## ISU Competencies

Cooperative education, internship, and summer experiences help our students to develop and demonstrate the following competencies:

# ENGINEERING KNOWLEDGE

Having achieved a satisfactory level of knowledge in the relevant specialty areas of mathematics, science, and engineering

**Key Actions**:

* Knowledge of mathematics—Demonstrates a knowledge of the mathematical principles required to practice engineering in one’s specialty area
* Knowledge of science—Demonstrates a knowledge of the scientific principles required to practice engineering in one’s specialty area
* Knowledge of experimental design and analysis—Demonstrates a knowledge of the principles of experimental design and data analysis in one’s specialty area
* Knowledge of current engineering tools—Demonstrates a knowledge of the use of contemporary tools needed to practice engineering in an effective manner
* Knowledge of engineering—Demonstrates a knowledge of engineering principles required to practice in one’s specialty area

# GENERAL KNOWLEDGE

Having achieved a satisfactory level of knowledge outside the areas of mathematics, science, and engineering

**Key Actions**:

* General knowledge—Demonstrates a knowledge of important current issues and events outside the areas of mathematics, science, and engineering
* Relates general knowledge to engineering—Demonstrates a knowledge of the interrelationships between important issues and events outside of engineering and one’s engineering specialty area

# CONTINUOUS LEARNING

Actively identifying new areas for learning; regularly creating and taking advantage of learning opportunities; using newly gained knowledge and skill on the job; and learning through application

**Key Actions**:

* Targets learning needs—Seeks and uses feedback and other sources of information to identify appropriate areas for learning
* Seeks learning activities—Identifies and participates in appropriate learning activities (e.g., courses, reading, self-study, coaching, experiential learning) that help fulfill learning needs
* Maximizes learning—Actively participates in learning activities in a way that makes the most of the learning experience (e.g., takes notes, asks questions, critically analyzes information, keeps on-the-job application in mind, completes required tasks)
* Applies knowledge or skill—Puts new knowledge, understanding, or skill to practical use on the job; furthers learning through trial and error
* Takes risks in learning—Puts oneself in unfamiliar or uncomfortable situation in order to learn; asks questions at the risk of appearing foolish; takes on challenging or unfamiliar assignments

# INITIATIVE

Taking prompt action to accomplish objectives; taking action to achieve goals beyond what is required; being proactive

**Key Actions**:

* Responds quickly—Takes immediate action when confronted with a problem or when made aware of a situation
* Takes independent action—Implements new ideas or potential solutions without prompting; does not wait for others to take action or to request action
* Goes above and beyond—Takes action that goes beyond job requirements in order to achieve objectives

# QUALITY ORIENTATION

Accomplishing tasks by considering all areas involved, no matter how small; showing concern for all aspects of the job; accurately checking processes and tasks; being watchful over a period of time

**Key Actions**:

* Follows procedures—Accurately and carefully follows established procedures for completing work tasks
* Ensures high-quality output—Vigilantly designs and/or watches over job processes, tasks, and work products to ensure freedom from errors, omissions, or defects
* Takes action—Initiates action to correct quality problems or notifies others of quality issues as appropriate

# INNOVATION

Generating creative, non-traditional engineering solutions in work situations; trying different and novel ways to deal with work problems and opportunities

**Key Actions**:

* Challenges paradigms—Identifies implicit assumptions in the way problems or situations are defined or presented; sees alternative ways to view or define problems; is not constrained by the thoughts or approaches of others
* Leverages diverse resources—Draws upon multiple and diverse sources (individuals, disciplines, bodies of knowledge) for ideas and inspiration
* Thinks expansively—Combines ideas in unique ways or makes connections between disparate ideas; explores different lines of thought; views situations from multiple perspectives; brainstorms multiple approaches/ solutions
* **Evaluates multiple solutions—Examines numerous potential solutions and evaluates each before accepting any**
* Ensures relevance—Targets important areas for innovation and develops solutions that address meaningful work issues

# CULTURAL ADAPTABILITY

Being open to and making changes to accommodate the differences found in other cultures in order to interact effectively with individuals and groups from a different cultural background

**Key Actions**:

* Demonstrates inclusive behavior—Establishes effective relationships with people of other cultures and backgrounds; shows genuine acceptance of people from backgrounds different from one’s own
* Exhibits sensitivity—Exhibits sensitivity to and respect for the perspectives and interests of people of a different culture; attends to and tries to understand different perspectives and approaches
* Adapts behavior to other culture—Adjusts own approach to interactions, communications, and decision making to be appropriate and effective within another culture without sacrificing own values
* Adapts products and processes to cultural concerns—Identifies, under-stands, and incorporates cultural factors into the design of products and processes

