

**UNIVERSITY OF WASHINGTON
BOTHELL CAMPUS
PROGRAM ASSESSMENT, 2015-2017**



Compiled from Biennial Program Reports
Submitted to

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Vice Chancellor for Academic Affairs

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BUSINESS				
MAJOR	CONTACT	GOALS FOR STUDENT LEARNING	ASSESSMENT AND RESULTS	NEXT STEPS
Business	Kim O'Neill oneillk2@uw.	<ul style="list-style-type: none"> • Critical Thinking and Analysis. Students will develop a critical and analytical approach to formulating sound business decisions. • Ethical Reasoning. Students will develop the ability to employ ethical reasoning when engaging in business decision-making. • Written and Oral Communication. Students will develop the necessary skills to be effective communicators, both in writing and orally. • Business Knowledge. Students will develop the knowledge and skills that are necessary for success in a business career, including: <ul style="list-style-type: none"> ○ Financial Information. Apply principles of financial analysis to assess a firm's performance, financing options, investment choices, and risk and return of investments ○ Economic Principles. Apply principles of economic analysis to model and solve management problems ○ Quantitative Methods. Use quantitative methods to model management problems. ○ Behavioral Theories. Apply behavioral theories to understand the management of individuals and organizations ○ Social Theories. Apply social theories to understand the management of individuals and organizations. ○ Value Creation. Understand the management and measurement of value creation processes within the organization and allocation of the created value across owners, other investors, and stakeholders. 	<p>Assessment of Student Learning</p> <ul style="list-style-type: none"> • Classroom-based assessment, including analysis of student performance on exams, papers and presentations in core courses (for specific business knowledge areas) • Course evaluations • Peer review of teaching • Capstone course final papers and presentations (scored by an outside evaluator but using the program's rubric) • Annual junior and graduating senior surveys <p>Curricular Assessment/Change</p> <ul style="list-style-type: none"> • Introduced BBUS 307, Business Writing, to the Bothell program to better address the writing and ethics learning goals • In the Bellevue-ELC program, corrected curriculum issue related to the writing learning goal and strengthened curriculum related to the ethics learning goal • Added oral communications to the scope of BBUS/ELCBUS 320, Marketing Management, to more specifically address the learning goal • Modified BBUS/ELCBUS 340, Operations Management, to address specific calculations no longer addressed on a prerequisite course • Captured current learning goals for all core and capstone courses, reflecting the evolution of those courses and aligning the instruction of those courses 	Per AACSB standards, the major continues to improve its assessment program.

EDUCATIONAL STUDIES

MAJOR	CONTACT	GOALS FOR STUDENT LEARNING	ASSESSMENT AND RESULTS	NEXT STEPS
Educational Studies	This program is launching its first undergraduate degree in 2015-16, so there will be no report until the 2017-19 biennium.			

INTERDISCIPLINARY ARTS AND SCIENCES (IAS)

MAJORS	CONTACT	GOALS FOR STUDENT LEARNING	ASSESSMENT AND RESULTS	NEXT STEPS
<p><i>American and Ethnic Studies</i></p> <p><i>Community Psychology</i></p> <p><i>Culture, Literature and the Arts</i></p> <p><i>Environmental Science (BS)</i></p> <p><i>Environmental Studies (BA)</i></p> <p><i>Global Studies</i></p> <p><i>Individualized Study</i></p> <p><i>Interactive Media Design (Jointly Administered by STEM and IAS)</i></p> <p><i>Interdisciplinary Arts</i></p> <p><i>Law, Economics and Public Policy</i></p> <p><i>Mathematical Thinking and Visualization (launches in Autumn 2015)</i></p> <p><i>Media and Communication Studies</i></p>	<p>Rebecca Aanerud: raan@uw.</p>	<ul style="list-style-type: none"> Collaboration and Shared Leadership. IAS students develop their collaboration and shared leadership abilities by learning to work with others to identify dimensions of a project, generate and refine ideas, follow through on the consequences of collective decisions, and pursue specific tasks without losing a sense of the whole. As part of this process, they learn to assess and draw on group members' histories, strengths, and potential contributions. They develop skills in listening, mediating conflict, playing different roles, and reflecting on the outcomes of collaborative work. Essential to this progress is understanding different ways of managing groups, and reflecting critically and creatively on collaboration processes. Critical and Creative Thinking. IAS students develop their critical and creative thinking abilities by learning how to identify assumptions, and to work out how those assumptions inform results. They assess multiple perspectives, with an eye to understanding why and how they differ, and developing the capacity to engage in controversy productively. Students learn to identify central questions or concerns informing other work, and to develop their own work with clear animating questions. Students develop a range of skills in interpretation, analysis, argumentation, application, synthesis, and evaluation. Interdisciplinary Research and Inquiry. IAS students develop their ability to assess and conduct interdisciplinary research by engaging with diverse areas of knowledge and kinds of inquiry. They learn to think critically and creatively as they develop research questions with appropriate sources and methods, and present results in a form 	<p>Assessment of Student Learning</p> <ul style="list-style-type: none"> Classroom assessment, various methods Course evaluations Peer review of teaching Capstone portfolios Faculty assessment of a sample of student portfolios to identify directions for curricular change and/or professional development workshops and opportunities. <p>Curricular Assessment/Change</p> <p>Implemented faculty development workshops focused on actively teaching two of the IAS learning objectives: interdisciplinary research and inquiry; collaboration and shared leadership</p>	<p>IAS would like to implement longitudinal assessment, likely by reviewing initial portfolios alongside capstones and/or instituting entry and exit focus groups.</p>

