

# Department of Mathematics and Computer Science

## Annual Review and Report

### Spring 2012

**Progress with Departmental Planning and Review:** *describing progress toward its goals, problems reaching its goals, revision of goals, and initiatives. Record significant events which have occurred or are imminent, such as changes to resources, retirements, new hires, curricular changes, honors received, etc. Approx one page.*

#### **Mathematics Plan**

- New faculty hire: Position requested for a search in 2012-2013
- Unify department; no change in offices, no progress
- Improve student experience: still lacking Math Lab, no progress in implementing Exit Survey
- More support for faculty: were able to afford a few graders and some travel; need more
- Better student preparedness: individual instructors working on enforcing prerequisites

#### **Mathematics Changes**

- Two faculty on leave without pay (Veomett and Glass). Not likely that either will return
- Faculty retiring: Jurca
- Improve student experience: still lacking Math Lab, no progress in implementing Exit Survey (have discussed with administration; am looking for integrated survey though PeopleSoft or other Records/Administrative software).

#### **Mathematics Further Achievements**

- Foundational Math certificate in the approval process; implementation begun
- One year no cost extension of Noyce Grant; support for 11 new math/science teachers 2012-13. Completed third and final year of ATEAM ( professional development for teachers grades 3-7 in Antioch) project
- Will offer 58 Math Achievement Academies summer 2012, for students entering Algebra I, Geometry, or Algebra II, in many East Bay cities.
- Creation of one of the first official Centers at CSUEB: Center for Math Education and Research, run jointly by Julia Olkin of MCS and Phil Duren of TED
- Future Math and Science Teacher-Scholars Program (FMSTSP) to provide opportunities to explore science and mathematics education at the K-12 levels. Open to all current STEM majors

#### **Computer Science Plan**

- New faculty hire: no progress
- Better student experience: Intro CS Lab course will be implemented 2012-13
- More graders and travel money: a few graders were supported
- Departmental Leadership: C. Matthew Johnson has agreed to be the new Chair
- Improved relations with ITS: still would like more decentralization; need more local support
- Better student preparedness: individual instructors working on enforcing prerequisites
- CS Networks program: enrollment stable and perhaps increasing

#### **Computer Science Changes**

- Two faculty will retire and FERP (Reiter, Daley)

- New courses implemented: Intro CS in Python, Parallel Computing
- New courses proposed: Cloud Computing, Network Security Management, Intro CS Lab
- Equipment upgrades for teaching and student use in NS 336 (finished) and NS 148 (In progress)

### **Computer Science Other Achievements**

- Math & Computer Science Career Panel, Jan. 26, 2012
- Meeting of C.S. Advisory Board, May 4, 2012
- New courses proposed: Cloud Computing, Network Security Management, Intro CS Lab

### **Assessment:**

**Mathematics M.S. Student exit achievement:** In Fall 2011, 32 students took M.S. Comprehensive exams, for a total of 58 exams (there are up to 4 exams that each student must pass). Of those 58 exams, 32 exams were passed, and 26 exams were failed (similar to other quarters). 8 students completed their exam requirements, having passed all four exams by Fall 2011.

Probability Comprehensive: High rate for students passing

Numerical Analysis Comprehensive: Low pass rate; Faculty who teach numerical analysis have been implementing strategies to improve student learning of this subject.

**Computer Science M.S. Student exit achievement:** There are three Capstone exams in total: Operating Systems, Data Structures, and Theory. Each exam is worth 40 points, with a combined score of 72 (60%) necessary to pass (students with a passing score or who cannot achieve the passing benchmark after two exams are not required to take the third exam). In Fall 2011, 35 students attempted the Capstone exams. The mean scores were 25.3 (63%) in Operating Systems, 23.4 (58.5%) in Data Structures, and 23.07 (57.6%) in Theory. The pass rate was 65.7%.

The results in all three area exams were slightly below expectation. The CS Graduate Committee is examining new ways of administering the course.

**Other Assessment:** The Department continues to:

Partial final common exam for Math 1130 (often taken for the G.E. requirement)

Monitor outcomes in Gateway courses (both in Math and C.S.)