# ANALYSIS AND JUDGMENT

Identifying and understanding issues, problems, and opportunities; developing the relevant criteria and comparing data from different sources to draw conclusions; using effective approaches for choosing a course of action or developing appropriate solutions; taking action that is consistent with available facts, constraints, and probable consequences

**Key Actions**:

* Identifies issues, problems, and opportunities—Recognizes issues, problems, or opportunities and determines whether action is needed
* Gathers information—Identifies the need for and collects information to better understand issues, problems, and opportunities
* Interprets information—Integrates information from a variety of sources; detects trends, associations, and cause-effect relationships
* Generates alternatives—Creates relevant options for addressing problems/opportunities and achieving desired outcomes
* Chooses appropriate action—Formulates clear decision criteria; evaluates options by considering implications and consequences; chooses an effective option
* Commits to action—Makes decisions within a reasonable time
* Involves others—Includes others in the decision-making process as warranted to obtain good information, to make the most appropriate decisions, and to ensure buy-in and understanding of the resulting decisions
* Valuing diversity—Embraces and values diverse collection of inputs, values, perspectives, and thought paradigms in approaching the application of engineering to products and processes

# PLANNING

Effectively managing one’s time and resources to ensure that work is completed efficiently

**Key Actions**:

* Prioritizes—Identifies more critical and less critical activities and tasks; adjusts priorities when appropriate
* Makes preparations—Ensures that required equipment and/or materials are in appropriate locations so that own and others’ work can be done effectively
* Schedules—Effectively allocates own time to complete work; coordinates own and others’ schedules to avoid conflicts
* Leverages resources—Takes advantage of available resources (individuals, processes, departments, and tools) to complete work efficiently
* Stays focused—Uses time effectively and prevents irrelevant issues or distractions from interfering with work completion

# TEAMWORK

Effectively participating as a member of a team to move the team toward the completion of goals

**Key Actions**:

* Facilitates goal accomplishment—Makes procedural or process suggestions for achieving team goals or performing team functions; provides necessary resources or helps to remove obstacles to help the team accomplish its goals
* Involves others—Listens to and fully involves others in team decisions and actions; values and uses individual differences and talents
* Informs others on team—Shares important or relevant information with the team
* Models commitment—Adheres to the team’s expectations and guidelines; fulfills team responsibilities; demonstrates personal commitment to the team

**COMMUNICATION**

Clearly conveying information and ideas through a variety of media to

individuals or groups in a manner that engages the audience and helps

them understand and retain the message

**Key Actions**:

* Organizes the communication—Clarifies purpose and importance; stresses major points; follows a logical sequence
* Maintains audience attention—Keeps the audience engaged through use of techniques such as analogies, illustrations, body language, and voice inflection
* Adjusts to the audience—Frames message in line with audience experience, background, and expectations; uses terms, examples, and analogies that are meaningful to the audience
* Ensures understanding—Seeks input from audience; checks understanding; presents message in different ways to enhance understanding
* Adheres to accepted conventions—Uses syntax, pace, volume, diction, and mechanics appropriate to the media being used
* Comprehends communication from others—Attends to messages from others; correctly interprets messages and responds appropriately

# INTEGRITY

Maintaining social, ethical, and organizational norms; firmly adhering to codes of conduct and professional ethical principles

**Key Actions**:

* Demonstrates honesty—Deals with people in an honest and forthright manner; represents information and data accurately and completely
* Keeps commitments—Performs actions as promised; does not share confidential information
* Behaves consistently—Ensures that words and actions are consistent; behaves consistently across situations

# PROFESSIONAL IMPACT

Creating a good first impression; commanding attention and respect; showing an air of confidence

**Key Actions**:

* Dresses appropriately—Maintains a professional, businesslike image consistent with the workplace environment
* Displays professional demeanor—Exhibits a calm appearance; does not appear nervous or overly anxious; responds openly and warmly when appropriate
* Speaks confidently—Speaks with a self-assured tone of voice

# CUSTOMER FOCUS

Making customers and their needs a primary focus of one’s actions; developing and sustaining productive customer relationships

**Key Actions**:

* Seeks to understand customers—Actively seeks information to understand customers’ circumstances, problems, expectations, and needs
* Educates customers—Shares information with customers to build their understanding of issues and capabilities
* Builds collaborative relationships—Builds rapport and cooperative relationships with customers
* Takes action to meet customer needs and concerns—Considers how actions or plans will affect customers; responds quickly to meet customer needs and resolve problems; avoids over commitments
* Sets up customer feedback systems—Implements effective ways to monitor and evaluate customer concerns, issues, and satisfaction and to anticipate customer needs

# SAFETY AWARENESS

Identifying and correcting conditions that affect employee safety; upholding safety standards

**Key Actions**:

* Identifies safety issues and problems
* Takes corrective action
* Monitors corrective action

© 2001 Development Dimensions International, Inc.