Welcome to Applied Mathematics and Statistics (AMS) 
at the University of California, Santa Cruz (UCSC)!

You are here to do some serious applied mathematics and statistics. You are here to learn. You are also here to have fun!

**Balance** is the key to a successful grad student life. Work steadily. Play too.

Grad school is a journey of learning – about math and about yourself. Know where you are at; enjoy the journey; never be satisfied.

It’s a different type of learning though. Knowledge is thrown up in the air. It’s up to you to catch it before it falls.

**Sources of inspiration:**

**The Faculty:**

- Not nearly as nasty as they look. Don’t be afraid to approach – they only bite occasionally. No one has been mutilated in, oh, at least 5 years.
- Plus, we were all grad students once (in the early middle ages).

**Your fellow grad students:** They are probably the most knowledgeable people about:

- how the system works (requirements, visas, keys, labs, computers – someone has always done it before!)
- academics (how to beat the first year exam, what to expect in the AMS 299f final, …)
- life (which pizza is edible and how to get it delivered to SOE at 2am, housing, parties, fun)

**Me:** I am the grad director and I am on your side! (brummell@soe.ucsc.edu, BE 125, 9-2122)

**Honyung Wang:** will be the new grad director starting in the winter (hongwang@soe.ucsc.edu, BE 153C, 9-5653)
Tracie Tucker: she is the grad advisor and she knows everything!
(ttucker@soe.ucsc.edu, E2-298J, 9-5737)
Applied Mathematics and Statistics:

What is AMS? Where does it fit in to the school? Division?
## Graduate Student Timeline

<table>
<thead>
<tr>
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<th>Masters</th>
<th>PhD</th>
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<tbody>
<tr>
<td><strong>Academic Year 1</strong></td>
<td>○ 6 x 5 unit core courses (Stats core or AM core: see below)</td>
<td>○ 3 unit course on Research and Teaching (AMS200)</td>
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<td></td>
<td>○ Seminar series – AMS 280B (at least 1 qtr per year)</td>
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<td></td>
<td>○ Start chatting to faculty, getting to know them and their research</td>
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<td>specialities and start trying to figure out what you are interested in.</td>
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<td></td>
<td>○ Max out the rest of your available units with seminar courses and</td>
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<td>independent study time with faculty members</td>
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<td></td>
<td>○ <strong>End of academic year 1: First Year Exam:</strong></td>
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<td></td>
<td>○ Exam on all your core courses</td>
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<td></td>
<td>○ Can possibly retake at end of summer <em>(DON’T DO THIS!)</em></td>
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<tr>
<td><strong>Academic Year 2</strong></td>
<td>○ Propose Capstone Project at start of AY2 (to a faculty sponsor)</td>
<td>○ 4 x 5 unit elective courses</td>
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<td>○ 2 x 5 unit elective courses</td>
<td>○ Choose thesis advisor by end of AY2</td>
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<td>○ Can possibly substitute up to 2 courses for research work</td>
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<td></td>
<td>○ Submit <strong>Capstone Project</strong> before end of AY2 (committee of sponsor+1)</td>
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<tr>
<td><strong>Academic Year 3</strong></td>
<td>○ <strong>Advance to candidacy</strong> by end of Spring AY3 – oral thesis proposal</td>
<td>○ <strong>Oral thesis defence</strong> (submit @ t-1month; committee of advisor+2 or more; public+private oral exam)</td>
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<td>defence (submit @ t-1month; committee of advisor+3; public+private oral exam)</td>
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<td><strong>Later …</strong></td>
<td>(shockingly up to 7 years after A2C)</td>
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<tr>
<td></td>
<td>○ <strong>Oral thesis defence</strong> (submit @ t-1month; committee of advisor+2 or more; public+private oral exam)</td>
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### Core courses

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<tr>
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<th>Statistics</th>
<th>Applied Mathematics</th>
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<tr>
<td>Fall</td>
<td>200 Research &amp; Teaching</td>
<td>200 Research &amp; Teaching</td>
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<td></td>
<td>211 Fundamentals of Applied Mathematics</td>
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<td>205 Mathematical Statistics</td>
<td>205 Mathematical Statistics</td>
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<td>Winter</td>
<td>206 Bayesian Statistics</td>
<td>212A Mathematical Methods 1 (PDEs)</td>
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<td>256 Linear Statistical Models</td>
<td>214 Dyn Sys</td>
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<tr>
<td>Spring</td>
<td>207 Intermediate Bayesian Modelling</td>
<td>212B Mathematical Methods II (Perturbation and asymptotic methods)</td>
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<td>213 Numerical solns of differential equations</td>
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**Other requirements:**