**Assessment in the Future:** The Department feels that it lacks the expertise (and the time) for properly improving the assessment process. CAPR has told the Department that support and expertise will be available; we look forward to this.:

**Departmental APR Data**

**California State University, East Bay**

**APR Summary Data**

**Fall 2006 - 2010**

<b>Math &amp; Computer Science</b>					
	<b>Fall Quarter</b>				
	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
<b>A. Students Headcount</b>					
1. Undergraduate	369	329	350	351	342
2. Postbaccalaureate	26	13	13	21	11
3. Graduate	181	198	237	290	298
4. Total Number of Majors	576	540	600	662	651
	<b>College Years</b>				
	<b>05-06</b>	<b>06-07</b>	<b>07-08</b>	<b>08-09</b>	<b>09-10</b>
<b>B. Degrees Awarded</b>					
1. Undergraduate	124	98	89	57	56
2. Graduate	108	99	74	50	83
3. Total	232	197	163	107	139
	<b>Fall Quarter</b>				
	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
<b>C. Faculty</b>					
<b>Tenured/Track Headcount</b>	Computer Science and Mathematics Combined				
1. Full-Time	28	28	28	28	25
2. Part-Time	4	3	3	3	4
3a. Total Tenure Track	32	31	31	31	29
3b. % Tenure Track	64.0%	68.9%	57.4%	57.4%	80.6%
<b>Lecturer Headcount</b>	Computer Science and Mathematics Combined				
4. Full-Time	3	2	3	3	1
5. Part-Time	15	12	20	20	6
6a. Total Non-Tenure Track	18	14	23	23	7
6b. % Non-Tenure Track	36.0%	31.1%	42.6%	42.6%	19.4%
7. Grand Total All Faculty	50	45	54	54	36
<b>Instructional FTE Faculty (FTEF)</b>	Computer Science and Mathematics Combined				
8. Tenured/Track FTEF	20.1	21.0	22.2	19.5	22.4
9. Lecturer FTEF	17.8	17.9	20.1	21.5	11.1
10. Total Instructional FTEF	37.9	38.9	42.3	41.0	33.5
<b>Lecturer Teaching</b>	Computer Science and Mathematics Combined				
11a. FTES Taught by Tenure/Track	263.9	301.3	336.5	372.5	439.1
11b. % of FTES Taught by Tenure/Track	34.3%	39.3%	37.4%	37.8%	58.7%
12a. FTES Taught by Lecturer	504.5	465.7	564.3	612.5	308.5
12b. % of FTES Taught by Lecturer	65.7%	60.7%	62.6%	62.2%	41.3%
13. Total FTES taught	768.4	767.1	900.7	985.0	747.7
14. Total SCU taught	11526.0	11506.0	13511.0	14775.0	11215.0
<b>D. Student Faculty Ratios</b>	Computer Science and Mathematics Combined				
1. Tenured/Track	13.1	14.4	15.2	19.1	19.6
2. Lecturer	28.4	26.1	28.1	28.5	27.9
3. SFR By Level (All Faculty)	20.3	19.7	21.3	24.0	22.3

4. Lower Division	27.5	25.4	26.3	28.1	26.9
5. Upper Division	13.4	12.6	14.4	18.9	16.9
6. Graduate	9.0	10.7	11.5	15.0	14.7
<b>E. Section Size</b>					
1. Number of Sections Offered	130.0	134.1	154.0	151.0	113.7
2. Average Section Size	23.2	23.6	23.1	25.8	26.1
3. Average Section Size for LD	28.7	29.2	27.3	29.4	30.5
4. Average Section Size for UD	17.0	14.4	15.9	20.9	20.8
5. Average Section Size for GD	12.4	16.6	14.6	17.2	17.5
6. LD Section taught by Tenured/Track	14	18	21	19	28
7. UD Section taught by Tenured/Track	29	37	34	30	25
8. GD Section taught by Tenured/Track	17	20	20	19	21
9. LD Section taught by Lecturer	60	57	74	73	36
10. UD Section taught by Lecturer	8	6	5	8	3
11. GD Section taught by Lecturer	3	1	2	4	2

Source and definitions available at: <http://www.csueastbay.edu/ira/apr/summary/definitions.pdf>

