



## Course Curriculum – CMI's CMP Course 1

# CONSTRUCTION MANAGEMENT INSTITUTE of the USA

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### Construction Management Professional Program

**Total hours: 10 hours lecturing**

**No. of courses: 4**

### Course 1: CMP-509 Construction Environment and Safety Management

#### 1. Construction Technology

- Construction manager's responsibilities
- Construction phases and techniques
- Construction characteristics and project patterns
- Green building approach
- Quality in construction projects
- Quality management systems and ISO standards
- Quality assurance and quality control

#### 2. Managing Safety

- Problems in safety and health
- The Occupational Safety and Health Act
- Guidelines and OSHA publications
- Safety Management Plan
- Safety and environment hazards and audits
- OSHA accident reporting and record keeping

#### 3. Project Stages

- Project feasibility
- LEED (Leadership in Energy and Environmental Design)
- Conceptual design
- Preliminary design
- Design development
- Project life cycle (Design and Construction Process)
- Successful proposal & project
- Bidding

#### 4. BIM in Construction

- BIM to design visualization
- BIM to site planning
- BIM to 4D scheduling
- BIM to cost estimating
- 3D printing



## Course Curriculum – CMI's CMP Course 2

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### Construction Management Professional Program

**Total hours: 10 hours lecturing**

**No. of courses: 4**

### Course 2: CMP-510 Construction Legal and Commercial Practice

#### 1. Construction Contract Documents

- Preparation of contract documents
- Forms of agreements and its components
- Review of the contract documents
- Feasibility studies
- Contract types and payment
- General conditions and special conditions
- Forms of contracts (AIA and AGC contracts)
- ConsensusDOCS and Engineers Joint Contract
- Construction Specification Institute (CSI) formats

#### 2. Contract Types and Construction Delivery Methods

- Fixed price contracts/Lump-Sum Contracts
- Cost-Plus-Fee Contracts
- Unit-Price Contracts
- Management contracts
- Design-build

#### 3. Contract Administration

- Preconstruction meeting
- Request for Information (RFI) and construction details
- Contract changes and change order
- Construction claims
- Payment process, retention, and final payment
- Project risks and risk assessment
- Alternative dispute resolution and mechanic liens

#### 4. Sub-Contracting and Procurement

- Sub-contractor obligations
- Sub-contractor documents
- Criteria for selecting subcontractors
- Procurement cycle
- Supply chain material management
- Controls of materials and equipment procurement



## Course Curriculum – CMI's CMP Course 3

# CONSTRUCTION MANAGEMENT INSTITUTE of the USA

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### Construction Management Professional Program

**Total hours: 10 hours lecturing**

**No. of courses: 4**

### Course 3: CMP-511 Project Scheduling and Estimating

#### 1. Project Planning

- Site conditions and site investigations
- CPM procedure
- Planning phase
- Activities and logic
- Constraints
- Work breakdown structure
- Precedence notation and diagram
- Gantt charts and network diagrams
- Computer applications

#### 2. Project Scheduling

- Procedures (identifying and sequencing tasks)
- Estimating activity durations
- Time contingency
- Early and late activity times
- Float
- Scheduling computations
- Bar charts
- Computer applications

#### 3. Estimating process

- Scope
- Labour, materials, equipment, and subcontractor costs
- Work breakdown structure and quantity take-off
- Overhead and profit
- Estimating process
- Conceptual and Preliminary estimates
- Detailed and definitive estimates
- Successive and range estimating

#### 4. Project Costs

- Understanding project direct and indirect costs
- Cost code and cost accounting
- Cost records and reports
- Cost control
- Cash flow
- Equipment operation and depreciation
- Earned value management systems
- Value engineering in the private and public sectors



## Course Curriculum – CMI's CMP Course 4

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### Construction Management Professional Program

**Total hours: 10 hours lecturing**

**No. of courses: 4**

#### Course 4: CMP-512 Design and Operations

##### 1. Sustainable Design and Green Building

- Architectural Quality economics in design and durability
- Financial viability to developer
- Innovation and technology
- Noise, mud, and dust control
- Environmental protections and construction wastages
- Energy, water, and human health
- Environmental law in the US

##### 2. Site Operations

- Organizing in the field
- Organizing the project team
- Project execution
- Preconstruction and mobilisation
- Shop drawing organization
- Site safety, worker's welfare, and communication
- Documentation and managing information
- Public relations

##### 3. Construction Operations

- Labour law in the United States
- Organised labour
- Ethnicity, women, and cultures
- Organisations and departments in construction
- Code of ethics and conducts

##### 4. Bidding and award

- Preparation of bidding documents
- Process of bidding
- Contractor qualification, evaluation, and award
- Insurance and surety bonds in construction