

## 2013 ENGINEERING AND TECHNOLOGY

<b>ACADEMIC</b>		
<b>AA</b>		<b>SPEAKING AND LISTENING</b>
AA	1	Utilize effective verbal and non-verbal communication skills
AA	2	Participate in conversation, discussion, and group presentations
AA	3	Communicate and follow directions/procedures
AA	4	Communicate effectively with customers and co-workers
<b>AB</b>		<b>READING AND WRITING</b>
AB	1	Locate and interpret written information
AB	2	Read and interpret workplace documents
AB	3	Identify relevant details, facts, and specifications
AB	4	Record information accurately and completely
AB	5	Demonstrate competence in organizing, writing, and editing using correct vocabulary, spelling, grammar, and punctuation
AB	6	Demonstrate the ability to write clearly and concisely using industry specific terminology
<b>AC</b>		<b>CRITICAL THINKING AND PROBLEM SOLVING</b>
AC	1	Utilize critical-thinking skills to determine best options/outcomes (e.g., analyze reliable/unreliable sources of information, use previous experiences, implement crisis management, develop contingency planning)
AC	2	Utilizes innovation and problem-solving skills to arrive at the best solution for current situation
AC	3	Implement effective decision-making skills
<b>AD</b>		<b>MATHEMATICS</b>
AD	1	Perform basic and higher level math operations (e.g., addition, subtraction, multiplication, division, decimals, fractions, units of conversion, averaging, percentage, proportion, ratios)
AD	2	Solve problems using measurement skills (e.g., distance, weight, area, volume)
AD	3	Make reasonable estimates
AD	4	Use tables, graphs, diagrams, and charts to obtain or convey information
AD	5	Use deductive reasoning and problem-solving in mathematics
<b>AE</b>		<b>FINANCIAL LITERACY</b>
AE	1	Locate, evaluate, and apply personal financial information
AE	2	Identify the components of a budget and how one is created
AE	3	Set personal financial goals and develop a plan for achieving them
AE	4	Use financial services effectively
AE	5	Demonstrate ability to meet financial obligations
<b>AF</b>		<b>INTERNET USE AND SECURITY</b>
AF	1	Recognize the potential risks associated with Internet use
AF	2	Identify and apply Internet security practices (e.g., password security, login, logout, log off, lock computer)
AF	3	Practice safe, legal, and responsible use of technology in the workplace
<b>AG</b>		<b>INFORMATION TECHNOLOGY</b>
AG	1	Use technology appropriately to enhance professional presentations
AG	2	Demonstrate effective and appropriate use of social media
AG	3	Identify ways social media can be used as marketing, advertising, and data gathering tools
<b>AH</b>		<b>TELECOMMUNICATIONS</b>
AH	1	Select and use appropriate devices, services, and applications to complete workplace tasks
AH	2	Demonstrate appropriate etiquette when using e-communications (e.g., cell phone, e-mail, personal digital assistants, online meetings, conference calls)
<b>EMPLOYABILITY</b>		
<b>EA</b>		<b>POSITIVE WORK ETHIC</b>

EA	1	Demonstrate enthusiasm and confidence about work and learning new tasks
EA	2	Demonstrate consistent and punctual attendance
EA	3	Demonstrate initiative in assuming tasks
EA	4	Exhibit dependability in the workplace
EA	5	Take and provide direction in the workplace
EA	6	Accept responsibility for personal decisions and actions
<b>EB</b>		<b>INTEGRITY</b>
EB	1	Abide by workplace policies and procedures
EB	2	Demonstrate honesty and reliability
EB	3	Demonstrate ethical characteristics and behaviors
EB	4	Maintain confidentiality and integrity of sensitive company information
EB	5	Demonstrate loyalty to the company
<b>EC</b>		<b>SELF-REPRESENTATION</b>
EC	1	Demonstrate appropriate dress and hygiene in the workplace
EC	2	Use language and manners suitable for the workplace
EC	3	Demonstrate polite and respectful behavior toward others
EC	4	Demonstrate personal accountability in the workplace
EC	5	Demonstrate pride in work
<b>ED</b>		<b>TIME, TASK, AND RESOURCE MANAGEMENT</b>
ED	1	Plan and follow a work schedule
ED	2	Work with minimal supervision
ED	3	Work within budgetary constraints
ED	4	Demonstrate ability to stay on task to produce high quality deliverables on time
<b>EE</b>		<b>DIVERSITY AWARENESS</b>
EE	1	Recognize diversity, discrimination, harassment, and equity
EE	2	Work well with all customers and co-workers
EE	3	Explain the benefits of diversity within the workplace
EE	4	Explain the importance of respect for feelings, values, and beliefs of others
EE	5	Identify strategies to bridge cultural/generational differences and use differing perspectives to increase overall quality of work
EE	6	Illustrate techniques for eliminating gender bias and stereotyping in the workplace
EE	7	Identify ways tasks can be structured to accommodate the diverse needs of workers
EE	8	Recognize the challenges and advantages of a global workforce
<b>EF</b>		<b>TEAMWORK</b>
EF	1	Recognize the characteristics of a team environment and conventional workplace
EF	2	Contribute to the success of the team
EF	3	Demonstrate effective team skills and evaluate their importance in the workplace (e.g., setting goals, listening, following directions, questioning, dividing work)
<b>EG</b>		<b>CREATIVITY AND RESOURCEFULNESS</b>
EG	1	Contribute new ideas
EG	2	Stimulate ideas by posing questions
EG	3	Value varying ideas and opinions
EG	4	Locate and verify information
<b>EH</b>		<b>CONFLICT RESOLUTION</b>
EH	1	Identify conflict resolution skills to enhance productivity and improve workplace relationships
EH	2	Implement conflict resolution strategies and problem-solving skills
EH	3	Explain the use of documentation and it's role as a component of conflict resolution

