3.B - Core Component 3.B

The institution demonstrates that the exercise of intellectual inquiry and the acquisition, application, and integration of broad learning and skills are integral to its educational programs.

1. The general education program is appropriate to the mission, educational offerings, and degree levels of the institution.
2. The institution articulates the purposes, content, and intended learning outcomes of its undergraduate general education requirements. The program of general education is grounded in a philosophy or framework developed by the institution or adopted from an established framework. It imparts broad knowledge and intellectual concepts to students and develops skills and attitudes that the institution believes every college-educated person should possess.
3. Every degree program offered by the institution engages students in collecting, analyzing, and communicating information; in mastering modes of inquiry or creative work; and in developing skills adaptable to changing environments.
4. The education offered by the institution recognizes the human and cultural diversity of the world in which students live and work.
5. The faculty and students contribute to scholarship, creative work, and the discovery of knowledge to the extent appropriate to their programs and the institution's mission.

Argument

3.B.1. ISU capitalizes on its land-grant heritage to create, share and apply knowledge to meet the changing demands of a large and rapidly changing diverse global community. The general education expectations of the institution contribute to ISU's goal to prepare students to make a difference in the world.

Through recurring conversations and strategic planning at the university, college, department and program levels, faculty engage in dialogue about essential learning outcomes for the twenty-first century, and what is necessary to position ISU graduates to be successful as life-long learners, as members of the workforce and as leaders in their communities. Answers to those questions are visible in our general, and discipline-specific, education programs.

ISU, like many land-grant, high research intensive universities, is decentralized in structure. Therefore, general education requirements are overseen by each of the individual colleges rather than centrally. Although the curricula are managed at the college-level for bachelor degrees, there are common requirements across the colleges that align with what other institutions might consider general education requirements. As documented in the Catalog, there are University requirements in the area of international perspectives, U.S. diversity, communication, and information literacy. In addition, a review of all curriculum and 4-year plans within the Catalog shows that all Colleges aim to prepare students to address "our common, global challenges" through distributed coursework in the humanities/social sciences, mathematics, and physical/biological sciences so that they understand the tools used by diverse disciplines to "identify, formulate and solve problems" (see Outcome 2 below). The table below shows the fewest number of credits required by a degree program in each area by academic college.

	Area of Coursework/Minimum Number of Credits Required for a Degree Program

College	International Perspectives	U.S. Diversity	Communication	Information Literacy	Humanities and Social Sciences	Math, Physical and Biological Sciences
Agriculture and Life Sciences	3	3	9	1	9	17
Business	3	3	12	1	21	12
Design	3	3	9	1	6	6
Engineering	3	3	6	1	6	23
Human Sciences	3	3	9	1	15	9
Liberal Arts and Sciences	3	3	6	1	21	11

3.B.2. Although outcomes are maintained within the academic colleges, ISU's Faculty Senate Student Outcomes Assessment Committee has identified six broadly stated learning outcomes that are held in common across all colleges. By the time students graduate, they will have demonstrated ability to:

1. Communicate in written, oral, verbal and electronic formats
2. Identify, formulate and solve problems
3. Identify ethical, legal and societal responsibilities, and the domestic and global implications of decisions made
4. Locate, evaluate and use information
5. Assess the impacts of cultural diversity on the function of US society
6. Assess how cultures and societies around the world are formed, sustained, and evolve

These outcomes reflect both ISU's mission and the intent of each college. In accordance with the Faculty Handbook, each college specifies its own learning outcomes, consistent with these overarching requirements, and communicates them publicly via websites, syllabi and the Catalog.

General education-type courses in combination with courses required for the major support student achievement of these outcomes in common and additional college-level outcomes. In addition a limited number of university-level requirements have been adopted to ensure that students develop and demonstrate the competencies articulated in several of the above student outcomes.

Communication Proficiency *(maps to outcomes 1, 3 and 4)*

ISU strives to prepare graduates to communicate with confidence and integrity in the varied contexts of their academic, professional, and civic lives. This is achieved through the following principles:

1. Communication instruction and practice are distributed over the student's undergraduate experience, both in and out of the classroom
2. Communication instruction and practice are distributed across the curriculum, both in communication courses, and courses in the student's major
3. Active learning and higher-order thinking are fostered through communication
4. Faculty across the university share responsibility for the student's progress in communication practices
5. Both faculty and students engage in ongoing assessment for continuous improvement of the student's communication practices

By applying these principles across curricula, graduates develop competency in four areas of communication: written, oral, visual and electronic (WOVE). Students begin with a two-course introductory sequence: ENGL150-Critical Thinking and Communication, and ENGL250-WOVE Composition, normally taken in the first and second years. Learning Outcomes are posted on the web; assessment rubrics are in Appendix B of this recent assessment Report on ISUComm Foundations Courses.

