of 26 credit hours of math and science
- 12 humanities and social science courses
- 5 free electives

Value Added Courses

- Cognitive science
- Bioinformatics, computational molecular biology
- Summer Business Institute
- Minors such as mathematics, communication, English, business
- Study abroad
- Internship for academic credit
- BS/MS 5-year program
Opportunities

- **ViCS Program**
  - Enrichment Seminar (all are welcome)

- Scholarships
- Contests
- Research

- Paper or poster presentations at technical meetings
- Study abroad with internship: Rome and various Vatican offices
  - Creating [virtual tours](#)

Computing Community

- **ACM Student Chapter**
  - Monthly meetings
    - Industry presentations
  - Workshops
  - Social events (lose to faculty in volleyball)
Computing Community

- Competitions
  - MIT Battlecode programming competition
  - International Collegiate Programming Contest
  - Microsoft ImagineThat
  - Google Summer of Code
  - And more as they are announced

Computing Community (2)

- Upsilon Pi Epsilon
  - Computing honor society
  - Former national president is Villanova alumna

- National Center for Women in Information Technology (NCWIT)
  - Pacesetter University
Computing Community (3)

- Villanova Mac Users Group
- Service Projects
  - Computer recycling: TeamChildren
  - Julia de Burgos School
  - Programming workshops for the Girl Scouts
  - Program for Website Creation and Evaluation

Computing Community (4)

- **Spaces**
  - Department library (MSC 159)
  - Halls
  - Software Engineering lab (MSC 158)
  - Intelligent Systems lab (MSC 156)
  - CEET Center (St. Mary’s 21)
  - CS Help Desk
    - schedule posted at [csc.villanova.edu/support/cscHelpDesk](http://csc.villanova.edu/support/cscHelpDesk)
Introductions

- Meet your fellow majors:
  - Form a line ordered by birthday: all those born on the 1\textsuperscript{st}, regardless of month come 1\textsuperscript{st}, then those born on the 2\textsuperscript{nd}, etc.
  - Introduce yourself to the two people next to you (one on each side).

Working for the Department

- Work-study and regular
- Application form
- Hiring documents to complete I-9 form
  - Passport
  - Driver’s license AND social security card
Department Jobs

- Research assistance
  - Faculty research grants
- Web site maintenance and development
  - Department Web Team
- Lab support
- Office support: individual faculty members and department office

Research Topics (1)

- Languages for Lego Mindstorms
- Robot simulation tools. (Dr. Klassner)
Research Topics (2)

- Digital Libraries (Dr. Cassel)
  A large digital library project for computing education: syllabi, exercises, videos, projects, links to external resources.

- Computing ontology
  A complete definition of the computing disciplines, in collaboration with ACM

- Earlier and broader access to machine learning ideas
  Smarten your cell as you go

Research Topics (3)

- Algorithm taxonomy: examples from traditional games. (Dr. Levitin)
Research Topics (4)

- Web site taxonomy and focused design principles. The User Experience. (*Dr. Beck*)

Research Topics (5)

- Packing spheres into an ellipsoid: heuristic search strategies. (*Dr. Beck*)
Research Topics (6)

- Code optimization: 20Kb vs. 20Mb program space. *(Dr. Way)*

Research Topics (7)

- Virtual reality in interdisciplinary projects. *(Dr. Klassner)*
Research Topics (8)

- Web services: development, description, deployment.  
  \textit{(Dr. Way)}

Research Topics (9)

- Constructing and maintaining wireless network topologies.  \textit{(Dr. Damian)}
Research Topics (10)

- Folding and unfolding polyhedra. (*Dr. Damian*)

Research Topics (11)

- Programming games and applications for the iPad, iPhone, and iPod Touch. (*Dr. Klassner*)
Will Rogers says

“I believe in college since it gets young people out of the house just at the time when they start asking difficult questions.”

Keys to Success

- Talk to your instructors, 1+ times a week
- Talk to your advisors
- Study with your peers
- Become involved in the computing community—ACM student chapter
- Exhibit responsibility
- Manage time wisely: at least 40 hours study time per week
More Keys

- Come to class every time
- Read before class
- Endorse student-centered learning and active class participation
- Start assignments early

Exercises

- By Friday (August 31) visit each member of your advising team
  - Introduce yourself
  - Describe your high school
  - Relate your summer activities
- By Friday (August 31) check that your Wildcard opens MSC 156 and MSC 158
- By Thursday (August 30) review the slides from today and follow the links
Things to Remember

- The 7 fastest growing occupations are in the field of computing
- Computer scientists are needed as leaders in virtually all other fields
- Computing on small devices is a driving force in the growth of computing

Things to Remember

- Mobile computing encompasses challenges for programming and design
- Knowledge and skills gained by studying computer science can lead anywhere