<b>EI</b>		<b>CUSTOMER/CLIENT SERVICE</b>
EI	1	Recognize the importance of and demonstrate how to properly acknowledge customers/clients
EI	2	Identify and address needs of customers/clients
EI	3	Provide helpful, courteous, and knowledgeable service
EI	4	Identify appropriate channels of communication with customers/clients (e.g., phone call, face-to-face, e-mail, website)
EI	5	Identify techniques to seek and use customer/client feedback to improve company services
EI	6	Recognize the relationship between customer/client satisfaction and company success
<b>EJ</b>		<b>ORGANIZATIONS, SYSTEMS, AND CLIMATES</b>
EJ	1	Define profit and evaluate the cost of conducting business
EJ	2	Identify "big picture" issues in conducting business
EJ	3	Identify role in fulfilling the mission of the workplace
EJ	4	Identify the rights of workers (e.g., adult and child labor laws and other equal employment opportunity laws)
EJ	5	Recognize the chain of command, organizational flow chart system, and hierarchy of management within an organization
<b>EK</b>		<b>JOB ACQUISITION AND ADVANCEMENT</b>
EK	1	Recognizes the importance of maintaining a job and pursuing a career
EK	2	Define jobs associated with a specific career path or profession
EK	3	Identify and seek various job opportunities (e.g., volunteerism, internships, co-op, part-time/full-time employment)
EK	4	Prepare a resume, letter of application, and job application
EK	5	Prepare for a job interview (e.g., research company, highlight personal strengths, prepare questions, set-up a mock interview, dress appropriately)
EK	6	Participate in a job interview
EK	7	Explain the proper procedure for leaving a job
<b>EL</b>		<b>LIFELONG LEARNING</b>
EL	1	Acquire current and emerging industry-related information
EL	2	Demonstrate commitment to learning as a life-long process and recognize learning opportunities
EL	3	Seek and capitalize on self-improvement opportunities
EL	4	Discuss the importance of flexible career planning and career self-management
EL	5	Employ leadership skills to achieve workplace objectives (e.g., personal vision, adaptability, change, shared vision)
EL	6	Recognize the importance of job performance evaluation and coaching as it relates to career advancement
EL	7	Accept and provide constructive criticism
EL	8	Describe the impact of the global economy on jobs and careers
<b>EM</b>		<b>JOB SPECIFIC TECHNOLOGIES</b>
EM	1	Identify the value of new technologies and their impact on driving continuous change and the need for life-long learning
EM	2	Research and identify emerging technologies for specific careers
EM	3	Select appropriate technological resources to accomplish work
<b>EN</b>		<b>HEALTH AND SAFETY</b>
EN	1	Assume responsibility for safety of self and others
EN	2	Follow safety guidelines in the workplace
EN	3	Manage personal health and wellness
<b>OCCUPATIONAL</b>		
<b>OA</b>		<b>CHARACTERISTICS AND SCOPE OF TECHNOLOGY</b>
OA	1	Nature of technology