Academic programs must specify communications learning outcomes and must incorporate learning experiences into the program beyond the two introductory courses so that communication outcomes are met.

Information Literacy Proficiency *(maps to outcome 4)*

In our Information Age it is essential that students can locate, evaluate and use information in order to grow intellectually and professionally in college and beyond. All undergraduates are expected to learn how scholarly information is produced, organized and accessed and to develop the critical thinking skills to find, evaluate and ethically use this information. The Library 160 course serves as the foundation for meeting this requirement.

U.S. Diversity, International Perspectives Requirements *(Maps to outcomes 3, 5, and 6)*
To prepare students to address our common global challenges ISU must prepare them to be responsible citizens and professionally effective in a culturally diverse global community. All undergraduates fulfill graduation requirements in two areas: U.S. Diversity and International Perspectives. Students complete 3 credits of course work (or the equivalent in some alternative academic experience) in each area; outcomes for these requirements are defined in the Catalog.

Faculty proposing a course to meet the International Perspectives or U.S. Diversity requirement must delineate 1) how the course will achieve the expected outcomes and 2) how learning outcomes will be assessed. Courses are reviewed and approved by departmental and college curriculum committees.

3.B.3. ISU degree programs are developed to provide students the opportunity 1) to collect, analyze and communicate information; 2) to master modes of inquiry and creative work; and 3) to be adaptive in addressing complex problems or issues.

1) Collecting, analyzing and communicating information aligns with the Communication Proficiency Requirement and the Information Literacy Requirement. It also directly aligns with outcomes in

common number 1 (communication) and 4 (information) (see 3.B.2.)

2) Mastering modes of inquiry and creative work align with the outcomes in common number 2 (solve problems) and 3 (complex decisions) (see 3.B.2.)

3) The outcomes in common as a whole (preparing students to understand global, diversity, ethical issues, to communicate and solve problems, etc.) all align with developing students' abilities to address complex problems or issues in a changing global environment.

Each college's approach for assessing success in achieving these and other outcomes is provided in 4.B. However, at an institutional level, the extent to which students are engaged in educational experiences that achieve these outcomes can be examined via the four National Survey of Student Engagement Indicators for Academic Challenge: *higher order thinking, reflective and integrative learning, learning strategies and quantitative reasoning*. In all four areas, ISU first-year students and seniors rank themselves slightly above to slightly below the mean of Carnegie peer institutions, ranging from 29% to 37% for first-year students, and 30% to 37% for seniors, who self-describe as being *often or very often* engaged in these forms of deep learning and creative work.

In addition, the majority of ISU's undergraduate programs (78%) require students to synthesize and demonstrate knowledge and skills gained across these broad outcomes in a capstone course or experience. Whether it be a senior design course in engineering, or a required internship experience in culinary science, these capstone curricular requirements allow students to demonstrate their acquisition of these key outcomes.

3.B.4. ISU recognizes that all students must be able to successfully work, live, and contribute in a diverse and global society. ISU prepares students to be responsible citizens and professionally effective in a culturally diverse global community. As highlighted in 1.C.3, to support this goal, the University provides a diverse campus community, broad ranging student organizations and programs, and curricular requirements that are supportive of diversity and inclusion. From a curricular standpoint, all undergraduates must fulfill graduation requirements in two areas: U.S. Diversity and International Perspectives. ISU offers a broad range of courses and alternative experiences to meet these requirements (including an extensive Study Abroad program). Courses which have been approved to meet the U.S. Diversity or International Perspective requirement are identified for students in the Schedule of Classes and the Catalog. There are over 170 courses identified for U.S. Diversity and over 300 courses offered to meet International Perspectives.

To successfully meet the requirements, students in their coursework or alternative experiences must achieve at least two of the learning outcomes identified for the requirement.

