

GLF-CEM Workshop 1

CEM Graduate Program Structure

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Structure of MS and PhD

- **What would be an ideal program structure for MS/PhD?**
 - MS (course based with a project)
 - One year of graduate courses in CEM (e.g. 8).
 - Research project with a report
 - Exposure to construction industry
 - PhD
 - 3 to 4 courses past MS in area they intend to research.
 - Exposure to construction industry through courses and research work or preferably internships.
 - TA work (to learn teaching) and RA work exposure other than their research area. 1 year.
 - Thesis research 2 to 3 years.

Body of Knowledge

- Construction management courses
 - Construction Management topics:
 - Planning and control (including scheduling, resource analysis, WBS, EVA etc.)
 - Estimating
 - Administration
 - Legal aspects of construction, contract documents, claims, disputes resolution etc.
 - Project delivery
 - Financial management
 - Project delivery
 - Value engineering, Risk analysis, Constructability
 - Organization of project teams, personality theory and related topics
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 - Construction Engineering
 - Production systems
 - Construction methods and equipment
 - Construction systems
 - Temporary structures
 - Material handling and various systems (cranes, hoists etc.)
 - Logistics planning (site layouts, transportation and product delivery).
 - Analytical background
 - Operations research (simulation queuing theory, optimization etc.)
 - Research methods
 - Applied mathematics and Statistics
 - Computer modeling
 - Other topics in area of specialization

TA and RA Experience

- TA experience:
 - Preparation of new material for class delivery
 - Interacting with students
 - Planning HW, exams, and marking
 - Delivering lectures
 - Resolving issues that come up in the course of class delivery.
- RA experience:
 - Industry experience especially in intended area of application.
 - Proper academic background
 - Preparation of conference papers, journal papers, proposals
 - Supervision and administration
 - Understanding of scoping of work, contributions, experimentation, verification, validation, and documentation.
 - Thesis experience

Graduate Degree Structure

- Course based masters with research project
- Research based masters with thesis
- PhD



How to Teach

- Courses in teaching offered at Universities
- Apprenticing



Questions and Discussion

