

**SJSU Annual Program Assessment Form
Academic Year 2014-2015**

Department: Meteorology & Climate Science

Program: **MS Meteorology**

College: Science

Website: www.sjsu.edu/meteorology

Check here if your website addresses the University Learning Goals.

www.sjsu.edu/meteorology/undergraduates/assessment/index.html

Program Accreditation (if any): None

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Date of Report: 5/28/15

Part A

1. List of Program Learning Outcomes (PLOs)

No changes since last year.

2. Map of PLOs to University Learning Goals (ULGs)

No changes since last year.

3. Alignment – Matrix of PLOs to Courses

No changes since last year.

4. Planning – Assessment Schedule

No changes since last year.

5. Student Experience

No changes since last year.

Part B

6. Graduation Rates for Total, Non URM and URM students (per program and degree)

	First-Time Freshmen				Undergraduate Transfer				New Credential				First-Time Graduate			
	Fall 2008 Cohort: 6-Year Graduation Rate				Fall 2011 Cohort: 3-Year Graduation Rate				Fall 2011 Cohort: 3-Year Graduation Rate				Fall 2011 Cohort: 3-Year Graduation Rate			
	Program Cohort Size	Program Grad Rate	College Average Grad Rate - All Students Who Entered This College	University Average Grad Rate - All Students Who Entered the University	Program Cohort Size	Program Grad Rate	College Average Grad Rate - All Students Who Entered This College	University Average Grad Rate - All Students Who Entered the University	Program Cohort Size	Program Grad Rate	College Average Grad Rate - All Students Who Entered This College	University Average Grad Rate - All Students Who Entered the University	Program Cohort Size	Program Grad Rate	College Average Grad Rate - All Students Who Entered This College	University Average Grad Rate - All Students Who Entered the University
Total	10	40.0%	45.0%	49.7%	5	40.0%	47.4%	55.3%	0	/0	/0	8.3%	8	0.0%	27.6%	60.8%
URM	3	0.0%	26.5%	40.7%	1	100.0%	47.6%	55.2%	0	/0	/0	12.2%	2	0.0%	10.0%	65.2%
Non-URM	6	50.0%	49.1%	53.3%	4	25.0%	39.2%	54.9%	0	/0	/0	8.0%	5	0.0%	19.8%	54.2%

All others	1	100.0%	52.8%	52.9%	0	/0	64.9%	56.9%	0	/0	/0	4.9%	1	0.0%	50.0%	69.4%
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7. Headcounts of program majors and new students (per program and degree)

Item 7. Headcount of Program Majors by Degree: Meteorology

Fall 2014					
	New Students		Continuing Students		Total
	FT Admit	New Transf	Continuing	Retn. Tranf	
Total	6	5	43	1	55
BS	3	5	32	1	41
MS	3		11		14

We have resurrected the practice of contacting ALL HS students in ALL surrounding states who showed an interest in meteorology, climate, or physics during their SAT tests. We contacted each student with a letter and a brochure. This effort is designed to increase our freshman pool of applicants, and our enrollments. We shall see if it works!

8. SFR and average section size (per program)

Fall 2014			
	Subject SFR	College SFR	University SFR
Lower Division	37.0	35.1	31.0
Upper Division	26.7	22.5	25.5
Graduate Division	5.5	9.6	20.8

	Subject Headcount per Section
Lower Division	38
Upper Division	26
Graduate Division	2

In terms of SFR, we remain one of the higher SFR departments in the college. Our undergraduate SFRs > college SFRs. This was one reason we were given permission to hire new faculty.

9. Percentage of tenured/tenure-track instructional faculty (per department)

Item 9. Percentage of Full-Time Equivalent Faculty (FTEF): Meteorology

	Fall 2014			
	Department FTEF #	Department FTEF %	College FTEF %	University FTEF %
Tenured/Tenure-track	1.8	37%	53.7%	42.8%
Not tenure-track	3.1	63%	46.3%	57.2%
Total	4.9	100%	100.0%	100.0%

As recently demonstrated, and as these numbers demonstrate, we have a high fraction of P/T faculty. It's not that we don't have permanent faculty – we have way more than the 1.8 reported!!! It's that they are all very active and successful at research, and thus have significantly reduced teaching loads. So the 1.8 is a combination of several fractions of people. In addition we have had two faculty on sabbatical this year. Much of our instruction is performed by P/T faculty.

