Unit Planning for Instruction
Science Division

For 2007-2008 Implementation

Preamble: Planning parameters at the Institutional level include:

- **$6 million recurring deficit for FY 08**
- **Recovery of deficit will occur in the general Fund 111100**
- **Goal is 2% FTE growth over 2005-2006**

Section I: Data Elements

Comments:

1. *The data are not the rules*. Decisions about continued funding will be made only in part on the data; we are not in a place where we can make exclusively data-driven decisions.
2. The data presented here are on the Science Division Server.
3. Comparisons among reports are made difficult by the different assumptions and exclusions made in each report.

1) Enrollment and Demand Data

Enrollment and the number of sections both increased between 01-02 and 02-03. Since that peak, enrollment has continued to decline in some disciplines, while the number of sections has remained high.

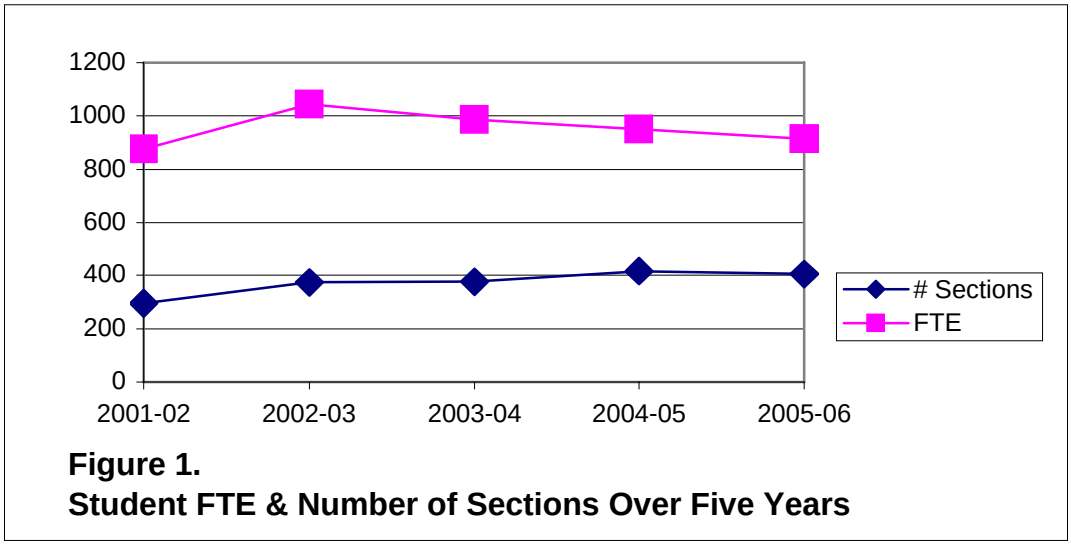

Figure 1.
Student FTE & Number of Sections Over Five Years

	2001-02	2002-03	2003-04	2004-05	2005-06
# Sections	296	375	376	418	406
Student FTE	876	1043	986	951	915

Tables 1 and 2 should be reviewed together. Enrollment in the Life Sciences has remained at the high level first reached in 2002-03. All other disciplines are down, some by as much as 30%.

Table 1. Four-Year Comparison of Annual Sections and FTE

	# Sections				FTE			
Subj	01-02	02-03	03-04	04-05	01-02	02-03	03-04	04-05
BI	136	176	175	189	423.66	506.17	506.49	509.26
CH	63	91	75	81	188.22	241.85	209.07	181.1
ENGR	9	8	7	7	12.77	13.29	9.14	10.02
EES	26	35	41	45	68.14	88.53	74.18	78.13
NRG	21	19	26	26	42.97	51.19	36.42	35.52
PH	33	34	34	31	87.93	81.99	70.92	57.67
TOTALS	288	363	371	412	823.69	983.02	908.67	881.24

Table 1 consolidates course prefixes by like subjects and discipline oversight.
BI includes GS 101, BOT, and Z courses
CH includes GS 105
EES includes G, ENVS, GS 106, 142, 147, 171, 172, and 173.
NRG includes all X course prefixes.
PH includes GS 104, PGS, and ASTR

2) Capacity and Utilization Data

Consolidating courses to their respective disciplines requires further analysis to assign GS registrations to courses. The following list contains our current grouping of subjects in disciplines, but the table does not break out GS courses into their respective disciplines.

