

2015-2016 Program Review

Executive Summary

<u>Overview</u>

Wichita State University program review is organized around a year-long preparation and review of a self-study that is intended to create a thoughtful assessment of the quality of academic programs and to establish goals for improvements. The process of reviewing these studies (which includes faculty, the deans, the University Program Review committee, and the Provost and Senior Vice President for Academic Affairs) is expected to strengthen the academic programs, identify program needs and campus priorities, and identify areas for reorganization.

On a 3-year cycle each academic unit prepares a self-study using a standard reporting template. These 3-year reports then feed into the required review by the Kansas Board of Regents (i.e., each program is required to be reviewed once during an 8 year period). Hence, there is a continuous review process of each academic unit.

The triennial reporting cycle, begins one year in advance of being due each November (on a staggered schedule so that college programs are reviewed together) when the Office of Academic Affairs offers a workshop for chairs and assessment coordinators, and continues until April 1st when the studies are submitted to the respective Deans. Thereafter the studies are reviewed by the Deans, Graduate School (as appropriate) and the University Program Review committee (consisting of the Associate Vice President for Academic Affairs, Director of the Office of Planning Analysis, the President, President-Elect, and Past-President of the Faculty Senate, and a Dean). Each unit is provided with an opportunity to discuss and clarify those reviews. The University committee submits its final report to the Provost and Senior Vice President for Academic Affairs by November 1st.

Intensive Review of Selected Programs

The programs undergoing intensive review this year were in two different colleges (Engineering and Liberal Arts and Sciences) and ranged from bachelor level to doctoral level programs. While two colleges had programs scheduled for intensive review, only engineering was scheduled to be reviewed by the Kansas Board of Regents.

To assist programs in writing their self-studies, departments/programs had access to:

• Program minima data provided by the Office of Planning and Analysis. These data were made available fall 2014.

- Data from exit surveys and other surveys collected by the University and within departments.
- External specialty accreditation reports (as appropriate).

Overall Outcome of Program Reviews: All programs reviewed were recommended for continuance (reviews start on page 4). Compared to their last review in 2013, where most programs were lacking in the area of student learning assessment, only one program fell into that category in 2016. It was apparent in the 2016 review materials that program faculty utilized their 2013 feedback to make improvements in the area of student learning assessment (see appendix).

Triggered Programs Monitored

Besides the programs that underwent intensive review this year (starting on page 4), the remaining low major/degree triggered programs were also reviewed for updates on plans to increase majors and degrees (using FY 2014 data, see below).

Program	Trigger from Minima Report	Status
Athletic Training	UG Majors/Degrees	Continue – Program established 2004-2005, intensive review in 2018
Arts/Studio Arts	GR Majors	Continue – Intensive review in 2017
Manufacturing Engineering	UG Majors/Degrees	Continue – Intensive review in 2016
Engineering Technology	UG Degrees	Continue – New program
Chemistry	GR Majors/Degrees (MS)	Continue – Intensive review in 2016
Earth, Environmental,	GR Majors	Continue – Intensive review in 2016
Physical Science		
Philosophy	UG Degrees	Continue - Intensive review in 2018
		Academic support program
Physics	UG Degrees	Continue – Intensive review in 2016
		Academic support program
Forensic Science	UG Degrees	Continue - Intensive review in 2018
Sociology	GR Majors/Degrees	Continue - Intensive review in 2018
Spanish	GR Majors	Continue - Intensive review in 2018
Women's Studies	UG Degrees	Continue - Intensive review in 2018

Note: Compared to last year's report, the following programs were removed for low majors – communication, sciences, and disorders; engineering management; engineering technology; forensic sciences; philosophy; physics; and women's studies. Engineering management and Spanish were removed for low degree productivity. No programs were added.

Potential Costs of Recommendations

None of the recommendations made will require any additional cost to the University.