OA	2	Rate of technological diffusion
OA	3	Goal-directed research
OA	4	Commercialization of technology
<b>OB</b>		<b>CORE CONCEPTS OF TECHNOLOGY</b>
OB	1	Systems
OB	2	Resources
OB	3	Requirements
OB	4	Optimization and trade-offs
OB	5	Processes
OB	6	Controls
<b>OC</b>		<b>RELATIONSHIPS AMONG TECHNOLOGIES AND THE CONNECTIONS BETWEEN TECHNOLOGY AND OTHER FIELDS</b>
OC	1	Technology transfer
OC	2	Innovation and invention
OC	3	Knowledge protection and patents
OC	4	Technological knowledge and advances of science and mathematics and vice versa
<b>OD</b>		<b>CULTURAL, SOCIAL, ECONOMIC, AND POLITICAL EFFECTS OF TECHNOLOGY</b>
OD	1	Rapid or gradual change
OD	2	Trade-offs and effects
OD	3	Ethical implications
OD	4	Cultural ,social, economic, and political changes
<b>OE</b>		<b>EFFECTS OF TECHNOLOGY ON THE ENVIRONMENT</b>
OE	1	Conservation
OE	2	Reduce resource use
OE	3	Monitor environment
OE	4	Alignment of natural and technological processes
OE	5	Reduce negative consequences of technology
OE	6	Decisions and trade-offs
<b>OF</b>		<b>ROLE OF SOCIETY IN THE DEVELOPMENT AND USE OF TECHNOLOGY</b>
OF	1	Different cultures and technologies
OF	2	Development decisions
OF	3	Factors affecting designs and demands of technologies
<b>OG</b>		<b>INFLUENCE OF TECHNOLOGY ON HISTORY</b>
OG	1	Evolutionary development of technology
OG	2	Dramatic changes in society
OG	3	History of technology
OG	4	Early technological history
OG	5	The Iron Age
OG	6	The Middle Ages
OG	7	The Renaissance
OG	8	The Industrial Revolution
OG	9	The Information Age
<b>OH</b>		<b>ATTRIBUTES OF DESIGN</b>
OH	1	The design process
OH	2	Design problems are usually not clear
OH	3	Designs need to be refined
OH	4	Requirements

<b>OI</b>		<b>ENGINEERING DESIGN</b>
OI	1	Design principles
OI	2	Influence of personal characteristics
OI	3	Prototypes
OI	4	Factors in engineering design
<b>OJ</b>		<b>ROLE OF TROUBLESHOOTING, RESEARCH AND DEVELOPMENT, INVENTION, AND INNOVATIONS, AND EXPERIMENTING IN PROBLEM SOLVING</b>
OJ	1	Research and development
OJ	2	Researching technological problems
OJ	3	Not all problems are technological or can be solved
OJ	4	Multidisciplinary approach
<b>OK</b>		<b>APPLY DESIGN PROCESSES</b>
OK	1	Identify a design problem
OK	2	Identify criteria and constraints
OK	3	Refine the design
OK	4	Evaluate the design
OK	5	Develop a product or system using quality control
OK	6	Reevaluate final solution(s)
<b>OL</b>		<b>USE AND MAINTAIN TECHNOLOGICAL PRODUCTS AND SYSTEMS</b>
OL	1	Document and communicate processes and procedures
OL	2	Diagnose a malfunctioning system
OL	3	Troubleshoot and maintain systems
OL	4	Operate and maintain systems
OL	5	Use computers to communicate
<b>OM</b>		<b>ASSESS THE IMPACT OF PRODUCTS AND SYSTEMS</b>
OM	1	Collect information and judge its quality
OM	2	Synthesize data to draw conclusions
OM	3	Employ assessment techniques
OM	4	Design forecasting techniques
<b>ON</b>		<b>MEDICAL TECHNOLOGIES</b>
ON	1	Medical technologies for prevention and rehabilitation
ON	2	Telemedicine
ON	3	Genetic therapeutics
ON	4	Biochemistry
<b>OO</b>		<b>AGRICULTURAL AND RELATED BIOTECHNOLOGIES</b>
OO	1	Agricultural products and systems
OO	2	Biotechnology
OO	3	Conservation
OO	4	Engineering design and management of ecosystems
<b>OP</b>		<b>ENERGY AND POWER TECHNOLOGIES</b>
OP	1	Law of Conservation of energy
OP	2	Energy sources
OP	3	Second Law of Thermodynamics
OP	4	Renewable and non-renewable forms of energy
OP	5	Power systems are a source, a process, and a load
<b>OQ</b>		<b>INFORMATION AND COMMUNICATION</b>
OQ	1	Parts of information and communications systems

OQ	2	Information and communication systems
OQ	3	The purpose of information and communication technology
OQ	4	Communication systems and subsystems
OQ	5	Many ways of communicating
OQ	6	Communication through symbols
<b>OR</b>		<b>TRANSPORTATION TECHNOLOGIES</b>
OR	1	Relationship of transportation and other technologies
OR	2	Intermodalism
OR	3	Transportation services and methods
OR	4	Positive and negative impacts of transportation systems
OR	5	Transportation processes and efficiency
<b>OS</b>		<b>MANUFACTURING TECHNOLOGIES</b>
OS	1	Servicing and obsolescence
OS	2	Materials
OS	3	Durable or non-durable goods
OS	4	Manufacturing systems
OS	5	Interchangeability of parts
OS	6	Chemical technologies
OS	7	Marketing products
<b>OT</b>		<b>CONSTRUCTION TECHNOLOGIES</b>
OT	1	Infrastructure
OT	2	Construction processes and procedures
OT	3	Requirements
OT	4	Maintenance, alterations, and renovation
OT	5	Prefabricated materials