- BI includes GS 101, BOT, and Z courses
- CH includes GS 105
- EES includes G, ENVS, GS 106, 142, 147, 171, 172, and 173.
- NRG includes all X course prefixes.
- PH includes GS 104, GS 107, PGS, and ASTR

Table 2. Four Year Comparison of Fill Rates 9/12/06

CAPACITY - Subject Summary

Fall, Winter, Spring Only

	# of Sections			Registrations			Subject Maximum			% Full		
Subject	2003-04	2004-05	2005-06	2003-04	2004-05	2005-06	2003-04	2004-05	2005-06	2003-04	2004-05	2005-06
BI	130	143	138	3217	3415	3355	3119	3459	3537	103%	99%	95%
CH	46	48	50	1061	1119	1122	1101	1254	1324	96%	89%	85%
ENGR	5	6	6	94	94	107	120	160	160	78%	59%	67%

	# of Sections			Registrations			Subject Maximum			% Full		
EES	21	24	25	465	514	385	504	576	627	92%	89%	61%
GS	15	17	8	439	522	249	468	568	290	94%	92%	86%
NRG	26	26	32	422	446	551	648	658	851	65%	68%	65%
PH	25	22	28	487	365	509	626	528	755	78%	69%	67%

Student FTE per section.

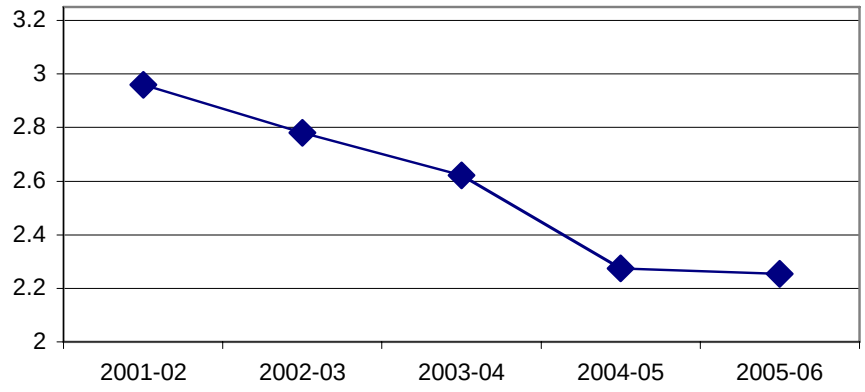

Figure 2.
Declining Student FTE per section

	2001-02	2002-03	2003-04	2004-05	2005-06
Student FTE per section	2.96	2.78	2.62	2.28	2.25

In parallel with this decline, the division has seen a decline in the average enrollment at 94% of capacity in 2003-04 to 83% in 05-06.

3) Student Success Data

Table 3. Class Completion and Success, 2005-06

8/18/06

Subj	Subject Desc	End Wk2 Total	Finish	Complete Rate	ABCP	Success Rate
BI	Life Science	3309	2917	88%	2626	79%
CH	Chemistry	1114	907	81%	792	71%
ENGR	Engineering	104	96	92%	95	91%
EES	Earth and Environmental Science	402	362	90%	341	85%
GS	General Science	254	211	83%	204	80%
NRG	Energy Management	334	315	94%	309	93%
PH	Physics	505	418	83%	386	76%
	Division Totals	6022	5226	87%	4753	79%

NOTE: Consolidating courses into their respective disciplines requires further analysis to assign GS registrations to courses. The following list contains our current grouping of subjects in disciplines, but the table does not break out GS courses into their respective disciplines.

- BI includes GS 101, BOT, and Z courses
- CH includes GS 105
- EES includes G, ENVS, GS 106, 142, 147, 171, 172, and 173.
- NRG includes all X course prefixes.
- PH includes GS 104, GS 107, PGS, and ASTR

The division average completion rate was 87%; 79% passed with a grade of P, or C or higher. These data are also available by section, so individual instructors can review the success rates of students in each section.

Note: For some programs a grade of D or above is considered passing.

4) Expenditures and Revenue

Table 4. Cost-Per-FTE REPORT, 2005-06

SUBJ_InclGr_Detl Subj level Faculty, Classified, Manager and M&S Direct and Overhead including grants.