College of Engineering



College: Engineering	On Target	Meets Expectations	Does Not Meet Expectations
Department: Aerospace Engineering	3	2	1
Year: 2016			
Department is expected to address:			
Centrality of the program to fulfilling the mission and role of the institution	Program mission is clearly defined and is in alignment with university mission.	Program mission is clearly stated. The role of the program and relationship to the university mission is in general aligned with university mission.	Program mission is not stated or is not in alignment with university mission
Quality of the program as assessed by the strengths, productivity and qualifications of the faculty	The document clearly reflects that faculty members are fully qualified to support the program goals with productivity directly linked to program enhancement	The document reflects that the strengths, productivity and qualifications of the faculty associated with the program are sufficient to sustain the program.	Faculty productivity and quality are not evaluated as sufficient to meet the needs of the program.
Quality of the program as assessed by its curriculum and impact on students	The program assessment clearly shows both alignment and positive impact of the curriculum on student learning.	The program assessment plan is fully implemented and shows the alignment of the curriculum with student learning outcomes as they reflect the quality of student learning	The assessment plan does not align the curriculum with student learning outcomes or does not demonstrate the impact of the curriculum on student learning.
Demonstrated student need and employer demand for the program	The program clearly demonstrates importance based on employer need and student demand.	The program presents data that shows either employer demand or student need.	The program data does not indicate student need nor employer demand.
Service the program provides to the discipline, the university and beyond	The program clearly demonstrates its value to the discipline, to the university and to the community.	The program demonstrates value to the discipline, the university or the community.	The program does not demonstrate value to its discipline, the university and/or the community.
Evidence of feedback loop demonstrating program improvement	The program not only makes changes based on the data, but also systematically studies the effects of any changes to assure that programs are strengthened without adverse consequences. Shows significant program improvement as a result of feedback loop.	The program regularly uses data to evaluate student performance and the efficacy of its courses and programs. Changes made using assessments are documented, although results from those changes are yet to be seen.	The program makes limited or no use of data collected to evaluate the efficacy of its courses and programs.



Degrees Offered: BS, MS, and PhD

Triggers: None

Commendations:

- Accredited programs, meeting accreditation standards.
- Overall, meeting learning outcomes, and when results fall below targets, a rational/course of action is provided.
- Plan of action for the next three years to address impact of low demand projection for undergraduate program as well as creating a healthier relation among all research grant constituents.

- Deploy an action plan to improve undergraduate student satisfaction which is lower than that of the University.
- Department should consider developing a sustainable faculty staffing plan.
- Explicitly report the services programs provide to the discipline, the University and beyond.
- While student learning assessment demonstrates students are learning the content and matches ABET requirements, it is unclear how many students are assessed for each outcome, and there is limited information on how the data is used in terms of students not meeting the outcome.
- For graduate assessment, in the future, department should align with the graduate assessment plan developed by the college of engineering graduate committee.



Department: Biomedical	On Target	Meets Expectations	Does Not Meet Expectations
engineering	3	2	1
Year: 2016			
Department is expected to address:			
Centrality of the program to fulfilling the mission and role of the institution	Program mission is clearly defined and is in alignment with university mission.	Program mission is clearly stated. The role of the program and relationship to the university mission is in general aligned with university mission.	Program mission is not stated or is not in alignment with university mission
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Degrees Offered - Biomedical engineering

Triggers - None

Commendations:

- Newly accredited by ABET.
- The faculty have been productive in terms of scholarship, teaching, service, and recruitment (both faculty and students).

- Student learning assessment demonstrates students are learning the content and matches ABET requirements, however, it is unclear how many students are assessed for each outcome, and there is limited information on how the data is used in terms of students not meeting the outcome.
- The program and department have been renamed to biomedical engineering, but throughout the document it is still called bioengineering.
- Align department/program mission with the university mission.
- Work with college dean/provost on steps to create a graduate program.



Department: EECS	On Target	Meets Expectations	Does Not Meet Expectations
Year: 2016	3	2	1
Department is expected to address:			
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Degrees Offered – Bachelor of Science, Electrical Engineering Bachelor of Science, Computer Engineering Bachelor of Science, Computer Science Master of Science, Electrical Engineering Master of Science, Computer Networking Master of Science, Computer Science Doctor of Philosophy, Electrical Engineering and Computer Science

Triggers - No triggered programs

Commendations:

- Strong faculty research production/awarding of grants/teaching awards.
- Maintenance of ABET accreditation with no warnings/probationary actions.

- Department uses multiple assessment tools to evaluate student learning and using data to make changes as needed, however, it is unclear how many students are assessed for each outcome, and there is limited information on how the data is used in terms of students not meeting the outcome.
- The document indicated they will need to hire 3 more tenure/tenure-track faculty in order to sustain the number of students enrolled
- Include employment data and how it's used for graduates for next review.
- Show more documentation on service the program provides to the university and beyond in next program review.
- More specific goals and targets needed to measure plans for the next 3 years.



Department: Engineering Tech	On Target	Meets Expectations	Does Not Meet Expectations
Year: 2016	3	2	1
Department is expected to address:			
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Degrees Offered - BS in Engineering Technology

Triggers – New program

Commendations:

- New program which shows growth.
- Good assessment plan in place.
- Recently site visited by ABET.

