

Current Draft of UG General Education committee work (2/2012)

Institutional Educational Objectives

(developed from the IIT Vision, Mission, Values and Core Principles, and the IIT Strategic Plan)

The goal of the undergraduate programs is to prepare minds and equip graduates to perform successfully in careers in an increasingly complex, global, technological world. Excellence in a discipline alone is no longer a sufficient means to such success. The institutional objectives for student learning are formed through an inter-professional focus on disciplinary strength, a professional competence, and a broad commitment to social concerns, demonstrated by the following attributes and skills.

(The outcomes listed with each attribute and skill are being expanded upon)

Attributes – first 3 met by every student, the 4th item possibly flexible by college (or maybe not?) May be difficult to assess? Use of portfolios?

- Interdisciplinary Experience - Students will develop multidisciplinary team building and teamwork practices, and become aware of complex problem-solving issues (economic, marketing, ethical, social, environmental, political, etc) and how to consider them.

- Ethics, Leadership and Teamwork (Professional Perspective) - Students will demonstrate skill in leadership, teamwork and project management practices, grounded in professional ethics and behavior.

- Global Awareness and Appreciation of Diversity - Students will recognize and appreciate cultural diversity and will have gained a global perspective grounded in the understanding of international cultures, issues, and trends linking communities around the world.

- Design, Entrepreneurship and Innovation (Weiss - I think that "Design, Entrepreneurship and Innovation" are actually applicable to any field -- I think that that's the point! Entrepreneurship is a way of thinking that goes beyond "starting one's own business" – in theory it applies to any professional in any field. Even educators can think entrepreneurially. Similarly, Design is a universal. I would like to see us continue to use these words because I think that using them sends a powerful message about the fact that we are bridging between disciplines and creating ways of thinking. Nonetheless....if people really don't like those words, I think that Innovation could remain and would capture the idea of being "leading edge." The reason I would like to use more than Innovation though is that Innovation alone is just one way of thinking.) (Flanagan: Humanities courses are not likely to include design, entrepreneurship, and innovation. Humanities are process disciplines, not outcome disciplines. There might be elements of one or the other of these outcomes, but this cannot be a requirement.)

Skills – met by every student

- Disciplinary Strength - In their field of study, students will demonstrate mastery of learning and subject matter, strength in critical reflection and methodologies, and adaptability in the face of ambiguity and change.

- Oral and Written Communication - Students will demonstrate strength in communication to and from broad constituencies and across multiple disciplines

IIT graduates will be able to:

- Produce appropriate documents for their field of study and profession.
- Prepare and deliver presentations appropriate for their field of study and profession.
- Cogently, fluently and appropriately discuss relevant issues with others in their discipline, formally and informally, and in both speech and writing.
- Speak and write with at least an entry-level fluency in the discourse practices (vocabulary, argumentation styles, acceptable evidence, etc.) of their field of study and profession.
- Recognize and adapt to different discourse practices in various other fields, especially those fields which interact significantly with the students' primary disciplines.

- Speak and write standard English with a reasonable level of fluency; comprehend spoken and written standard English with strong competence.

- Critical Thinking - Students will be able to think critically, independently, and creatively so that they can make informed and logical judgments of the arguments of others, arrive at reasoned and meaningful arguments and positions, and formulate and apply ideas to new contexts, and graduate prepared to act as good democratic citizens. (Flanagan comment: The statement as written is very vague. If the mission includes the statement “a broad commitment to social concerns” we ought to address that goal here in critical thinking attributes; hence my proposed addition)

IIT graduates will be able to:

- Demonstrate the ability to identify, analyze, question, and evaluate content as a guide to understanding and action.
- Recognize relationships among the arts, culture, and society.
- Develop new ideas by synthesizing related and/or fragmented information.
- Apply knowledge and understanding to different contexts, situations, and/or specific endeavors and/or to recognize the need to acquire new information

- Quantitative Reasoning - Students will be able to comprehend and to use quantitative and computational concepts and methods to interpret and to critically evaluate data and to effectively problem-solve in their discipline.

Mathematics Outcomes:

IIT graduates will be able to:

- Understand and apply simple quantitative models of real-life problems and societal issues.
- Perform simple mathematical computations associated with a quantitative model and interpret and draw inferences from the model.
- Understand the limitations of quantitative models and be able to determine if computed results are "reasonable".
- Use mathematical and quantitative thinking to develop an ability to solve real-life problems.
- Represent data symbolically, e.g., using graphs or tables and understand the presence of uncertainty in empirical data.
- Learn to comprehend and communicate basic mathematical concepts verbally and in written form.

Computation Outcomes

IIT graduates will be able to:

- Use computation to represent problems (i.e. abstraction) and implement solutions using an appropriate programming environment
- Use computation to demonstrate algorithmic thinking
- Utilize computational applications (i.e. models, simulation, visualization, etc)
- Explain the limitations, assumptions, and trade-offs inherent in computing models
- Analyze, critique, and discuss the ethical, legal and social implications of computing

- Scientific Reasoning - Students will be able to comprehend and to apply the basic principles of science and methods of scientific inquiry.

IIT graduates will be able to:

- Understand the nature and physical world, the process by which scientific concepts are developed and modified.
- Understand fundamental concepts of the physical, chemical, and biological processes of the world and of themselves as part of that world.
- To develop students' understanding of the principles and laboratory procedures of life and physical sciences and to cultivate their abilities to apply the empirical methods of scientific inquiry.