Subj		# Fac	Sects	FTE	Faculty Costs	CPF	Total CPF
ASTR		4	5	15.5	$28,369	$1,830	$6,340
BI		30	159	440.63	$1,242,954	$2,820	$7,330
BOT		1	2	4.59	$19,235	$4,190	$8,700
CH		10	81	166.69	$541,156	$3,250	$7,750
ENGR		1	1	1.81	$6,774	$3,740	$8,250
ENVS		3	5	8.68	$29,901	$3,440	$7,950
G		7	25	43.96	$193,122	$4,393	$9,260
GS		6	13	43.46	$86,362	$1,990	$6,490
NRG		11	19	26.61	$128,664	$4,840	$9,340
PH		7	24	50.09	$270,749	$5,410	$9,910
XCST		1	3	0.76	$5,445	$7,160	$11,670
XHE		1	1	0.33	$1,361	$4,120	$ 8,630
XNRG		1	18	8.18	$65,334	$7,990	$12,490
XRH		1	2	0.84	$5,445	$6,480	$10,990
Z		1	4	14.75	$34,908	$2,370	$ 6,870

Same data, with subjects consolidated except for GS. The formula for total cost per faculty is not included in the spreadsheet, so we cannot consolidate these costs.

Subj	# Fac	Sects	FTE	Faculty Costs	CPF	Total CPF
BI	32	165	459.97	$1,297,097	$2,820	
CH	10	81	166.69	$541,156	$3,246	
ENGR	1	1	1.81	$6,774	$3,743	
EES	10	30	52.64	$223,023	$4,237	
GS	6	13	43.46	$86,362	$1,987	
NRG	15	43	36.72	$206,249	$5,617	
PH	11	29	65.59	$299,118	$4,560	
Total/average	85	362	826.88	$2,659,779	$3,217	

Costs for the Geology discipline have been adjusted to exclude costs for release time funded by OISS. For FY07, the assessment work continues and an NSF grant for GIS development also provides significant release time.

The number of sections reported for ENGR is incorrect – there are 6 sections. However, the CPF figure is an adequate approximation of the cost per FTE.

Division Revenues, IRAP report, 11/15/06

Total Credit Tuition Revenue = **$19,530,425**
Total Noncredit Tuition Revenue = **$1,062,000**
Tuition $ per Credit used to apportion tuition revenue = **$66**
Total Public Resources (TPR) = **$39,742,360**
TPR per Reimbursable FTE for 2005-06 = **$3,811**

Notes for Revenue Report:

This report is based on course subjects -- not programs.

A department's enrollment data reported in the Revenue Report may not include total enrollment data for the year (e.g., subjects, student FTE, student credits) because the course-subject basis for each department corresponds to the course-subject basis and student FTE included in the Cost-per-FTE report (see Cost per FTE Report "Notes" to understand record "exclusions" from that Report).

Total tuition revenue attributed to credit courses derived by Banner queries prior to final audited data.
Total tuition revenue attributed to non-credit courses derived by Banner queries prior to final audited data.
Number of Student Credits reported by subject were derived from OCCURS revised submissions for 2005-06 (total student credits).
Apportioning of credit tuition to subjects and departments is based on number of student credits for each subject and total student credits for 2005-06.

Total Public Resources (TPR) derived from Banner queries (state support = $26,631,787; local tax revenue = $13,110,573).
Apportioning of TPR to course subjects is based on total reimbursable FTE for 2005-06 and the student FTE reported for each subject in this report (NOTE: student FTE for the subject is based on courses and corresponding student FTE included in the Cost-per-FTE Report); estimated TPR per FTE used in this Report = $3,807, and includes local revenues which are not driven by FTE. Irrespective of earned FTE, local tax revenues are guaranteed by local laws and administrative rules.

Student fees were derived from funds 1, 8, and 9 and were determined by "Organization" and when possible, were attributed to specific subjects; otherwise, they were included in department total.

"Other Sources" of revenue include items such as sales (e.g., books and from the student restaurant) and rental fees and were derived from funds 1, 8, and 9 and were identified by "Organization."

Report Prepared 11/15/06

Subj	# of Student Credits	Tuition apportioned by credits ($)	Tuition apportioned by student FTE ($)	Student FTE included in report	Final State Total Public Resources apportioned by student FTE ($)	Total Student Fees, Grant, and Other Revenues	Total Revenue
BI	15,370	1,021,301	0	460	1,752,900	32,651	2,806,852
CH	6,264	416,228	0	167	635,239	1,764	1,053,231
ENGR	133	8838	0	1.8	6898	0	15735
EES	1,631	108,376	0	53	200,606	725	309,707
GS	1,318	87,578	0	44	165,622	0	253,200
NRG	923	61331	12297	36.7	139936	395739	609304
PH	2,191	145,587	0	66	249,957	124	395,668
totals	27,830	1,849,239	12,297	827	3,151,158	431,003	5,443,697

Division planning parameters

- FTE target for disciplines – To be developed by each discipline, with a baseline target of 2% growth
- Expected budget to work within - Budget Planning Parameters produced by the Target Model and Across the Board (ATB) revenue projections reduce the Division's budget by very significant amounts. The following list shows 3 cases for each method:

FY 08	TM		ATB	
	Budget	Reduction	Budget	Reduction
Worst Case	$2,737,284	$406,408	$2,819,618	$311,307
Mid Case	$2,836,510	$317,104	$2,919.076	$212,156
Best Case	$2,920,853	$217,878	$3,014,531	$116,086

Compare to FY07 Science Division budget of $3,079,194.