INTERDISCIPLINARY ARTS AND SCIENCES (IAS)

MAJORS	CONTACT	GOALS FOR STUDENT LEARNING	ASSESSMENT AND RESULTS	NEXT STEPS
<p><i>Science, Technology and Society</i></p> <p><i>Society, Ethics and Human Behavior</i></p>		<p>suited to their intended audience. In this process, they learn to position their own work in relation to other research literatures and methods of inquiry, and in relation to relevant debates.</p> <ul style="list-style-type: none"> • Writing and Communication. IAS students develop their writing and communication abilities by articulating significant purposes for their work, and gaining an awareness of its audiences and contexts. They learn to communicate those purposes effectively to audiences through writing, presentations, and other media, and to use a range of evidence, both qualitative and quantitative, to support their arguments. As part of this process, they develop the ability to identify and refer to other work clearly. As part of the development of reflective practice, students learn how to improve their writing and communication by collecting and reflecting on evidence of its reception by others. 		

NURSING AND HEALTH STUDIES

MAJOR	CONTACT	GOALS FOR STUDENT LEARNING	ASSESSMENT AND RESULTS	NEXT STEPS
Health Studies (BA)	<p>Selina Mohammed selinam@uw.</p> <p>Kerri Hatfield kerrihat@uw.</p>	<ul style="list-style-type: none"> Identify the various factors that influence health and wellness at individual, community, and global levels Understand the policies and systems that shape our healthcare practices Acquire the skills to understand and critique health research at the population level Apply methods used in the development and evaluation of public health interventions Partner with individuals and communities to improve health outcomes Advocate for ethics in healthcare practice and for the just distribution of health care resources 	<p>Assessment of Student Learning</p> <ul style="list-style-type: none"> Classroom assessment, various methods Course evaluations Peer review of teaching Senior portfolios and course structured around the six learning goals for Health Studies Faculty review of digital senior portfolios Fieldwork (BHS 496): Students must complete 40 hours of fieldwork (essentially an internship, practicum), for which they evaluate themselves and their site preceptors evaluate their performance. Student self-assessment: In completing their senior e-portfolios, students reflect, assess, and articulate how they have met, are meeting, did not meet the Health Studies learning objectives and upload artifacts to illustrate and back-up their assertions Exit survey <p>Curricular Assessment/Change</p> <ul style="list-style-type: none"> Changed BHS 301, Introduction to Public Health, to BHS 201 because the introductory content was a better fit for a 200-level course Added BHS 300, Principles of Health Research, to the core requirements in order to close the gap identified by review of the curriculum in building skills in understanding, using, and writing about health research Changed title of BHS 302, Global Communities, Culture and Health Equity, to Social Dimensions of Health because the original title was unwieldy Changed BHS 303, Introduction to Epidemiology, to BHS 403, as the course requires a comprehension and application of epidemiological material that is above what is considered normal for a 300 level course. 	<p>The Health Studies Curriculum Committee in concert with curriculum committees for other degree programs within the School of Nursing and Health Studies (namely, Master of Nursing, MN; and Bachelor of Science in Nursing, BSN) intends to work on a program evaluation plan that considers components that are (1) consistent and collect similar data/information across all degree programs, and, (2) tailored for each individual degree program to collect data/information relevant to the individual degree program.</p>

