Undergraduate Report

Buster Dunsmore

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Summer 2015 Bridge Class

- 2015 Bridge Class was sponsored by the Harris Corporation

- 63 students (52 men and 11 women)

- We have found that students who are comfortable in the first CS course and who do well in it
  - usually do well in all their other CS courses
  - usually get the Computer Science degree

- We started the Bridge Program to try to make sure that anyone who wants to can be in the best position to do well in her/his first course

Summer 2015 Bridge Class

- Bridge participants this year came from 14 different states and 4 different countries

- California, Colorado, Illinois, Indiana, Kentucky, Massachusetts, Michigan, Missouri, North Carolina, New Hampshire, New Jersey, Nevada, Ohio, Oregon

- China, India, Indonesia, United States

- Best addition to Bridge Class this year was Administrator of Undergraduate Programs and Services and new Bridge Class Coordinator, Scott Nelson

Summer 2015 Bridge Results So Far

56/63 took CS 18000 in Fall 2015

7/63 took CS 17700 in Fall 2015

CS 18000 Grades of the 56:

  1 A+

20 A

  3 A-

10 B

  2 B-

  2 C+

  8 C

  5 D

  2 D+

  3 F

46/56 = 82% had a grade of C or better and have continued into CS 18200 and CS 24000 this semester

Summer 2015 Bridge Results So Far

The 10 students with grades below C:

3 are retaking CS 18000 and are on target for a C or better this time

3 are retaking CS 18000, but are not on target for a C or better this time

We appear to have lost 4 students

The 7 students who took CS 17700 in Fall 2015 are all in CS 18000 this semester

5 are on target for a C or better

2 are not on target for a C or better

One of our 2015 Bridge students took CS 18000 in Fall 2015 and was chosen as a Spring 2016 CS 18000 TA

4 Bridge students have applied for and are receiving scholarships tonight

Summer 2016 Bridge Class

- Goal is 73 students
- That is all the lab seats we have
- We plan to increase the percentage of women in Bridge 2016

- Students will find out about Bridge 2016 via mailings and presentations each day in STAR (Summer Transition Advising and Registration) and from our advisors

- Students will apply and we will once again select those most appropriate

Bridge Class Success Story

- In our first Bridge Class in Summer 2013 there was a young woman who seemed concerned about how she would be able to do in our program

- She was very quiet and not at all self-confident

- But, she did well in the Bridge Class and has continued to excel

- She was a TA for the next year's Bridge Class in 2014

Bridge Class Success Story

- This semester's Software Engineering project Sprint Reviews last Friday

- Presentation from team consisting of six students

- They chose her as their team leader at the beginning of the semester

- She was clearly in charge and knowledgeable about every aspect of their project

- She could answer every one of my questions or point to the team member who could

- Her team obviously respected her and deferred to her on several questions

- I have no doubt that she will have an outstanding career as a software engineer

CS 18000 Fall 2016

- In the spirit of the Gold and Black Computer Science Courses at Harvey Mudd College...

- We will have Gold and Black sections of CS 18000 in Fall 2016

- Gold -- assumes absolutely no programming background, class section taught by Prof. Prabhakar, their own lab sections

- Black -- assumes some familiarity with programming, class section taught by Prof. Dunsmore, their own lab sections

CS 18000 Fall 2016

- The two sections will have identical final outcomes that are the same as CS 18000 outcomes in the past

- The only difference is the level of prior programming knowledge with which the students start the course

- Students will self-select after meeting with their advisor during STAR

- Our primary motivation behind this effort is to increase retention

CS 18000 Fall 2016

- We want to ensure that students with the ability to do well in Computer Science do so even if they have not programmed before

- We want to keep the inexperienced students in CS 18000 from being intimidated by students with a lot more experience than they have

- Vitally important that the messaging on these two sections is given clearly to all students and staff

- If the message somehow is that there is a "remedial" or "weaker" section, then we will have failed

CS 18000 Fall 2016

- Each lecture section will cover the same material each week

- The Gold section will be our standard CS 18000 lecture

- The Black section will receive the standard material plus some enrichment and enhancement material at the beginning of the semester

- About half way through the semester, there will likely be little difference in the lectures

CS 18000 Fall 2016

- Experience with the Bridge Class is very useful here

- I teach the Bridge students using a subset of the same slides I use in teaching CS 18000

- The difference is in how I teach the material and the fact that the Bridge students are together with students with similar experience, similar understanding, and similar questions

- Quite likely that all labs, projects, and exams will be identical for both sections

Research Survey

- Research project concerning what kind of graduates our Corporate Partners are looking for when they hire new employees

- Pat Morgan sent a request to each Corporate Partner representative

- Survey prepared by Zhen Chen <chen1725@purdue.edu>, an undergraduate CS student

- Working with me on a research project concerning what kind of graduates you are looking for when you hire new employees

Research Survey

- Questions about…
- What kind of technical skills you are looking for
- Level of importance you assign to:
  - internship experience
  - in-class projects (projects students do as part of their university classes)
  - personal projects (not part of their university classes)
  - whether a candidate has a personal portfolio of the work he/she has done
  - whether a candidate has participated in hackathons
  - GPA

Cooperative Education Program

- Department of Computer Science participates in the Cooperative Education Program

- Because internships and summer jobs are widely available and the Co-op program delays graduation, few of our students do this

- Old program required students to complete five work sessions

- Our department has approved a three work session program to attract more students