Introduction to Designing C.U.E. Inquiry Courses

*Connecting Undergraduate Education* (or *C.U.E.*), BGSU’s framework for general and liberal education, responds to Strategy #1 from *Charting Our Future*, the strategic plan. In so doing, C.U.E. creates intentional links and connections throughout students’ undergraduate learning experiences with an overarching goal to produce engaged, active learners who purposefully work to achieve the University and program learning outcomes. C.U.E. provides a comprehensive four-year plan to facilitate students’ progress through their college careers as they make connections beginning with their foundational courses including BGSU 1000, foundations of critical and creative thinking, and the general studies writing courses, and then build upon them in their inquiry and problem solving sequence courses right up until their culminating capstone experience. C.U.E. plus the major program educational experiences prepare liberally educated BGSU graduates who demonstrate transferable intellectual and practical skills, personal and social responsibility, and skills to integrate, apply and reflect on the complexity, diversity, and change they can to expect to encounter in the 21st Century.

**C.U.E. Inquiry Course Learning Outcomes**

Through a sequence of three inquiry courses, one from each of three domains, BGSU students explore broad, well-structured questions and problems related to a common inquiry theme (i.e., *people and environments*, *life and purpose*, or *transformations and consequences*). Each course is grounded in the key concepts and principles of an academic discipline which is associated with one of the general domains (i.e., *Humanities and the Creative Arts*, *Individuals and Society*, or *Science and Technology*). It is the goal and purpose of each inquiry course to facilitate student achievement of the overarching inquiry learning outcomes using learner-centered, active learning pedagogies that elicit student discovery and construction of knowledge within that discipline.

Upon successful completion of an inquiry course students will deploy knowledge in the form of concepts and principles of a discipline as the means to:
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• apply one or more appropriate methods of inquiry to a relatively well structured question or problem related to the inquiry sequence theme using both in- and out-of-classroom experiences;
• select and synthesize in-depth information on core concepts and principles from relevant sources representing various points of view/approaches within that mode of inquiry;
• analyze evidence to reveal patterns, differences, or similarities related to the well structured contemporary questions or problems drawn from both in- and out-of-classroom experiences; and
• draw logical conclusions resulting from evidence-based inquiry findings while discussing limitations and implications of the evidence and mode of inquiry.

These inquiry learning outcomes are modified within each domain so that students can fully appreciate the unique characteristics of inquiry within that domain while being able to compare and contrast other methods of inquiry used in other domains and disciplines.

What Makes C.U.E. Inquiry Courses Unique?

C.U.E. Inquiry courses have unique and broader purposes and orientation than many discipline-specific content courses. As a result, the course design process that includes identifying integrated learning outcomes, design formative assessment and evaluation requirements, and create active learning instructional strategies, will be different from what many instructors previously have experienced. This “inquiry toolkit” is designed to help instructors successfully design a C.U.E. inquiry course and then subsequently to skillfully implement it.

Connected by themes. One important way that Inquiry sequence courses differ from most other disciplinary courses is their connection to one of three identified inquiry themes for 2011. The inquiry themes (i.e., people and environments, life and purpose, transformations and consequences) each have descriptors to assist instructors and students to better grasp the complexities of that theme and to enhance their ability to identify appropriate questions and problems that serve to make connections within and among similarly-themed courses. Theme descriptors can be located at http://www.bgsu.edu/cue/page88020.html
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**Integrated course design focused on inquiry skills.** L. Dee Fink, author of *Creating Significant Learning Experiences* (2003), offers a useful course design template that we recommend to instructors for designing their Inquiry courses. We have posted a .pdf copy of Fink’s *A Self-Directed Guide to Designing Courses for Significant Learning* (2004) (36 pages) on the CUE website as a reference for designing Inquiry courses. In our own “inquiry toolkit” we summarize some of Fink’s recommended steps as well as identify the unique aspects of Inquiry courses.

**Other course design resources.** In addition to Fink’s model, there are a number of other course design references that are available and recommended as resources for instructors. The various course design references (e.g., NAGT On the Cutting Edge project) all are built upon a constructivist approach to learning: that students must actively construct their own knowledge in order to fully and deeply understand and engage disciplinary content and skills. We provide URLs to some of those resources on the C.U.E. website.

**Model for designing Inquiry courses.** A successful Inquiry course requires attention to integrating four primary foundational design elements:

- consider situational factors
- identify and integrate inquiry learning outcomes
- design formative feedback and assessment activities
- create active teaching/learning activities

**Examine situational factors.** The C.U.E. framework already constrains a number of situational factors for Inquiry courses such as the general and specific contexts for the course. All inquiry courses use one of three themes (i.e., *people and environments*, *life and purpose*, or *transformations and consequences*) to provide a context for inquiring about problems or questions that inquiry courses will address across the three domains and to organize the way that disciplinary course content will assist students acquire inquiry skills. Other situational factors to consider may include the class section size, the type of class room environment, availability of technology, and structure of the course itself (e.g., labs, recitation sessions).