- It would be helpful for the program to be more specific in their mission in terms of their discipline.
- Need more information on the expectation of the faculty role in scholarship.
- As the number of graduates grow, it will be important to track, monitor, and evaluate alumni outcomes to improve the curriculum.
- Discuss role in service to the university, college, university, and beyond.
- Future reviews should demonstrate closing the loop in terms of collecting and using data.



College: Engineering	On Target	Meets Expectations	Does Not Meet Expectations
Department: Industrial & Manufacturing Engineering	3	2	1
Year: 2016			
Department is expected to address:			
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Degrees Offered: BS, MS, and PhD in Industrial Engineering, BS in Manufacturing Engineering, MEM in Engineering Management

Triggers: BS in Manufacturing Engineering (Majors: 16.6 <25 and Grads: 4 < 10)

Commendations:

- Accredited programs, meeting accreditation standards.
- Applaud the department for pointing out the opportunities available.
- High teaching and service load with strong grant productivity.
- Closed feedback loop in student learning assessment for continuous improvement of the programs.

- Bachelor degree in manufacturing engineering is triggered for both majors and grads. The numbers are significantly below the thresholds. The department/college should have a well-developed plan of action on how to further this program in terms of increasing majors and graduates for the next review.
- Student learning assessment demonstrates students are learning the content and matches ABET requirements, however, it is unclear how many students are assessed for each outcome, and there is limited information on how the data is used in terms of students not meeting the outcome.
- Track, report, and evaluate employment of majors and how this data can improve the program.



Department: Mechanical ENGR	On Target	Meets Expectations	Does Not Meet Expectations
Year: 2016	3	2	1
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Degrees Offered – Bachelor of Science, Mechanical Engineering Master of Science, Mechanical Engineering Doctor of Philosophy, Mechanical Engineering

Triggers – No triggered programs

Commendations:

- Faculty productivity in journal articles, presentations, and grants awarded.
- Large number of majors and graduates.
- Production of SCH for non-majors.

- Refine undergraduate assessment plan/make clear what the targets and results are; unclear how many students are assessed for each outcome, and there is limited information on how the data is used in terms of students not meeting the outcome.
- Examine exit survey data on student satisfaction and determine what can be done to improve satisfaction scores for the next review.
- Increase number of under-represented minority students (which has already been addressed by the department).
- Include more information regarding the service the program provides to the university and beyond in the next program review

College of Liberal Arts and Sciences



Department: Biology	On Target	Meets Expectations	Does Not Meet Expectations
Year: 2016	3	2	1
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Degrees Offered - B.A. Biology, BS in Biology, MS in Biology

Triggers: None

Commendations:

- Program mission connects to university mission. However, the role of the program and relationship to the university mission could be better explained.
- Productive faculty in terms of publications and presentations.
- Students are engaged in research and outreach activities, which is in line with university mission.
- ETS Major Achievement test is used as an assessment tool which provides comparative results with respect to national average.
- Proposing creative ways to increase the capacity of the departmental courses via online courses and new lab/classroom designs

- Learning outcomes, and assessment tools should help assess and continuously improving the program. There are no learning outcomes which may measure communication and presentation skills of the students. Department should report and elaborate on results from several sources other than exit surveys. Grades from a course should not be used as target values.
- Assessment at graduate level should involve more comprehensive tools, not only through MS Thesis defense and student exit interviews.
- Faculty and staff resources are needed to increase the productivity and research of the department.
- Finding a better way to track graduate employment data would likely be helpful to inform the UG program for improvements.



Department: Chemistry	On Target	Meets Expectations	Does Not Meet Expectations
Year: 2016	3	2	1
Department is expected to address:			
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Degrees Offered - BS, BA, MS; PhD Chemistry; (Concurrent Enrollment)

Triggers – MS (Enrollment/Graduation numbers)

Commendations:

- The mission of each program is stated and is aligned with university mission in general.
- Faculty productivity is good in light of difficult economic circumstances affecting grant availability and support for positions. Department is to be commended for its efforts to address both concerns.
- The program is commended for the priority it places on student engagement in research and for providing and encouraging several opportunities for student participation in paper writing, presentation, and publication.
- The program shows a solid alignment with the needs of programs of programs across the university and addressing the needs of students in a broader context. The report documents wide-spread benefits to programs and colleges across the university. Program contributes to general education and offer service courses and essential instruction to several undergraduate majors and graduate programs.
- The program is recognized for its efforts to address difficulties associated with concurrent enrollment matters resulting from university administrative decisions.