Section II: Program Analysis

1. **What did your unit accomplish last year in relationship to your 04-05 and 05-06 planning initiatives? What were other accomplishments not related to the annual planning initiatives?**

Unit's Accomplishments	Strategic Directions Goals: 1—8	Learning Plan Goals: 1—26	Student Affairs Plan Goals: 1—14
Increased College Now agreements	1, 3, 6, 7	1, 3, 4, 8, 9	4, 6, 11
Increased Community Awareness of Sci Programs	1, 4	3, 8	5, 6, 11
Completed a feasibility analysis of the Energy demonstration building	1, 3, 5, 6, 7, 8	1, 5, 6, 9, 10	4, 5, 6, 8, 11
Successfully submitted GIS grant	1-8	1, 4-10, 19, 20, 24	2, 5, 11, 12, 14
Participated in grant submissions: REESE, UO STEP (successful), DOLETA	1-8	1, 4-10, 19, 20, 24	2, 5, 11, 12, 14
Piloted partnership with PCC's distance learning MLT program (funded by PCC's winning DOLETA grant)	1, 3	1-5, 8-10, 17, 18	6, 7, 11, 14
Completed new faculty hire, physics	1, 4	4, 20, 24	
Completed assessment project for Biobonds; projects begun for life sciences and division wide	1, 2, 7	1, 3-5, 7, 10, 25	1, 2, 5, 7, 9
Expanded course offerings to include a biology course in Costa Rica, eight new courses in Biology, Chemistry, Earth and Environmental Science, Energy Management, and Physics.	1, 4	1, 3, 4, 10, 11	
Partnered with community groups to promote science education and to benefit Mount Pisgah Arboretum	1, 4	1, 9	11, 14
Hosted a statewide working group to discuss prerequisites for Anatomy and Physiology courses.	1-3	1, 3-5, 7-10	1, 2, 5-7, 9, 11, 13, 14

05/06 Planning Initiatives

Initiative		Outcome
New Faculty to Sustain & Improve Instruction to Meet Student Learning Needs in Biology	One full-time faculty	Not Funded
GPS Receivers	18 GPS Receivers	Not Funded

Develop Effective Program Assessment, to Create Shared Activities that Integrate CH 112 & BI 112, to Align the Topics of These Two Courses & Build Organizational Capacity of this Learning Community	180 hours CD	Successfully implemented findings of assessment and CD Summer-Fall 2006
Expand Course Offerings in Biology: Implement the development of curriculum for a BI 103, on-majors on-line course entitled "Evolution & the Diversity of Life"	100 hrs CD pay & equipment	Completed; New course offered Fall 2006
Expanded course offerings to include a biology course in Costa Rica and other new courses in Biology NEW COURSES IN BIOLOGY	Course in Costa Rica Bi 103 Ethnobotany, BI102J Animal Behavior, BI103	First offered Summer, 2006 Fall 2006 Spring, 2007

04/05 Initiatives

Initiative		Outcome
Addition of one full-time faculty position in the Biology Discipline of the Science Division.	Add 1.0 FTE position	Not Funded
Life Science Laboratory Support Project	Request would have added a 0.75 FTE position.	Not Funded
Science Resource Center Student Support Project	Request would have added a 0.75 FTE position.	Not Funded
Biology Technology Improvements/Upgrades:	Wireless Internet hubs for biology classrooms 103, 111, 115 and 117	
Curriculum Development to Develop Linked Activities Between CH 112 and BI 112	Enhance Student Success and Retention by Improving Student Comprehension of Complex Concepts and Student Attitudes	SUCCESSFULLY ACCOMPLISHED
Expand Course Offerings in Biology	Develop curriculum for a BI103, non-majors “emphasis” course entitled “Evolution: The Central Theory”.	Partially Funded
Expand Course Offerings in Biology	Develop curriculum for a BI103, non-majors “emphasis” course entitled “Animal Behavior”.	Partially Funded

2. **What assessment activities did your unit undertake last year? In this section, please review and revise assessment plans submitted last year and identify the progress made on last year's assessment plan. Attach the revised assessment plan.**

See also table of accomplishments in question 1.

