

Is Civil Engineering a Good Career Choice?

Certainly, it is. With the growing civil engineering scope and demand not only domestically but also internationally, makes it a great career choice for students interested in this field. The civil engineering job comes with various benefits, including:

- **High Salary:** Civil engineers earn competitive salaries around the world. This aspect appeals to a large number of science students, making it a sought-after career.
- **Job Stability:** A civil engineer's career is well-known for its stability. A civil engineer can practice anywhere in the entire world once they have obtained their license. This ensures a high level of job stability, and being competitive in the profession is not a major worry.
- **Continuous Education:** Civil engineering allows for continuous education throughout one's career. There is always the opportunity to learn something new and broaden one's knowledge set.
- **Unique Experience:** Each project undertaken as a civil engineer gives a one-of-a-kind experience. Every project introduces new tactics, approaches, and techniques to the area, contributing to the acquisition of valuable job expertise.

With the extensive civil engineering scope, job opportunities, and demand, it is vital to develop a set of skills required for success in the industry. Technical training, mathematical proficiency, strong written and oral communication skills, effective leadership abilities, organizational capabilities, problem-solving aptitude, decision-making skills, and keen attention to detail are all essential for managing diverse projects and ensuring success in civil engineering endeavors.

Ref.: <https://www.pw.live/exams/gate/civil-engineering-scope/>

PROGRAMME OUTCOMES (POs)

- | | |
|--|--|
| <p>PO1. Engineering knowledge: Apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization in the field of Civil Engineering.</p> <p>PO2. Problem analysis: Identify, formulate, analyse and solve complex problems in construction industries using principles of mathematics, natural sciences and engineering sciences.</p> <p>PO3. Design/development of solutions: Design a solution for complex civil engineering problems and design system processes to meet specific needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.</p> <p>PO4. Conduct investigations of complex problems: Conduct investigations of complex problems including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusion.</p> <p>PO5. Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.</p> <p>PO6. The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.</p> | <p>PO7. Environment and sustainability: Understanding the impact of engineering solutions in social environment and demonstrate the knowledge for sustainable expansion.</p> <p>PO8. Ethics: Apply ethical principles and commit to professional ethics and the norms of engineering practices.</p> <p>PO9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams and in multidisciplinary settings.</p> <p>PO10. Communication: Communicate with engineers and society to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions related to civil engineering professionals.</p> <p>PO11. Project management and finance: Demonstrate and apply the knowledge of engineering and management principles to one's own work, as a team leader or a member to manage project in multidisciplinary environments.</p> <p>PO12. Life-long learning: Recognize the need for, and have the ability to engage in independent and life-long learning in the context of technological change.</p> |
|--|--|

PROGRAMME SPECIFIC OUTCOMES (PSOs)

- PSO1. Problem Analysis:** Able to arrive solutions to real time problems related to various domains of civil engineering through problem solving skills.
- PSO2. Design and Management:** Able to design systems, components and processes considering safety, quality and cost consideration and able to prepare project documents, engineering drawings and construction schedules

Editors:
Ms. R. Anuja,
AP/Civil Engineering
Mr. M. Sudharsanan,
AP/Civil Engineering

Editorial Team:
S. Siranjeevi (21BCE026)
P. Kishore (21BCE022)
S. Harinivas (22BCE028)



Department of Civil Engineering
Dr. Mahalingam College of Engineering and Technology
(An autonomous Institution)

Affiliated to Anna University, Chennai & approved by AICTE,
Accredited by NAAC with A++
Accredited by NBA - Tier I (Auto, Civil, CSE, EEE, ECE, ME & IT)
Udumalai Road, Pollachi - 642 003

www.mcet.in

Reach us

@civil_mcet_2007

@Civil MCET

@Civil MCET

About MCET

Dr. Mahalingam College of Engineering and Technology (MCET) was established in the year 1998 by Dr. M. Manickam with a view to commemorate the 75th birthday of his beloved father Arutchelvar Dr. N. Mahalingam with a mission to impart high quality competency based education in Engineering & Technology to the younger generation to acquire the required skills and abilities to face the challenging needs of the industry around the globe. MCET is a self-financing, co-educational Autonomous Engineering College and it is approved by All India Council for Technical Education (AICTE), New Delhi & affiliated to Anna University, Chennai. The Institution has been accredited by NAAC with A++ grade and all eligible UG Programmes are accredited by NBA. MCET currently offers 10 UG 6 PG and 5 doctoral Programmes in Engineering, Technology and Science.

About the Department

Civil Engineering is the oldest engineering discipline that deals with the planning, design, construction and maintenance of the physical and natural built environment, including works like buildings, bridges, canals, dams and roads. The department of Civil Engineering at MCET was started in the year 2007 with B.E. - Civil Engineering Program and extended in 2012 for Post Graduate program in M.E. - Structural Engineering. The Department of Civil Engineering at MCET has highly qualified and experienced faculty in diversified domains which helps to enlighten the young minds of students in the theoretical and experimental aspects. Department has state-of-art infrastructural facilities which provide expertise and facility to work on emerging technologies. In a nut shell the department is well nurtured to cater the needs of education through industry oriented curriculum, research, consultancy, co-curricular and extra-curricular programs for the career enhancement of the students.