- Recommend further clarification of program demand/needs via student data, employer data (in and out-of-state). In addition to information on pattern of employment among graduates, particularly at the undergraduate level, it is recommended that general post-graduation salaries at all levels of graduates be included as part of future program assessment for the purpose of strengthening program statement on need and general planning for departmental growth.
- MS program is triggered re: enrollment and students graduating. Need to provide further review of opportunities to strengthen both figures in the context of the overall program, overall needs and opportunities.
- Department on track to meet assessment expectations. They need to prioritize analysis and reporting of results/improvements of learning outcomes for undergraduate, MS and PhD level programs. Clarification of the nature and application of some current measures, exams and reports, is needed. Not clear how many students were evaluated.
- Prioritize the assessment of the Biochemistry option (Chem 661) on a continuing basis.
- Address "targets" set for PhD level efforts in accordance with graduate school expectation.



Department: Geology	On Target	Meets Expectations	Does Not Meet Expectations
Year: 2016	3	2	1
Department is expected to address:			
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Degrees Offered - B.S. Geology, M.S. Earth, Environmental, and Physical Sciences (EEPS)

Triggers – Number of faculty, Master's level, Number of faculty are now at 5 tenure/tenure eligible all with doctoral degrees. (meets KBOR requirements)

Commendations:

- In 2014, despite having only two full time faculty and one visiting professor, faculty productivity in terms of scholarly activity including external grants and student credit hour production was exemplary.
- Faculty conducted their own survey to collect information from program graduates. Data indicate positive outcomes for program graduates in terms of employment and student satisfaction.
- Service to the university, given the number of faculty in the department.

Needs Going Forward:

• Use of course grades to measure outcomes should be refined by moving to identification of specific assignments accompanied by scoring guides or rubrics that are clearly aligned to learning outcomes.



Department: MSP	On Target	Meets Expectations	Does Not Meet Expectations
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Quality of the program as assessed by its curriculum and impact on students	The program assessment clearly shows both alignment and positive impact of the curriculum on student learning.	The program assessment plan is fully implemented and shows the alignment of the curriculum with student learning outcomes as they reflect the quality of student learning	The assessment plan does not align the curriculum with student learning outcomes or does not demonstrate the impact of the curriculum on student learning.
Demonstrated student need and employer demand for the program	The program clearly demonstrates importance based on employer need and student demand.	The program presents data that shows either employer demand or student need.	The program data does not indicate student need nor employer demand.
Service the program provides to the discipline, the university and beyond	The program clearly demonstrates its value to the discipline, to the university and to the community.	The program demonstrates value to the discipline, the university or the community.	The program does not demonstrate value to its discipline, the university and/or the community.
Evidence of feedback loop demonstrating program improvement	The program not only makes changes based on the data, but also systematically studies the effects of any changes to assure that programs are strengthened without adverse consequences. Shows significant program improvement as a result of feedback loop.	The program regularly uses data to evaluate student performance and the efficacy of its courses and programs. Changes made using assessments are documented, although results from those changes are yet to be seen.	The program makes limited or no use of data collected to evaluate the efficacy of its courses and programs.



Degrees Offered - BS, MS Math; PhD Applied Math; BS Physics; (Concurrent Enrollment)

Triggers - BS Physics (graduates)

Commendations:

- The mission of each program is clearly defined and tied directly to the mission of the educational, social and economic mission of the university.
- The document clearly reflects that faculty members are highly qualified and in full support the program goals and objectives. Faculty productivity is linked directly to program enhancement and student success.
- The program assessment report clearly shows a solid alignment of all programs with the university mission and a positive impact of the curriculum on student learning.
- Modifications to the program(s) included restructuring of measuring instruments to more appropriate assesses proficiency during the past review period. This resulting in documented enhancement of program outcomes. Learning outcome targets for math (BS-Math, MS-Math, and MS-Math) and statistics (BS) were met (1) or exceeded (4) for each of the five learning outcomes. Target scale should be defined.
- The physics program (BS-Phys) exceeded the expectation of students thereby meeting their overall targets. Report focus very strongly on program enhancements facilitating growth (already showing sign of promise). Further defining learning outcomes would be helpful.
- The MS (Math) program assessment was also modified in 2012. The report documents how the department continues to address the outcomes of the program assessment thus, keeping on target with the program mission and that of the university. Target scale should be defined along with numbers of students evaluated.
- The PhD program (Applied Math) meets two of the program targets and exceeds four. The program also documents the success of the graduates in research (# publications w/in 4 years of graduation). Student satisfaction 100%. Target scale should be defined along with numbers of students evaluated.
- The concurrent enrollment program in math is well reported and along with continuing modification and re-alignment with the public school system appears to be in compliance with KBOR policies.
- Demand for program(s) very apparent and is documented throughout the report. Data is very inclusive: program, employment/placement and program recognition. Also strong documentation of ACT scores above university average.
- The report documents wide-spread benefits to programs and colleges across the university. SCH production exceeds that of three colleges. All programs provide essential foundation to general education and many undergraduate majors and graduate programs.
- BS undergraduates generally hired within State of Kansas. This aligns with University mission. MS and PhD graduates to a lesser degree. Still, program remains in alignment with University and program mission, especially in light of the State's revenue/funding priorities.
- The report reflects a dynamic or living assessment plan. Responses to data collected pertaining to learner outcomes are addressed continuously and across all programs.
- Report includes a strong plan for faculty replacements, student support and research space.