- Must TA for at least 2 quarters
- Seminars (AMS280B) are in the Simularium (E2-180) at 4pm on Mondays
- First 3 weeks of seminars = faculty research introductions. Good start to getting to know the faculty.
- Independent study and electives can be added at any time

**Notes:**

- PhD students can receive MS after completion of AY1,2 if they write up a Capstone Project (can be compiled from the advancement work)
- Can change: MS can continue on to PhD, PhD can exit with MS.
Other useful information

- **Things you need to do immediately:**
  - Keys
  - Offices
  - Advisors
  - Email: ucsd.edu & soe.ucsd.edu
    - SOE recommended mail program: Thunderbird using IMAP
    - Server (in and out/SMTP): zimbra.soee.ucsd.edu
    - Using security: SSL (ports 993 in, 465 out)

  Information should be in the packet Tracie gave you for most of this.

- **Advisors:** You have one for now – an assigned Faculty Advisor. You will end up with another one – a Research Advisor – that you choose when you figure out what research you want to do. Again, you can change if you need to.

- **Rooms:** There are 6 grad labs: BE rooms 142, 144, 146, 160, 350C/D, 308. See attached for your room assignment. Tracie will give you forms and instructions for keys to our room and the building etc.

- **Lots of essential information at:**
  - http://www.ams.ucsd.edu
  - http://www.soe.ucsd.edu/advising/graduate/new-grads
  - http://www.soe.ucsd.edu/advising/graduate

- **Other web resources you will need:**
  - http://my.ucsd.edu
  - http://ic.ucsc.edu/webct
  - Mailing lists: amsgrads@soe.ucsd.edu -- good information (fellowships, deadline reminders, etc)

- **Mail:**
  - Your mail address here is
    - Name
    - SOEGRAD
    - University of California Santa Cruz
    - 1156 High Street
    - Santa Cruz
    - 95064
  - Mail sent to you is available in room BE 312B

- **Desktop computers:** If there is a computer on your desk, it is probably a piece of garbage. It may work, but is likely very slow, works best as a paperweight, but can be used to connect to other faster SOE machines. We are trying to fix this problem. There are also SOE computer labs on the 3rd floor (BE 316) that have better machines that you have access to. Other alternatives:
- Use your laptop if you have one with the wireless – cruznet or soe or soe-nat (or Ethernet in the wall if activated) [request via your advisor]
- Get working with a member of the faculty and get them to buy you a decent machine!

- **Other computing:**
  - We have an AMS cluster – grape.cse.ucsc.edu – which is actually 6 eight-core machines for you to compute on. Rocks cluster (related to RedHat Linux).
  - Lots of information at:
    - [http://support.soe.ucsc.edu](http://support.soe.ucsc.edu)
    - In particular: [http://support.soe.ucsc.edu/servers](http://support.soe.ucsc.edu/servers)
  - Free MicroSoft OS and other software (not Office) through the School.
  - Grad student storage: 1Gbyte including email. Can be extended.
  - Just fill in “Terms of Agreement” form.
  - Help is available on all SOE computing services from the help desk **BE 311**, tel 9-3544, or by email from **ithelp@ucsc.edu**

- **Financial stuff:** If you are getting money, then you will be getting it through a TAship, a GSR or a Fellowship. Tracie Tucker is in charge of the details of how all this is taken care of. Some things to remember:
  - If your offer letter offered you one year of guaranteed financial assistance, AMS will support you through all your years here (somehow). We will endeavour to get all our students as much support as possible.
  - Each quarter you need to **apply** for a TAship before the beginning of the quarter, if you want one (must sign up for payroll too if you want to get paid!). There are deadlines!
  - All financial sources offer about the same amount of pay (fees and tuition paid, plus about $5.8k of stipend). Some avenues are more work than others!
  - You need to get on the good side of a faculty member if you want a GSR. Get talking!
  - International students: work hard and advance to candidacy ASAP!

- **Social stuff:**
  - Grad seminar: Fri afternoons 3:30-4:30 E2-399
  - BnC -- 9:30am Fridays (during qrtr) in BE137 (or 4:30 fri afternoons)
  - Soccer – 3:30pm Sunday afternoons (see Thanasis)
  - 99% of the faculty goes climbing at Pacific Edge
  - And the wonders of Santa Cruz = surfing, biking, mtn biking, beaches, hiking in the redwoods, burritos, margaritas, Big Sur, Arroyo Secco, SF, the Catalyst, …
Homework assignments:

1. **Webpage**: Make a personal webpage for yourself. Put an “index.html” file in the directory .html in your home directory. You can be as fancy or as basic as you like.

2. **Fellowships**: Examine and start collecting the relevant materials for the Fellowships posted on the course webpage. Show me the money!