NURSING AND HEALTH STUDIES

MAJOR	CONTACT	GOALS FOR STUDENT LEARNING	ASSESSMENT AND RESULTS	NEXT STEPS
Health Studies (continued)			<ul style="list-style-type: none"> • Created an online series: BHS 310 (Pathways), BHS 496 (Fieldwork), and BHS 495 (Senior Portfolio), which aligns well with the nature of the ePortfolio required in BHS 495 and with how the assignments are completed for all courses (primarily electronically online). The online format also provides more flexibility for students to take this course with other non-online or hybrid courses, as well as addressing a campus space shortage. In addition, this change allows the courses to be taught several times during the year. • Split BHS 499, Senior Portfolio, into two courses--BHS 495 (Senior Portfolio) and BHS 496 (Fieldwork) because the program determined that a 5-credit course combining fieldwork and portfolio was not feasible, given the number of students and the complexity of organizing substantial experiential learning within the limited time of the course. • Added BHS 300 to complete the 10-credit writing requirement for students • Added BHS 302 to fulfill the diversity requirement • Changed concentration titles in two areas (Local and Global changed to Health and Society and Community Engagement changed to Community Health Intervention and Practice) and shifted courses that qualify for each area in order to create clearer distinctions between the areas • Changed the following prerequisites to better sequence students in the BHS program: <ul style="list-style-type: none"> ○ BHS 302 – Prerequisite of BHS 201 ○ BHS 403 – Prerequisite of BHS 201, BHS 300, and Statistics 	

NURSING AND HEALTH STUDIES

MAJOR	CONTACT	GOALS FOR STUDENT LEARNING	ASSESSMENT AND RESULTS	NEXT STEPS
Health Studies (continued)			<ul style="list-style-type: none">○ BHS 310 – Prerequisite of BHS 201○ BHS 496 – Prerequisite of BHS 310○ BHS 495 – Prerequisite of BHS 201, BHS 300, BHS 496 (must be taken prior or concurrently)● Changed grade minimum policy, as follows:● Core Courses – 2.0 minimum● Concentration Area and Elective Courses – 0.7 minimum● Statistics – 1.7 minimum	

NURSING AND HEALTH STUDIES

MAJOR	CONTACT	GOALS FOR STUDENT LEARNING	ASSESSMENT AND RESULTS	NEXT STEPS
Nursing (BSN)	<p>Selina Mohammed selinam@uw.</p> <p>Jamie Shirley jamiogs@uw.</p>	<p>The BSN Program prepares the graduate to:</p> <ul style="list-style-type: none"> • Integrate concepts from the Arts and Sciences in promoting health and managing complex nursing care situations. • Apply leadership concepts, skills, and decision making in the provision, and oversight of nursing practice in a variety of settings. • Translate principles of patient safety and quality improvement into the delivery of high quality of care. • Appraise, critically summarize and translate current evidence into nursing practice. • Integrate knowledge, processes, and skills from nursing science; information and patient care technologies; and communication tools to facilitate clinical decision-making, and the delivery of safe and effective nursing care. • Describe the effects of health policy, economic, legal, political, and socio-cultural factors on the delivery of and advocacy for equitable health care. • Demonstrate effective professional communication and collaboration to optimize health outcomes. • Deliver and advocate for health promotion and disease prevention strategies at the individual, family, community and population levels. • Demonstrate value-based, professional behaviors that integrate altruism, autonomy, integrity, social justice and respect for diversity and human dignity. • Demonstrate critical thinking, clinical decision making, and psychomotor skills necessary for the delivery of competent, evidence-based, holistic, and compassionate care to patients across the life span. 	<p>Assessment of Student Learning</p> <ul style="list-style-type: none"> • Classroom assessment, various methods • Course evaluations • Peer review of teaching • Clinical evaluations in Community Health course • Annual review of student progress based on grades and “Essential Behaviors” • Senior portfolios • Student self-assessment and faculty assessment through use of senior portfolios • Exit surveys of graduates • Community partner feedback • Annual review of program evaluation data by BSNCC, including assessment of the outcomes of students who complete the program against specific benchmarks to address areas of curricular change • A tri-campus BSN Coordinating Committee evaluates the BSN degree program and reviews the curriculum. <p>Curricular Assessment/Change</p> <ul style="list-style-type: none"> • Based on collaborative conversations with students, community partner schools, clinical sites, and employers, revised the BSN curriculum to begin in summer, 2016. This new curriculum more closely addresses the latest AACN BSN Essentials, as well as the changing health care landscape. • Added the First-Year Entry BSN program in partnership with Everett Community College, which increases access to nursing education for high school students and is designed to provide a seamless pathway from pre-requisite completion through ADN to achievement of BSN 	<p>As the new curriculum is implemented in the coming year, the program will be assessing the effectiveness of the new curriculum with a more robust student self-assessment portfolio process, benchmark evaluations, and faculty collaborations to ensure consistent scaffolding of student learning.</p>

SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM)

MAJOR	CONTACT	GOALS FOR STUDENT LEARNING	ASSESSMENT AND RESULTS	NEXT STEPS
Biology		<ul style="list-style-type: none"> • Content: students will understand basic biological processes and principles, integrate disparate areas of biology, and begin developing an emphasis in one or more areas through their research experience. • Research: students will understand the scientific method and use that understanding to conduct and communicate biological research in collaboration with faculty mentors. • Critical thinking: students will be able to apply qualitative and quantitative methods to critically evaluate and interpret evidence. • Communication: Students will be able to communicate biological concepts effectively in oral, visual and written presentations. Students should communicate the results of original research within and/or outside the University. 	<p>Assessment of Student Learning</p> <ul style="list-style-type: none"> • Classroom assessment, various methods • Course evaluations • Peer review of teaching • Enrollment trends (program-wide, individual courses) • Faculty self-evaluations <p>Curricular Assessment/Change The Biology major was launched in 2010. As a result of assessment of enrollment trends and qualitative data on progress-to-graduation, the program tried to eliminate bottlenecks and perceived shortcomings in the program without compromising learning goals, instituting a new curriculum starting in Fall 2015. As a result:</p> <ul style="list-style-type: none"> • Changed courses required including deletion of some requirements and offering options rather than single-course requirements • Changed the number of electives required • Grouped electives into areas and required students to take electives from two of three different areas 	After five years of rapid growth, the program is currently articulating learning outcomes for Biology. The faculty will use these to design appropriate assessments.

SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM)

MAJOR	CONTACT	GOALS FOR STUDENT LEARNING	ASSESSMENT AND RESULTS	NEXT STEPS
Chemistry		<p>For both BA & BS degrees:</p> <ul style="list-style-type: none"> • Develop a rigorous understanding of the atomic and molecular nature of all matter, including atomic structure, bonding, reaction energetics, equilibrium and other related topics. • Develop a rigorous understanding of the interactions of matter with energy and light. • Thoroughly understand the quantized nature of the atom along with atomic and molecular concepts and processes related to it. • Apply the appropriate mathematical principles and concepts to solve quantitative chemical problems on a wide array of topics. • Be knowledgeable about safe laboratory practices, applying them consistently in different situations, and be able to critically analyze and evaluate the data and results procured from practical lab work. • Effectively communicate in oral and written forms, making use of the correct terminologies and vocabulary, to scientific and non-scientific audiences. • Have a thorough understanding of ethical behavior and practices as applied to various STEM fields and disciplines. <p>Additional goal for BA degree:</p> <ul style="list-style-type: none"> • Be able to develop tools and create an environment that effectively facilitates instruction of chemistry in particular and of STEM subjects in general. 	<p>Assessment of Student Learning</p> <ul style="list-style-type: none"> • Classroom assessment, various methods including exams, lab exercises, papers and presentations and course overall • Course evaluations • Peer review of teaching • Exit interviews • Focus groups • Student retention in major • Research success (number of student presentations at conferences, number of student co-authored abstracts and publications and so on) • External national assessment by use of standardized American Chemical Society (ACS) exams in Chemistry • Alumni surveys <p>Curricular Assessment/Change No major changes; the Chemistry major began in 2014.</p>	<p>Program evaluation and formal approval by American Chemical Society.</p>

SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM)

MAJOR	CONTACT	GOALS FOR STUDENT LEARNING	ASSESSMENT AND RESULTS	NEXT STEPS
Chemistry (continued)		Additional goals for BS degree: <ul style="list-style-type: none">• Display working knowledge and practical skills in the use of modern lab instrumentation.• Be able to design research projects and apply the theoretical knowledge and practical skills towards problems of social and human significance.• Apply the skills gained in chemistry to a variety of related subjects in the physical sciences and in other fields and disciplines.		

SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM)

MAJOR	CONTACT	GOALS FOR STUDENT LEARNING	ASSESSMENT AND RESULTS	NEXT STEPS
<p>Computer Engineering</p>		<ul style="list-style-type: none"> • An ability to apply knowledge of mathematics, science, and engineering • An ability to design and conduct experiments, as well as to analyze and interpret data • An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability • An ability to function on multi-disciplinary teams • An ability to identify, formulate, and solve engineering problems • An understanding of professional and ethical responsibility • An ability to communicate effectively • The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context • A recognition of the need for and an ability to engage in life-long learning • A knowledge of contemporary issues • An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice including remote interaction through the Internet 	<p>Assessment of Student Learning</p> <ul style="list-style-type: none"> • Classroom assessment, various methods including exams, lab exercises, papers and presentations and course overall • Course evaluations • Peer review of teaching • Data collection of representative courses in the major to assess whether learning goals are being met • Exit interviews/surveys of graduating students <p>Curricular Assessment/Change The program just recently graduated its first student.</p>	<p>The program is applying for ABET accreditation of and, as part of the effort, is creating a self-study of the program. The self-study will be completed in 2016, and as part of the study, faculty are designing additional assessments (e.g., surveys of alumni and employers and graduate schools that receive our graduates).</p>

SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM)

MAJOR	CONTACT	GOALS FOR STUDENT LEARNING	ASSESSMENT AND RESULTS	NEXT STEPS
<p>Electrical Engineering</p>		<ul style="list-style-type: none"> • To become engineers who can assume leadership roles, technical or managerial, in electrical engineering and related fields • To become successful in pursuing advanced studies in electrical engineering and related fields • To become contributing citizens who are conscious of ethical and societal responsibilities • To become effective communicators in professional and non-professional environments and be able to function as a team member <p>In addition, the EE degree program is committed to provide an educational experience through which its students will have attained upon graduation the following ABET outcomes:</p> <ul style="list-style-type: none"> • An ability to apply knowledge of mathematics, science, and engineering • An ability to design and conduct experiments, as well as to analyze and interpret data • An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability • An ability to function on multi-disciplinary teams • An ability to identify, formulate, and solve engineering problems • An understanding of professional and ethical responsibility • An ability to communicate effectively • The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context • A recognition of the need for, and an ability to engage in life-long learning 	<p>Assessment of Student Learning</p> <ul style="list-style-type: none"> • Classroom assessment, various methods including exams, lab exercises, papers and presentations and course overall • Course evaluations • Peer review of teaching • Exit surveys • Focus groups of graduates • Assessment of outcomes via those courses that directly map onto one or more of the outcomes. For example, BSTEM 371, The Business of Technology, maps onto the outcome that focuses on “understanding of professional and ethical responsibility.” During the annual assessment, the performance of students in that class with respect to that outcome is measured by grades on specific assignments, is reviewed by the faculty, and, if targets are not met, possible measures are suggested to remedy the situation. <p>Curricular Assessment/Change</p> <ul style="list-style-type: none"> • As a result of assessment of entering students’ math skills, instituted a math skills assessment test for all incoming students to be taken during their summer orientation. Those students found lacking were asked to take a math refresher class to bring up their skills. • Reworking two courses, BEE 331 and BEE 332 • Reviewing the credits of all elective courses 	

SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM)

MAJOR	CONTACT	GOALS FOR STUDENT LEARNING	ASSESSMENT AND RESULTS	NEXT STEPS
Electrical Engineering		<ul style="list-style-type: none">• A knowledge of contemporary issues• An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice including remote interaction through internet• An ability to apply knowledge of probability and statistics in applications appropriate to electrical engineering		

SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM)

MAJOR	CONTACT	GOALS FOR STUDENT LEARNING	ASSESSMENT AND RESULTS	NEXT STEPS
<p>Mathematics</p>		<p>The Bachelor of Science Program in Mathematics offers flexible educational pathways to the major disciplines within the study of mathematics, including pure and applied mathematics, mathematics education and statistics. Depending on the particular track selected, graduates focus on building a strong foundation for graduate school, professional school, industry business, government, and teacher preparation. The Departmental student learning objectives vary depending on the level of course and whether the student plans to major or minor in mathematics. Fundamental concepts at the core of the mathematics program are:</p> <ul style="list-style-type: none"> • Development of critical thinking • Development of problem solving skills • Development of mathematical computing • Development of statistical skills • Development of modeling skills • Development of proof writing skills 	<p>Assessment of Student Learning</p> <ul style="list-style-type: none"> • Classroom assessment, various methods • Course evaluations • Peer review of teaching <p>Curricular Assessment/Change</p> <ul style="list-style-type: none"> • Received approval to begin offering the minor in mathematics, effective Autumn 2015 • Reviewed and revised selected courses • Developed new courses dedicated to ensuring that the students have educational pathways to the major disciplines within the study of mathematics 	

SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM)

MAJOR	CONTACT	GOALS FOR STUDENT LEARNING	ASSESSMENT AND RESULTS	NEXT STEPS
<p>Mechanical Engineering</p>		<p>In ME our learning goals are in line with those recommended by our ABET accreditation agency:</p> <ul style="list-style-type: none"> • Ability to apply knowledge of mathematics, science, and engineering • Ability to design and conduct experiments, as well as to analyze and interpret data • Ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability • Ability to function on multidisciplinary teams • Ability to identify, formulate, and solve engineering problems • Understanding of professional and ethical responsibility • Ability to communicate effectively • The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context • Recognition of the need for, and an ability to engage in life-long learning • Knowledge of contemporary issues • Ability to use the techniques, skills, and modern engineering tools necessary for engineering practice 	<p>Assessment of Student Learning</p> <ul style="list-style-type: none"> • Classroom assessment, various methods • Course evaluations • Peer review of teaching • Capstone design projects • ME Advisory Board assessment participation in the senior engineering capstone design projects • Annual course review report also used for the ABET assessments for each course taught that year, which includes instructor overview/observations of course-specific objectives and specific actions to improve • Assess student learning outcomes in two back-to-back assessment cycles that focus on courses. For example, a student outcome may be assigned to three courses, which are formally assessed, using grading rubrics containing performance metrics. Continuous improvement for the overall program is measured by comparing first and second cycle assessments. • Feedback/assessment from employers of students doing internships at the end of their junior year • Exit surveys <p>Curricular Assessment/Change</p> <p>The ME program is in its second year and has made the following changes to the undergraduate curriculum:</p> <ul style="list-style-type: none"> • Required Intro to Differential Equations and Multivariable Calculus prior to application to ME • Changed the names of several engineering courses to reflect common names used in other universities and colleges • Required a minimum grade of 2.0 in all ME courses for graduation 	

SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM)

MAJOR	CONTACT	GOALS FOR STUDENT LEARNING	ASSESSMENT AND RESULTS	NEXT STEPS
<p>Mechanical Engineering (continued)</p>			<ul style="list-style-type: none"> • Changed the number of credits for engineering electives from 5 to 4 to allow for an additional elective to be taken • Introduced 9 engineering electives (ME majors required to take 3 or 4, research credit can count for 1), as follows: <ul style="list-style-type: none"> ○ BME 431 Acoustics I ○ BME 432 Acoustics II ○ BME 493 Space Operations Systems Engineering ○ BME 493 Machining Fundamentals (limited to 10 students—will be in machine shop DH270A) ○ BME 493 Introduction to Biomaterials ○ BME 493 Mechatronics ○ BME 493 Introduction to Ocean Engineering ○ BEE 381 Electric Power Generation ○ 9. BEE 440 Electronic Test and Measurement 	

SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM)

MAJOR	CONTACT	GOALS FOR STUDENT LEARNING	ASSESSMENT AND RESULTS	NEXT STEPS
<p>Physics</p>		<p>For both the BA and BS degrees:</p> <ul style="list-style-type: none"> • Apply critical thinking skills and quantitative reasoning abilities to the physical world. • Apply the principles and theories of physics to a variety of areas in the sciences and other evidence-based endeavors. • Understand the history, organization and underlying principles of physics and the application of these principles to the physical world. • Anticipate and assess trajectories of technological change in a variety of industries using physics, along with critical thinking abilities developed in physics courses. • Understand the ethical implications of physics in nature and society. • Teach physics in secondary schools. <p>Additional goal for the BS degree:</p> <ul style="list-style-type: none"> • Utilize thermodynamics, modern physics and other physics principles in the design and optimization of new technologies. 	<p>Assessment of Student Learning</p> <ul style="list-style-type: none"> • Classroom assessment, various methods including exams, lab exercises, papers and presentations and course overall • Course evaluations • Peer review of teaching • Pre- and post-course surveys for individual classes • Pre- and post-major surveys <p>Curricular assessment/change No major changes</p>	