- The program documents growth in undergraduate programs (4-8% so far; 20% projected long-term). Yet, all programs enroll recognizably fewer students than were actually admitted, while inquiries are also on the increase. This is the case for all three BS program. Capacity and funding is well documented as one important issue in the eventual resolution of this matter. But the department is also encouraged to revisit alternative strategies to strengthen enrollments among inquiries and among admitted students. Reactivating the MS in physics may be helpful in this regard.
- The Physics program should revisit the instruments used to measure program success and clarify target (generic vs. program).



- Post-graduation salaries for past students is in decline, this may have an impact on future enrollment patterns and should be considered in planning/projection for departmental growth.
- The programs are in need of funding for faculty, student, and space. The report documents the need for additional tenure-track math and physics faculty (2 each) and for an additional tenure-track statistics faculty.
- Programs remains highly dependent on internal (and possibly external) funding to address much needed growth as expressed in report.

Appendix



DEPARTMENTAL PROGRESS TOWARD ASSESSMENT OF PROGRAM – EVALUATION RUBRIC

Department/Programs Reviewed: 12*	On Target	Meets Expectations	Does Not Meet Expectations
Year: 2013	3	2	1
Departments were to address:			
Centrality of the program to fulfilling the mission and role of the institution	>12		
Quality of the program as assessed by the strengths, productivity and qualifications of the faculty	>12		
Quality of the program as assessed by its curriculum and impact on students	->1		>11
Demonstrated student need and employer demand for the program		>3	>9
Service the program provides to the discipline, the university and beyond	>12		
Evidence of feedback loop demonstrating program improvement	->1		>11

*<u>College of Liberal Arts and Sciences</u> – Biology; Chemistry; Geology; Mathematics, Statistics, and Physics; Social Work; General Studies/Interdisciplinary

*College of Health Professions – Physical Therapy

Notes:

- 1. The Program Review Committee provided feedback to each unit in terms of their overall assessment of how the unit completed their assessment report.
- 2. Major weaknesses were noted in the area of assessment of student learning, demonstrated need/employer demand for the program, and evidence of improvement.
- 3. Programs with weaknesses outlined above were required to resubmit updated reports addressing weaknesses. All departments complied.



DEPARTMENTAL/SCHOOL PROGRESS TOWARD ASSESSMENT OF PROGRAM – OVERALL EVALUATION

Departments reviewed:	On Target	Meets Expectations	Does Not Meet Expectations
Total = 10*	3	2	1
Year: 2016			
Department is expected to address:			
Centrality of the program to fulfilling the mission and role of the institution	>8	->1	->1
Quality of the program as assessed by the strengths, productivity and qualifications of the faculty	>8	>2	
Quality of the program as assessed by its curriculum and impact on students	>2	>7	->1
Demonstrated student need and employer demand for the program	>5	>4	->1
Service the program provides to the discipline, the university and beyond	>6	>3	->1
Evidence of feedback loop demonstrating program improvement	>7	>3	

*College of Engineering – Aerospace Engineering; Biomedical Engineering; Electrical Engineering and Computer Science; Engineering Technology; Industrial and Manufacturing Engineering; Mechanical Engineering

*College of Liberal Arts and Sciences - Biology; Chemistry; Geology; Mathematics, Statistics, and Physics

Notes:

- 1. The Program Review Committee provided feedback to each unit in terms of their overall assessment of how the unit completed their assessment report.
- 2. Compared to 2012, 2013, 2014, and 2015 improvement continues to occur in the overall process.
- 3. This is the first year where 90% of programs were on "target" or "meeting expectations" in all areas.