*Important situational factors to consider for this course include:*

- Inquiry theme(s)
- Section size
- Presence of labs or recitations
- Availability of technology
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- Type of classroom environment and furniture

**Identify learning outcomes.** The learning outcomes for inquiry courses present a unique challenge to course designers. Regardless of the disciplinary course content, that course content must be designed to all students to achieve the specified overarching learning outcomes and intellectual skills (e.g., inquiry, critical and constructive thinking, effective communication, active engagement). Because the course content and inquiry theme may vary from section to section, the broad overarching outcomes need to be integrated in a course-specific manner that makes sense to instructors and students alike.

*Questions to flesh out and integrate the inquiry, critical thinking, and communication learning outcomes with course content include:*

- What specific methods and modes of inquiry are unique to this domain and how can the course content best be employed to help students actively acquire inquiry skills?
- What are the key concepts and principles associated with the content that students require in order to become skilled in domain-specific inquiry?
- What analysis techniques commonly allow scholars to adopt evidence-based inquiry in this particular domain and discipline?
- How is evidence-based information most commonly employed to make meaning of inquiry and analysis in this discipline and domain?
- How will students be required to actively construct information about the course content using critical thinking and higher order thinking?
- How will students communicate their learning orally and in writing in the course?

**Design formative feedback and assessment.** Unlike many courses, feedback and assessment in inquiry courses must be “forward looking” and “educative” in nature (see Fink, 2003, 2004). Inquiry courses also must allow students to generate artifacts and reflective self evaluations appropriate for inclusion in each student’s BG learning portfolio. This means that typical grading point systems and multiple choice tests will not be particularly appropriate for inquiry courses. Feedback (i.e., formative evaluation that supports and enhances student learning) along with other assessment procedures must directly focus on the degree to which students demonstrate achievement of the course learning outcomes (both overarching intellectual skills as well as course-specific content). The
unique types and modes of inquiry will require many instructors learn new assessment skills through professional development opportunities. 

**Questions aimed at devising direct assessment of inquiry learning outcomes include:**

- How will instructors and students alike know the degree to which students have achieved the inquiry learning outcomes?
- What modes of forward looking authentic assessment (e.g., real life inquiry projects, reflective journals) will allow direct assessment of student learning?
- How will assessment procedures provide formative feedback to augment student learning?
- How will students be required to provide reflective self evaluations of their work as a means for increasing student ownership of their learning?

*Create active teaching/learning activities.* The design of teaching and learning activities (a.k.a., pedagogy) in inquiry courses occurs once the course designer has addressed the previous three elements of situational factors, learning outcomes, and feedback/assessment. Pedagogy in all inquiry courses will adopt one of a variety of constructivist, active learning approaches that integrate course content into achievement of inquiry, critical thinking, and communication skills. These types of pedagogy may be quite different from those teaching approaches that many instructors have used in the past.

One simple model (Fink, 2003; 2004) identifies three crucial elements that comprise any form of true active learning: 1) information and ideas, 2) engaged experiences, and 3) reflective activities. Inquiry courses encourage use of a broad range of active learning pedagogies. As with assessment skills, professional development opportunities may be needed to help instructors appreciate how to employ new types of teaching/learning in inquiry courses.

Questions to assist in designing teaching/learning activities in inquiry courses include:

- How will in-class and out-of-class learning actively involve student inquiry and exploration of course content as well as inquiry and analysis processes?
- How will students be encouraged to actively access information and ideas related to course content both inside and outside of class without primarily relying on instructor lecture activities?
• How will students become responsible for and own their learning?
• What kinds of individual and group reflective self evaluative activities will help students gain awareness of their own learning?

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SPECIFIC INQUIRY LEARNING OUTCOMES FOR HUMANITIES AND THE CREATIVE ARTS

Using the inquiry theme indicated previously, an inquiry sequence course within the *Humanities and Creative Arts* domain acquaints students with humanistic and artistic modes of inquiry and interpretation, allowing them to explore their connection to human values. At the same time, the course assists students in integrating knowledge and making connections between the humanities/arts and other disciplines.

