

## Questions:

- What are the daily and long term tasks that I would be performing in this career?
  - Daily tasks include combining math, chemistry, physics, and engineering principles to design processes for chemical production. This includes products for manufacturing and overall chemical production.
  - Typically once a prospective engineer graduates college they enter the workforce as a general chemical engineer and become a member of a project/ design team. After more experience and training the next step is what is considered a junior engineer where the engineer would have more responsibility and have more say in the design team. From there after some additional training and continuing education one can become a professional engineer where they have the ability to head design teams and make major decisions regarding a particular project. At this point a professional engineer can also look into research fields or opportunities or management positions.
- What kind of college degree is required for this career?
  - The only required degree that a chemical engineer must have is a bachelor's degree in chemical engineering from a university/ program that is an ABET accredited program.
    - An ABET accredited program includes extensive courses in chemistry, physics, mathematics, and some biology. Further engineering education through these programs include applying this science to design, analysis, and control of physical, chemical, and biological processes.
  - There is a benefit to having a master's degree or some sort of higher education. While there is not a requirement for many entry level positions there is the possibility for more opportunity in higher level positions in a chemical engineering career.
- How applicable is a chemical engineering degree to other fields that are similar?
  - Chemical engineering is a broad field that covers many smaller specializations. The knowledge gained from obtaining a chemical engineering degree can be utilized in several other fields all based on chemistry.
    - These possible careers include architectural and engineering managers, biomedical engineers, chemical technicians, chemists and materials scientists, nuclear engineers, occupational health and safety specialists and technicians.
- What kind of knowledge or specific terminology do I need to know to truly understand this field?
  - It is important to understand concepts in chemistry, physics, mathematics, and some biology. One of the major concepts that is vital to understanding chemical engineering is the science of processes. Chemical engineers work constantly with

developing processes so I would need to gain a better understanding of processes and how that interconnects with chemistry. Additionally, it is important to understand the engineering design process in order to gain more knowledge about how to design, test, and implement a certain chemical process.

- What does this future look like for this career?
  - The job outlook for chemical engineering is overall positive. There is an expected 4% increase in the number of chemical engineering jobs in the next 10 years. While some jobs will depend on the demand for products there are many other avenues that a professional with a chemical engineering degree could take.
  - The major thing that the field of chemical engineering needs to do to ensure job security is staying at the head of new technological innovations and being the first sector to work to implement these new technologies. There are also some newer fields that chemical engineers could specialize in including nanotechnology, alternative energies, and biotechnology.
- Is there a point where this career would become obsolete?
  - Assuming that chemical engineers continue to move with the times and implement and use new technologies as they are developed is vital to the overall survival of this career. There is not a true possibility that chemical engineers will become obsolete at any point since products will always need intricate processes to mass produce them. Much of the infrastructure that we find in our world today is dependent on chemical engineers and is not something that will ever likely be able to be managed by any other field or by some kind of technology.
- Is there any continuing education that I would need to have after beginning this career?
  - There is significant continuing education in this particular field
  - When a chemical engineer finishes college whether that be with a bachelor's or master's degree they will not be considered a true professional engineer. After an engineer graduates college they will take a Fundamentals of Engineering exam and if they pass it they will be considered a junior engineer. Then after about 4 years of work experience the engineer will take a Professional Engineering exam and if they earn a passing score they will then be considered a professional engineer.
  - Once an engineer is considered a professional engineer they will be issued a state license that is usually transferable across several states. Many states also require continuing education to maintain an engineering license.