Part C

10. Closing the Loop/Recommended Actions

For the MS Meteorology, one recommendation from Program Planning was to hire more faculty. In AY 14-15 we accomplished that, so we are very happy. We feel this will give that aspect of our program some necessary permanence. Last year's assessment analysis revealed no structural problems with the MS PLO we assessed, and thus no changes were made and thus there is nothing to report. The faculty faithfully discuss assessment during at least one (and typically more) faculty meetings per semester.

11. Assessment Data

In AY 14-15 for the MS Meteorology program we assessed PLO-1: "Be able to conduct an independent research project, and communicate the results in written and oral form in acceptable professional formats."

To understand this, let me explain our process: in their 1st year, an MS student typically takes three classes (nine units) per semester. S/he also selects an advisor and a research thesis topic, and begins doing a small amount of research (under METR 298). In his/her 1st summer and following year, the student principally works on their research project (298,299). Ideally there is a lot of interaction with the faculty member at first. Thereafter, the student develops the ability work independently, and produce some novel work. At the conclusion (typically during the 2nd summer), the student is ready to write their thesis. This is a technical presentation of their research which conforms to our style. Ultimately, this thesis should be acceptable to GS&R¹. Once the thesis is completed and deemed acceptable to the advisor and the thesis committee, the student then makes a presentation of their work in a department seminar. In other words, the student makes a seminar presentation of about

¹ But there was the "Great Hyphen War" of 2012.

45-50 minutes in the appropriate format (e.g., not hand puppets). At this point, the student's work is considered acceptable to us and SJSU, and the student graduates with the MS.

So, by definition, every student who completes the MS in our program MUST have satisfied PLO-1, giving us a 100% pass rate. This is not the same as 100% graduation rate for the MS program – the occasional student will start and not finish. They typically complete the (currently) required 24 units of classwork, but stumble on the (6 units of) research work. The problem is usually one of: lack of real interest in the project (any project), weak background skills (typically in computing), absent skill of being/becoming an “independent researcher”. These students generally find a job and disappear (and rarely return to complete the MS).

We hand out surveys to the audience in the seminars to request feedback, and this forms our data for this assessment. All surveys and data are archived in Department Assessment Data Archive (DADA).

12. Analysis

We have gathered data for over 5 years now on graduating MS students; data on admissions versus graduations is harder to find. Of those students who did successfully complete the MS, 100% satisfied the PLO. This is good: it means we set high standards and we maintain them. The faculty who serve as research advisors (which is all of us) spend a lot of time with each student every week, semester, and year. The students are supposed to be able to satisfy PLO-1 upon completion.

As mentioned above, the occasional student will start and not finish. They typically complete the required 24 units of classwork, but stumble on the research work. The problem is usually one of: lack of real interest in the project (any project), weak background skills (typically in computing), absent skill of being/becoming an “independent researcher”. These students generally find a job and disappear (and rarely return to complete the MS). By our time commitment, we give all students every chance to succeed, but some just don't.

13. Proposed changes and goals (if any)

If we wanted to reduce the number of students who start the MS program but drop out, we might start by raising the GPA required for admission. About five years ago we raised it from 2.5 to 2.75. Some faculty have argued that we should raise it to 3.0. this would reduce enrollments, so there is a continuing internal debate. It is not clear to this writer that a higher GPA would automatically convert to completion – some students simply find that they are not “cut out for” graduate work.

Overall, we are very happy with our graduate program. We have high standards (as recognized by colleagues at other institutions), and high expectations, and we generally have very positive outcomes. Nothing needs to be fixed right now.