Department Vision

To develop Competent Civil Engineers to meet the infrastructure challenges of India and the world.

Department Mission

- To become one of the reputed departments offering Civil Engineering Program in the country.
- To produce excellent engineers to cope up with the changes through dynamic, innovative, and flexible curriculum.
- To provide a conducive environment for teaching & learning and to develop leaders with effective communication skills.
- To conduct quality research driven by industry & societal needs and provide affordable engineering solutions in an ethical way.

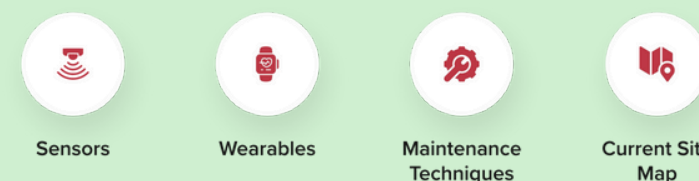
Programme Educational Objectives

- PEO1:** Graduates who effectively demonstrate engineering knowledge, problem solving skill, design capabilities and entrepreneurial skills by providing practical solutions.
- PEO2:** Graduates who effectively demonstrate professionalism in multi-disciplinary engineering environment, leadership quality, teamwork and engage in life-long learning.
- PEO3:** Graduates who demonstrate an ethical commitment to the community and the profession through involvement with professional societies.
- PEO4:** Graduates who make contributions to knowledge and establish best engineering practice through research and development.

IoT in Construction Industry



Challenges in the Construction Industry



Applications: IoT in Construction



Use Cases of IoT

Student Corner

CHALLENGES IN HOUSE CONSTRUCTION: ADDRESSING COMMON ISSUES

Insufficient Risk Management

Home construction processes are relatively shorter than other projects which have long-term safeguards to accommodate the chances of many risks emerging unexpectedly.

Short-term issues, when left out of the planning equation, can quickly snowball to have a significant impact on the bottom line of a construction project.

These short-term issues include subcontractors that turn out to be unreliable, changing needs of stakeholders, and scheduling conflicts among other issues that could derail a construction project.

Experts advise always having contingency plans by building some wiggle room into schedules and investing in workers who have safety training certifications to avoid potential issues.

A lack of structure

Without clearly-defined goals, it is difficult to get a construction project done efficiently. Constructing a building can easily fall behind schedule and run over budget if there are no clear targets to be hit. Therefore, experts recommend defining a clear project scope to hold all the different stakeholders accountable for their roles. Try to break down important roles and goals into smaller daily targets for different groups of individuals to accomplish. If a goal is not met on a specified day, it should be noted down and compounded into the following day.

Do as much as you can to keep involved stakeholders accountable through the different set processes. This will go a long way in keeping the project from crumbling beneath you.

Poor Communication

Communication is an important aspect of any profession, and it is especially important when a piece of work is delegated amongst different individuals. Without clear communication, important tasks can slip through the cracks with the team remaining unaware of issues until it is too late and costly to rectify the issue.

Experts advise creating a clear communication hierarchy with all involved parties that allow team members to stay apprised of the progress and obstacles at the end of each day of the construction process.

This way, problems can be recognized early and solved proactively. When in-person meetings are impractical, find means of engaging stakeholders in calls and online meetings as an excellent solution to keeping all major stakeholders informed of the progress.

Unrealistic Expectations and Poor Forecasting

Clients are prone to making some big asks, particularly when wanting the construction process completed on a limited budget or an accelerated schedule.

Student Corner

There are challenges associated with these expectations.

Working with unrealistic goals can hinder productivity, granted that it may result in exerting oneself and their team with the knowledge that they will fall short of expectations.

It is worth noting that some expectations are set as a result of bad forecasting which focused on long-term implications rather than short-term conditions.

To prevent yourself from falling victim to poor forecasting, try to break down forecasts into monthly, weekly, and daily goals and discuss them with your construction team to see if they are feasible. If necessary, communicate any potential issues with the involved stakeholders.

Create an alternative plan so that your construction team can see an aggressive yet achievable budget and schedule breakdown. Based on this plan you can manage your expectations from the start of the construction process so that you can set up a winning project.

Limited Skills

The construction industry is a reputation-based business, and your contractor may tend to work with people whom they know and trust. While this can be a great thing because teams that are used to working together can be incredibly efficient, there can be skill gaps in the construction team to cause some delays. The solution to this challenge is to be aware of the skill gaps in the people you hire for your construction project. Once you detect any gaps, you can enlist help from various construction experts to fill the gaps as quickly and efficiently as possible.

External Factors

Some unforeseen external factors affect the efficiency of any construction plan. They may not be perceived during the planning phase and they can change the course of construction when there are no contingency plans for emerging issues.

Some of them include;

Acts of nature like hurricanes, earthquakes, and heavy rainfall.

Widespread diseases that affect the ability of crew members to work well. Covid-19 is one such recent emergence that caught many home builders off-guard.

Lighting strikes can cause damage and injuries at construction sites.

The power of the national and local government to interrupt a project.

The construction companies face many issues before and during the project's implementation. Everyone, whether a contractor with ten or twenty years of experience, encounters specific challenges that must be addressed as soon as possible.

-Keerthana.A-III year-Civil Engineering