In addition to the broad domain goals, students successfully completing each *Humanities and Creative Arts* inquiry course construct one or more appropriate portfolio artifacts that demonstrate achievement of the following *inquiry* student learning outcomes:

• Identify and analyze issues and/or problems and frame critical questions related to the inquiry theme from artistic or humanistic points of view.
• Demonstrate familiarity with the kinds and varieties of evidence used in presenting and evaluating humanistic and artistic claims, works, and reasoning; how that evidence is acquired and used; the assumptions upon which it rests, and the validity of the reasoning following from it.
• Articulate value judgments inherent in humanistic or artistic claims/texts/works and demonstrate how personal, societal, or aesthetic factors shape those claims/texts/works and responses to them.
• Draw logical conclusions from the results of humanistic or artistic inquiry.

SPECIFIC INQUIRY LEARNING OUTCOMES FOR INDIVIDUALS AND SOCIETY

Using the primary theme identified for this course, the general aim for an inquiry course within the *Individuals and Society* domain is to facilitate student understanding of political, economic, historical, psychological,
cultural, geographical, and/or social processes and the modes of inquiry used to investigate these processes.

In addition to the broad domain aim, students successfully completing an *Individuals and Society* inquiry course create one or more appropriate learning portfolio artifacts that demonstrate achievement of the following student learning outcomes:

- Apply social science methods of inquiry to a well-structured question or problem related to the inquiry sequence theme;
- Synthesize information from sources across social science modes of inquiry;
- Analyze evidence to reveal patterns, differences, similarities, and competing interpretations;
- Draw logical conclusions from the evidence-based inquiry findings and recognize limitations and implications of the mode of inquiry.

**SPECIFIC INQUIRY LEARNING OUTCOMES FOR SCIENCE AND TECHNOLOGY**

Using an identified theme, an inquiry sequence course within the *Science and Technology* domain enables students to construct an understanding of the natural world and the impact of human-designed technological applications. By using the scientific inquiry process, students achieve inquiry skills by asking questions, formulating hypotheses, and making evidence-based decisions on important scientific and technological questions within the theme, while also being introduced to core concepts in the discipline that serve as a foundation for building more advanced knowledge.

In addition to the broad domain goals, students successfully completing each *Science and Technology* course create one or more appropriate portfolio artifacts that demonstrate achievement of the following inquiry student learning outcomes:

- Apply the scientific method and/or technological approaches to identify and analyze questions and problems associated with the relevant theme in the discipline in ways that contribute to their solution.
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- Gather data and evidence from various scientific sources, including both published data and data that are self generated and gathered, using multiple scientific and technological approaches.
- Analyze data and evidence using scientific reasoning processes and synthesize competing evidence-based interpretations using appropriate quantitative and qualitative approaches.
- Draw logical conclusions with reference to specific relevant evidence-based findings while demonstrating an awareness of the limitations to such conclusions.

Cultural Diversity in the U.S. learning outcomes for Inquiry Courses

In addition, if the course proposes to achieve cultural diversity in the U.S. learning outcomes, please explain the degree to which students will Articulate their own place in U.S. society through an awareness of cultural diversity in the U.S. by exploring social, economic, or historical processes that have shaped the U.S. including the social construction of gender, race, ethnicity, and other cultural differences.

Upon successful completion of an inquiry course addressing cultural diversity in the U.S., a student will:

- Demonstrate an appreciation of the multicultural nature of society in the United States along with the social, economic, and historical processes that have shaped it.
- Articulate the social construction of race and culture and other ways that people differ.
- Critically reflect upon their own places in American society as well as engage in contemporary conversations and debates on the nature of multicultural societies.

UNIVERSITY LEARNING OUTCOMES ACHIEVED THROUGH INQUIRY COURSES

Complete the tables on the template to identify the degree to which the proposed Inquiry course achieves one or more of the intellectual skills.
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(a.k.a. student learning outcomes) within each of the three major University Learning Outcome categories. If the course does not address a specific intellectual skill, simply write N/A or Not Applicable in the Explain Examples of Direct Assessment right hand column of that table. For approval, it is necessary for an inquiry course to achieve only one intellectual skill in each learning outcome category. Any learning outcome that is achieved in a course should be identified along with its assessment plan.

It is very important to identify how the achievement of each outcome is directly assessed in the course (i.e., it is not satisfactory to identify a grading point system that only indirectly addresses outcomes) and to specify the type of portfolio assessment artifact that students will generate through the course. Use of artifacts that relate to the previous inquiry outcomes are encouraged. Proposers are encouraged, but not required, to consider using the related VALUE metarubrics to identify the degree to which the intellectual skill (a.k.a. learning outcome) is achieved. The metarubrics can be located at the following URLs: <http://aacu.org/value/rubrics> or <http://www.bgsu.edu/offices/provost/value/index.html>

Completing the Inquiry Application:

After completing the Inquiry-specific requirements of the template, please attach the completed blue sheet modification that identifies the typical course syllabus elements (e.g., course aim, learning outcomes, plan for assessing outcomes, and content outline.)