Assessment activities in the Science Division included: a review of Biobonds curriculum, math needs in EES and life science courses, course sequencing and content in physics; and determination of necessity for a Math pre-req for Biology courses (EES and life science courses). The division is currently determining whether there should be a Division-wide basic math pre-requisite. We are focusing the discussion by asking the question of whether basic math skills would help improve and focus teaching of science courses. IRAP has made available data that should allow us to analyze current math skill levels of students enrolled in Bi 100 courses.

Continuing assessment projects include: math needs of science students, impact of changing math prerequisites for EES.

New projects include: discipline-level and division-wide impact of additional PH and ASTR sections (related question the Division is examining – did increases in number of 100-level biology classes in the 2003-4 year dilute enrollment available for physical sciences?); review of Biology Grid to reassess the core concepts for Bi 101, 102 & 103 courses and how they connect those courses; consideration of Bi 101 pre-requisite for all Bi 102 & Bi 103 courses.

Members of the Physics discipline examined enrollment patterns and determined additional sections of calculus-based physics could be filled. As of late Fall quarter 2006, there is sufficient capacity and enrollment demand to add one sequence of PH 21X this year. Enrollment in other science majors courses is high enough that several more sections of both PH 20X and 21X could be added once demand has been built.

3. **Based on assessment results or other evidence, what program areas (new or continuing) need attention?**

To improve delivery of content, faculty in A&P will explore converting their courses from 4 to 5 credits.
To improve articulation with other OUS schools, faculty teaching majors biology courses will explore course revisions in BOT 202 and Z 202.
To counter enrollment declines in EES, discipline members will review student interests and needs. To improve efficiency, we will reduce the number of sections in all disciplines as appropriate, and to maintain a balanced selection opportunity for students. The Division will attempt to reverse the enrollment decline through increasing recruitment and retention of students. Several faculty have committed to participating in outreach and marketing efforts and a portion of Division M&S will be earmarked for publicity costs during FY 07 and FY08.
Articulation agreements and HB342 encouraged Biology to review the Life Science Majors courses. Gail Baker and Stacey Kiser are submitting Course Number Revisions to change BI 201 to BI 211, BOT 203 to BOT 213, and Z 203 to Z 213. The middle term is being revised, and will be submitted to reflect a curriculum that integrates plant and animal physiology, and will be numbered BI 212. After the changes, students will transfer with BI 211, BI 212, and either BOT 213 or Z 213 (or both), which fits better with U of O and OSU introductory biology course numbering.

The Biology discipline is conducting a periodic review of the non-majors course offerings. Courses are being checked for adherence to content in the BI 101, 102, and 103 topics.

Enrollment in ASTR courses is not as robust as in the past; members of the Physics discipline continue efforts to strategically grow enrollment. Given there are many more majors taking chemistry and biology courses, there is a clear opportunity to increase enrollment in 200-level physics courses.

4. **Overall, what strengths do you believe your unit demonstrated in 2005-2006?**

Members of the Science Division are uniquely gifted with creativity and ingenuity. We are able maintain flexibility and a focus on meeting the needs of students. The Science Division continues to provide an excellent teaching and learning environment for students. Over 7700 students were provided excellent support in their classrooms and the Science Resource Center by dedicated, student-centered staff. Science faculty developed 8 new courses, and a biology course was offered in Costa Rica for the first time. Assessment projects were initiated by three disciplines.

5. **Overall, what challenges do you believe your unit faced in 2005-2006?**

One of the most challenging events of last year was budget development for 06-07 and reductions of support staff during 05-06.

6. **What conclusions do you draw from this analysis about needed improvements or changes in 2007-2008?**

The availability of in-house curriculum development funds from 2004 through summer 2006 was critical to maintaining and developing fresh and new courses. We strongly urge the continuation of self-determination of revenues generated by tuition-based courses.
Budget development discussions must begin early with all committed to common goals.
The AP discipline will be requesting laboratory materials and technological enhancements by requesting funding from both Perkins Grants and TACT.
EES faculty will be submitting a curriculum development request for 100 hours to develop the sustainability program curriculum.
Chemistry and Biology faculty will be developing SI units and will submit applications to the SI group and to the college for curriculum development funding.
The greatest opportunity for growth is in 200-level Physics; additional sections will be offered as demand increases.
Faculty from all disciplines will be partnering to better align schedules of courses, especially of 200-level courses so that students can progress more rapidly through their programs.