For U.S. Diversity, students will be able to:

- Articulate how their personal life experiences and choices fit within the context of the larger mosaic of U.S. society, indicating how they have confronted and critically analyzed their perceptions and assumptions about diversity-related issues
- Analyze and evaluate the contributions of various underrepresented social groups in shaping the history and culture of the U.S.
- Analyze individual and institutional forms of discrimination based on factors such as race, ethnicity, gender, religion, sexual orientation, class, etc.
- Analyze the perspectives of groups and individuals affected by discrimination

- Analyze how cultural diversity and cooperation among social groups affect U.S. society

For International Perspectives, students will be able to:

- Analyze the accuracy and relevancy of their own worldviews and anticipate how people from other nations may perceive that worldview
- Describe and analyze how cultures and societies around the world are formed, are sustained, and evolve
- Analyze and evaluate the influence of global issues in their own lives
- Describe the values and perspectives of cultures other than their own and discuss how they influence individuals' perceptions of global issues and/or events
- Communicate competently in a second language

Many students will meet the International Perspectives requirement through participation in study abroad experiences. These experiences allow students to immerse themselves in another culture. In 2014-2015, 1,633 ISU students studied abroad for academic credit on every continent of the world, including 12 students who studied in Antarctica.

3.B.5.

Faculty

As an AAU research university, the Faculty Handbook (Chapter 5) sets the expectation that faculty are engaged in scholarship and research.

Institutional Research uses data from Academic Analytics to assess classical faculty research productivity. Results show that ISU is comparable to its 11 peer institutions in terms of scholarly productivity, showing a FSPI of +0.1, comparable to a range of -0.1 to +0.4 for peers. Only California-Davis, Illinois and Wisconsin post values at 0.3 to 0.4.

As evidence of pursuit of discovery and scholarship, the ISU Fact Book shows sponsored research income ranging from $167.1 million to $226.4 million annually between 2004 and 2014. Annually, for the past 10 years, between 374 and 408 active patents have been held by ISU; between 15 and 33 new patents have been awarded annually during this 10-year period.

The Digital Repository @ ISU provides free, open access to scholarly and creative works, research, publications and reports by ISU's faculty, students, staff, and administrative units. Via internet, readers worldwide can access a range of content from ISU. The Repository is managed by the ISU Library, with funding support from the Office of the Vice President for Research. The format is very dynamic, user-friendly and helps users access information from many-thousands of pieces of work, from 821 disciplines, and in real time.

Students

Expectations of graduate students to contribute to the body of scholarly works are outlined in the Graduate Handbook. Undergraduate students participate in scholarly and creative work in a variety of ways, depending upon their major. For example, all meteorology students complete a senior thesis as a part of a required senior research course (MTEOR 499), while other students complete capstone design projects (e.g. electrical engineering students complete a two semester senior design project via EE 491and EE 492). Of the 108 undergraduate degree programs, 84 (78%) require students to

complete a capstone experience or course. These capstone experiences regularly require students to synthesize knowledge gained in previous courses/experiences for a culminating creative project or research/internship experience.

Although scholarly work by undergraduates happens throughout campus, it is best evidenced through the annual Symposium on Undergraduate Research and Creative Expression. Since 2007, the Symposium has provided undergraduates from all disciplines an opportunity to share their research through conference-style presentations. The symposium is open to all undergraduate students. In 2015, this symposium included 126 applications and 123 accepted presentations. In all, 141 students representing 47 different majors presented their research either as an oral presentation or in poster format. Symposium proceedings will be included in the Digital Repository pending IRB approval for this and future years. With permission, students' abstracts, presentation and poster files are uploaded to the Repository, allowing them to be searched and accessed online, and allowing students to build electronic research portfolios.

Based on the success of the undergraduate symposium, the Graduate and Professional Student Senate in 2014 initiated an annual Graduate and Professional Research Conference. This one-day symposium provides graduate students professional development opportunities, including the opportunity to share their research. The 2015 symposium included 456 participants from all colleges (including Veterinary Medicine); 184 students presented their research.

Sources

- 15-16 Catalog Colleges and Curricula Section
- 2015 GPSS Research Conference Report
- 2015 UG Research SymposiumAbstracts
- 2015 UG Research SymposiumSchedule
- Fact Book Patents Licenses
- Fact Book Sponsored Funds
- Faculty Handbook - Chapter 10.7.2 - Student Outcomes
- Faculty Handbook - Chapter 5 - Evaluation and Review
- Faculty Scholarly Productivity Peer 11
- Graduate College Handbook pg 62-63
- Inter-Persp Course Request Form
- ISU Comm Foundation Outcomes Assessment
- ISU Comm Learning Outcomes Website Content
- ISU Outcomes In Common 2013
- Library 160 Syllabus
- NSSE 2013 Academic Challenge First-Year
- NSSE 2013 Academic Challenge Seniors
- Schedule of Classes Diversity-Inter Persp
- Study Abroad Center Self-Study 09-2015
- Study Abroad Data - FY_2015
- US Diversity International Perspective Guidelines
- US-Div Course Request Form