<b>Fall Quarter</b>					
<b>Headcount Enrollment</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
<b>Computer Science</b>					
1. Undergraduate	282	255	266	281	260
2. Postbaccalaureate	17	10	12	19	8
3. Graduate	120	128	179	183	184
4. Total Number of Majors	419	393	457	483	452
<b>Computer Networks (new program 2008)</b>					
1. Undergraduate	0	0	0	0	0
2. Postbaccalaureate	0	0	0	0	0
3. Graduate	0	0	1	23	35
4. Total Number of Majors	0	0	1	23	35
<b>Math</b>					
1. Undergraduate	87	74	84	70	82
2. Postbaccalaureate	9	3	1	2	3
3. Graduate	61	70	57	84	79
4. Total Number of Majors	157	147	142	156	164
<b>College Years</b>					
<b>Degrees Awarded</b>	<b>05-06</b>	<b>06-07</b>	<b>07-08</b>	<b>08-09</b>	<b>09-10</b>
<b>Computer Science</b>					
1. Undergraduate	96	75	67	42	41
2. Graduate	91	87	48	38	62
3. Total Number of Majors	187	162	115	80	103
<b>Computer Network</b>					
1. Undergraduate	0	0	0	0	0
2. Graduate	0	0	0	0	5
3. Total Number of Majors	0	0	0	0	5
<b>Math</b>					
1. Undergraduate	28	23	22	15	15

2. Graduate	17	12	26	12	16
3. Total Number of Majors	45	35	48	27	31

<b>D. Student Faculty Ratios</b>	Computer Science				
1. Tenured/Track	11.8	12.6	13.5	17.8	16.8
2. Lecturer	23.4	23.0	23.4	22.3	26.4
3. SFR By Level (All Faculty)	13.0	13.5	14.8	18.8	17.5
4. Lower Division	20.5	20.8	19.6	26.7	24.6
5. Upper Division	13.2	13.8	14.5	18.0	17.0
6. Graduate	8.9	10.7	12.9	16.6	15.9
<b>E. Section Size</b>					
1. Number of Sections Offered	47.0	45.8	50.1	47.0	39.7
2. SCU taught	2843.0	2493.0	3048.0	3505.0	3016.0
3. Average Section Size	16.3	16.4	16.7	20.6	21.1
4. Average Section Size for LD	26.8	24.2	25.6	31.0	33.5
5. Average Section Size for UD	16.2	14.5	15.0	19.2	20.2
6. Average Section Size for GD	11.6	16.6	15.3	18.3	18.7
7. LD Section taught by Tenured/Track	5	4	5	4	4
8. UD Section taught by Tenured/Track	21	21	23	19	18
9. GD Section taught by Tenured/Track	13	17	17	13	16
10. LD Section taught by Lecturer	1	1	2	2	0
11. UD Section taught by Lecturer	4	3	3	6	1
12. GD Section taught by Lecturer	3	0	2	4	2
<b>D. Student Faculty Ratios</b>	Math				
1. Tenured/Track	15.6	16.4	17.0	20.4	22.1
2. Lecturer	28.9	26.3	28.6	29.4	28.0
3. SFR By Level (All Faculty)	24.9	22.7	24.4	26.3	24.9
4. Lower Division	28.3	25.7	27.0	28.2	27.1
5. Upper Division	13.7	11.0	14.2	20.4	16.9
6. Graduate	9.4	10.7	5.8	10.1	8.6
<b>E. Section Size</b>					
1. Number of Sections Offered	83.0	88.3	103.9	104.0	74.0
2. SCU taught	8683.0	9013.0	10463.0	11270.0	8199.0
3. Average Section Size	27.0	26.9	25.9	28.0	28.5
4. Average Section Size for LD	28.8	29.6	27.4	29.3	30.4
5. Average Section Size for UD	18.8	14.3	17.8	24.0	22.0
6. Average Section Size for GD	15.7	16.5	9.5	13.3	11.3
7. LD Section taught by Tenured/Track	9	14	16	15	24
8. UD Section taught by Tenured/Track	8	16	11	11	7
9. GD Section taught by Tenured/Track	4	3	3	6	5
10. LD Section taught by Lecturer	59	56	72	71	36
11. UD Section taught by Lecturer	4	3	2	2	2
12. GD Section taught by Lecturer	0	1	0	0	0