A Body of Knowledge (BoK) represents a collection of knowledge and skills within a profession that are generally known to its members and recognized as essential in the profession’s practice. The Certified Mine Safety Professional (CMSP) BoK has been developed by subject matter experts from across the spectrum of mining commodities, methods, mine size, and geographical distribution worldwide. It was validated through a Job Assessment Survey conducted across a second set of practicing, mining safety and health, subject matter experts. The Board of Directors of International Academy of Mine Safety & Health of the Society for Mining, Metallurgy & Exploration (IAMSH of SME) believe the CMSP BoK is most relevant as a reflection of the potential scope of practice for mine safety and health professionals, rather than just a tool to facilitate preparation for the CMSP examination. This is especially true for those committed to sustainable, safety and health management excellence. Relative to the examination, the weighting of the BoK domains remain fixed until a subsequent revision. The domains are reflective and not prescriptive.

I. FUNDAMENTAL KNOWLEDGE OF SCIENCE & ENGINEERING: 10 QUESTIONS

A. Science & Mathematics
   1. Mathematics & statistics
   2. Chemistry
   3. Physics
   4. Toxicology
   5. Human anatomy & physiology
   6. Psychology

B. Mining
   1. Mining life cycle
   2. Mining methods
   3. Mining equipment
   4. Mining processes

C. Mining Engineering
   1. Fundamentals of mining geology
   2. Fundamental mining engineering principles
   3. Mine planning
   4. Mining ventilation
   5. Ground control plans, principles and methods
   6. Fundamentals of rock mechanics
II. LEADERSHIP, ORGANIZATION & CULTURE:  15 QUESTIONS
   A. Leadership  4 questions
      1. Key leadership models
      2. Leadership styles
      3. Management vs leadership activities
      4. Leadership competencies linked to safety
      5. Leadership development
      6. Linkage to culture & climate
      7. Assessment of leadership problems
   B. Culture  3 questions
      1. Fundamentals of safety culture
      2. Culture/climate assessment/measurement
      3. Culture enhancement
   C. Loss Control and Economics  4 questions
      1. Basic mining economics & terminology
      2. Modeling direct & indirect loss
   D. Responsibility & Accountability  4 questions
      1. Differentiating responsibility & accountability
      2. Applying responsibility & accountability to S&H management
      3. Discipline (versus responsibility & accountability)
      4. Management by objectives

III. SAFETY, HEALTH & RISK MANAGEMENT:  50 QUESTIONS
   A. Risk Management  12 questions
      1. Mining-specific hazards
      2. Non-specific hazards
      3. Energy sources
      4. Hazard identification techniques
      5. Situational awareness
      6. Risk assessment approaches & techniques
      7. Risk controls
      8. Fatal risk management principles
      9. Characteristics of risk
     10. Acceptable risk
     11. Safe operations procedures
     12. Hierarchy of control
     13. Personal protective equipment
     14. Risk control verification
     15. Management of change
B. Human Factors/Behavior 8 questions
1. Key theories of human behavior
2. Key elements of human error
3. Assessment of error & at-risk behavior
4. Error & behavior measurement
5. Error mitigation techniques
6. Behavior modification techniques
7. Mobile equipment design
8. Fixed equipment design
9. Fatigue & alertness assurance
10. Fitness for duty

C. Occupational Hygiene 4 questions
1. Basic principles of occupational hygiene
2. Methods of exposure assessment
3. Occupational Exposure Limits (OELs)
4. Exposure assessment data analysis

D. Occupational Health 4 questions
1. Basics principles of occupational medicine
2. Linkage between exposure & dysfunction
3. Mining-specific occupational disease
4. Non-specific occupational disease (e.g., NIHL)
5. Medical surveillance
6. Working with health professionals & other stakeholders
7. Principles of ergonomics
8. Ergonomic risk assessment
9. Ergonomic risk mitigation

E. Education, Training & Competency 7 questions
1. Adult learning theory
2. Education & training methods
3. Education & training needs assessment
4. On-the-job training, safe work instruction, task training
5. Competency verification
6. Training & education effectiveness assessment

F. Emergency & Crisis Management 7 questions
1. Emergency preparedness & response
2. Mine rescue organization & training
3. Incident management & communication
### G. Incident Reporting & Investigation

1. Incident definitions & categorization
2. Near miss reporting, investigation & analysis
3. Incident investigation techniques
4. Root cause analysis techniques
5. Key models & theories

### IV. MANAGEMENT SYSTEMS, REGULATION & ASSURANCE: 15 QUESTIONS

#### A. Management Systems

1. Principles of safety management systems
2. Governance, structure & functionality
3. Consensus management system standards
4. Management system metrics
5. Management system auditing
6. Continuous improvement principles

#### B. Regulation & Legislation

1. Regulatory requirements of area(s) of responsibility for H&S professional
2. Integrating management systems & regulation
3. Techniques for regulatory compliance

### V. PROFESSIONAL SKILLS, CONDUCT & ETHICS: 10 QUESTIONS

#### A. Professional Skills

1. Strategy development & program management
2. Persuasion (ability to influence opinion)
3. Inter-personal communication (verbal, non-verbal and written)
4. Project management
5. Personnel & performance management
6. Interpreting relevant safety & health research
7. Using information technology (hardware & software for S&H)
8. Data analysis, trending, interpretation & action (upon)
9. Time management
10. Problem-solving
11. Delegation
12. Managing up
13. Networking & collaboration
14. Advocacy (internal & external)
15. Recognition & reinforcement

#### B. Professional Ethics

1. Related codes of ethics