The Project Management portion of the examination consists of 60 equally weighted questions covering the management and operation activities of a construction company.

The examination will have questions relating to the following content areas and necessary knowledge for each area includes:

- reading and interpreting plans and specifications
- reading and interpreting codes
- basic mathematics (addition, subtraction, multiplication, division, calculations of area and volume, fractions, decimals, percentages, calculating the sides of triangles, square roots, powers of numbers, and solving simple algebraic equations for unknown variables)

You should be prepared to respond to examination questions on any of the content areas listed. Questions asked and content areas tested on previous examinations should not be assumed to be the only possible questions to be asked or content areas to be tested on this examination.

The percentage of questions shown for each content area may vary by as much as plus or minus three (3) percent. Please refer to the Candidate Information Brochure and the Reference List for additional information.

Content Area E 63%
Construction Methods, Materials, Tools, and Equipment

1. Performing site layouts
   understanding of surveys (e.g., types, instruments, methods)
   Knowledge of benchmarks
   Knowledge of elevations (including FEMA requirements)
   Knowledge of setbacks and easements
   Knowledge and interpretation of site plan
   Knowledge of environmental impact (e.g., wetlands, trees, retention ponds, storm water drainage)
   Knowledge of material storage

2. Evaluating soil conditions
   Knowledge of soils (e.g., soil types, compaction, density, proctor, moisture content)
   Interpreting soil reports
   Knowledge of appropriate foundation types given soil conditions
   Knowledge of water tables

3. Performing earthwork
   Knowledge of excavations (e.g., cut and fill calculations, calculating excavations and grades, trenching)
   Preparation of site for foundation (e.g., angle of repose, soil compaction)
   Knowledge of sheeting, shoring for excavations and dewatering
   Knowledge of erosion control
   Knowledge of quality control related to earth-work

4. Placing and testing concrete
   Knowledge of shoring
   Knowledge of loads (e.g., volume, pressure)
   Knowledge of systems and methods for concrete (e.g., Footings, piles and pile caps, placing slabs and decks, columns, walls)
   Knowledge of forming practices, bracing and erection
   Knowledge of concrete reinforcement
   Knowledge of quality control related to concrete
   Knowledge of concrete mixtures and additives

5. Placing masonry
   Knowledge of erection and bracing
   Knowledge of masonry materials and handling
   Knowledge of quality control related to masonry
   Knowledge of reinforcement
   Knowledge of grouting

6. Framing with Wood
   Knowledge of lumber types (e.g., engineered, wood grades, species)
   Knowledge of truss erection and bracing
   Knowledge of rafters, floor joists and studs
   Knowledge of and ability to use span tables
   Knowledge of wind loads and fasteners
   Knowledge of roof framing, sheathing and materials
7. **Framing with metal**  
Knowledge of metal materials (e.g., aluminum, steel, gauges, grade)  
Knowledge of pre-engineered buildings  
Knowledge of erection and bracing techniques  
Knowledge of metal studs, beams, columns, bar joists, fasteners, and trusses  
Knowledge of coatings (e.g., painting, fire, and corrosion protection)  
Knowledge of welding and connections of steel framing  
Knowledge of metal roof framing

8. **Understanding innovative techniques**  
Knowledge of tilt-up construction  
Knowledge of SIP’s (Structural Insulated Panels)  
Knowledge of ICF (Insulated Concrete Forms)  
Knowledge of slip forming

9. **Implementing Energy efficient construction**  
Ability to interpret energy calculations  
Knowledge of R-values and U-values for different materials  
Knowledge of building envelopes  
Knowledge of blower door testing  
Knowledge pertaining to energy efficiency  
Knowledge of types and placement of insulation (e.g., rigid and spray foam, batts)

10. **Installing miscellaneous materials**  
Knowledge of gypsum materials and methods (e.g., fastening requirements, fire wall assemblies)  
Knowledge of plaster and stucco materials and methods  
Knowledge of moisture control (vapor barriers, flashings, etc.)  
Knowledge of cementitious materials  
Knowledge of fire-proofing wall and floor penetrations  
Knowledge of insulated wall panels  
Knowledge of roof covering materials (e.g., pre-engineered systems, shingles)

11. **Understanding the use of heavy equipment**  
Knowledge of cranes  
Knowledge of hoisting equipment  
Knowledge of lift plans

<table>
<thead>
<tr>
<th>Content Area F</th>
<th>20%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Safety</strong></td>
<td></td>
</tr>
<tr>
<td>1. <strong>Complying with OSHA standards</strong></td>
<td></td>
</tr>
</tbody>
</table>
Knowledge of site layout  
Knowledge of soil conditions  
Knowledge of shoring for concrete  
Knowledge of bracing and erection  
Knowledge of earth-work  
Knowledge of formwork for concrete  
Knowledge of framing  
Knowledge of scaffolding  
Knowledge of trench safety  
Knowledge of ground fault interruption  
Knowledge of construction equipment  
Knowledge of field log record keeping  
Knowledge of fall protection  
Knowledge of job site safety information requirements  
Knowledge of other OSHA regulations

<table>
<thead>
<tr>
<th>Content Area G</th>
<th>17%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reading Plans and Specifications</strong></td>
<td></td>
</tr>
<tr>
<td>1. <strong>Reading construction documents</strong></td>
<td></td>
</tr>
</tbody>
</table>
Ability to read and understand plans and drawings (e.g., knowledge of sections and views)  
Basic math skills and calculations associated with reading construction drawings  
Knowledge of architectural and engineering symbols, tables, and specifications  
Interpreting Shop drawings and submittals

| 2. **Interpreting construction codes and standards** | |  
Ability to read, understand, and apply codes and standards including building codes  
Knowledge of ADA requirements