Appendix E: Knowledge Variables and Descriptions

**Administration and Management**—Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.

**Biology**—Knowledge of plant and animal organisms, their tissues, cells, functions, interdependencies, and interactions with each other and the environment.

**Building and Construction**—Knowledge of materials, methods, and the tools involved in the construction or repair of houses, buildings, or other structures such as highways and roads.

**Chemistry**—Knowledge of the chemical composition, structure, and properties of substances and of the chemical processes and transformations that they undergo. This includes uses of chemicals and their interactions, danger signs, production techniques, and disposal methods.

**Clerical**—Knowledge of administrative and clerical procedures and systems such as word processing, managing files and records, stenography and transcription, designing forms, and other office procedures and terminology.

**Communications and Media**—Knowledge of media production, communication, and dissemination techniques and methods. This includes alternative ways to inform and entertain via written, oral, and visual media.

**Computers and Electronics**—Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.

**Customer and Personal Service**—Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.

**Design**—Knowledge of design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and models.

**Economics and Accounting**—Knowledge of economic and accounting principles and practices, the financial markets, banking and the analysis and reporting of financial data.

**Education and Training**—Knowledge of principles and methods for curriculum and training design, teaching and instruction for individuals and groups, and the measurement of training effects.

**Engineering and Technology**—Knowledge of the practical application of engineering science and technology. This includes applying principles, techniques, procedures, and equipment to the design and production of various goods and services.

**English Language**—Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
**Fine Arts**—Knowledge of the theory and techniques required to compose, produce, and perform works of music, dance, visual arts, drama, and sculpture.

**Food Production**—Knowledge of techniques and equipment for planting, growing, and harvesting food products (both plant and animal) for consumption, including storage/handling techniques.

**Foreign Language**—Knowledge of the structure and content of a foreign (non-English) language including the meaning and spelling of words, rules of composition and grammar, and pronunciation.

**Geography**—Knowledge of principles and methods for describing the features of land, sea, and air masses, including their physical characteristics, locations, interrelationships, and distribution of plant, animal, and human life.

**History and Archeology**—Knowledge of historical events and their causes, indicators, and effects on civilizations and cultures.

**Law and Government**—Knowledge of laws, legal codes, court procedures, precedents, government regulations, executive orders, agency rules, and the democratic political process.

**Mathematics**—Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.

**Mechanical**—Knowledge of machines and tools, including their designs, uses, repair, and maintenance.

**Medicine and Dentistry**—Knowledge of the information and techniques needed to diagnose and treat human injuries, diseases, and deformities. This includes symptoms, treatment alternatives, drug properties and interactions, and preventive health-care measures.

**Personnel and Human Resources**—Knowledge of principles and procedures for personnel recruitment, selection, training, compensation and benefits, labor relations and negotiation, and personnel information systems.

**Philosophy and Theology**—Knowledge of different philosophical systems and religions. This includes their basic principles, values, ethics, ways of thinking, customs, practices, and their impact on human culture.

**Physics**—Knowledge and prediction of physical principles, laws, their interrelationships, and applications to understanding fluid, material, and atmospheric dynamics, and mechanical, electrical, atomic and sub-atomic structures and processes.

**Production and Processing**—Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods.

**Psychology**—Knowledge of human behavior and performance; individual differences in ability, personality, and interests; learning and motivation; psychological research methods; and the assessment and treatment of behavioral and affective disorders.

**Public Safety and Security**—Knowledge of relevant equipment, policies, procedures, and strategies to promote effective local, state, or national security operations for the protection of people, data, property, and institutions.
**Sales and Marketing**—Knowledge of principles and methods for showing, promoting, and selling products or services. This includes marketing strategy and tactics, product demonstration, sales techniques, and sales control systems.

**Sociology and Anthropology**—Knowledge of group behavior and dynamics, societal trends and influences, human migrations, ethnicity, cultures and their history and origins.

**Telecommunications**—Knowledge of transmission, broadcasting, switching, control, and operation of telecommunications systems.