ESSENTIAL ENGINEERING SKILLS

1. Problem-solving

One of the most crucial skills an engineer can possess is strong problem-solving abilities. A large part of an engineer's job is assessing a situation, identifying problems and then finding solutions. Employers will want to see that you're capable of handling obstacles in your daily work. Example: "Adept at identifying problems resulting in inoperable production machinery, troubleshooting potential causes and devising a solution to return the machine to operating condition as promptly as possible."

2. Computer science

No matter what field of engineering you are working in, it is likely that you will be required to use computers to do your job effectively. Skills like programming are valuable across a broad range of engineering disciplines and are appealing to prospective employers. Example: "Utilized computer modeling programs to develop simulations for structural designs and test the load capacity before finalization of project blueprints."

3. Industry skills

A hiring professional must be able to determine if you are capable of performing as an engineer in the field of the company for which you are applying. If you don't have direct experience in the field, assess which of your skills are most relevant and highlight them in your prior engineering positions. Example: "Performed inspections on active construction projects by contractors, ensuring that all materials and methods being used are to the design specifications, and all craftsmanship is of requisite quality for safe construction."

4. Pressure management

Engineering projects can be challenging, so a candidate needs to be reliable under stress. By highlighting your ability to deliver in difficult situations, you can make yourself appealing to potential employers. Example: "Managed a team of engineers constructing a new prototype model on an accelerated timeline to have the test model available in time for demo at a major convention that could not be rescheduled, resulting in rave reviews from the press following the debut presentation."

5. Teamwork

Few engineering projects will see an engineer working on their own without coworkers or outside professionals. Teamwork skills are essential for ensuring you can cooperate with teammates to succeed as a unit and perform to your highest combined ability. Example: "Worked alongside a team of five engineers to develop new body design, increase aerodynamics and improve overall fuel economy."

6. Creativity

Often when attempting to find a solution to an engineering problem, you may not have direct experience with an identical problem or need. In these situations, a creative mind can combine prior experiences in new ways to create a solution to the problem. Creativity is a very important skill that employers will be on the lookout for in your resume. Example: "Constructed a customized guide for use with a table saw to allow the carpentry team to more easily create required pieces of lumber, significantly reducing construction time for each project."

7. Structural analysis

One common requirement in several engineering fields is the need to perform structural analysis. This skill involves determining the strains that would be placed on a structure or machine under current designs and

assessing the ability to withstand those strains. Prior experience with structural analysis shows a potential employer that you are capable of making the calculations required to confirm that proposed plans are safe and functional. Example: “Performed quality checks on all new constructions after initial framing to ensure that structural integrity levels were sufficient to continue in the construction process.”

8. Communication

When working in engineering, you will often need to discuss plans or designs with others. The ability to clearly communicate is essential to collaborative work. It is particularly important when working with non-engineers, as the engineer must take technical information and convey it clearly to those without advanced technical knowledge. This way, progress and options are understood by everyone involved. Example: “Met weekly with executives and department managers to discuss the status of all ongoing engineering projects. Explained current projects in terms that all in attendance could understand and delivered updates on planned progress for the upcoming week.”

9. Attention to detail

When working in a field where precision is important, such as engineering, an individual must have strong attention to detail. Small errors in the drafting or execution of technical plans can result in financial losses and potentially dangerous situations. Employers will want to see an applicant who can demonstrate their ability to not overlook small but important details. Example: “Tested malfunctioning computer chips, troubleshooting for apparent signs of physical damage and performing repairs and installations, paying close attention to the precise placement of all wiring and contact points.”

10. Educational commitment

Anytime you are working in a technological field, be aware that it is constantly changing as new technologies are created and old technologies are improved. The ability to continue learning while in the workforce is valued by employers, as it ensures you always remain on the cutting edge of the field. Continued education also helps to ensure minimal mistakes in the future due to using outdated tools or methods. Example: “Attended conferences with industry leaders, participating in seminars and lectures about new methods of performing my daily responsibilities to increase personal and company productivity.”

11. Data modeling

Often an engineer will be tasked with taking gathered data and creating models that analyze the data to conclude, which can then be applied to practical work. It’s important that all modeling and extrapolation from models are performed correctly to avoid costly spending on ineffective productions. Demonstrating your familiarity with data modeling structures will help make you a more appealing candidate to your potential employer. Example: “Analyzed rainfall records on a localized level to create expected rainfall and drainage models. Utilized models in the planning of a newly constructed housing development to avoid placing homes in areas at high risk of flooding or erosion.”

12. Leadership

An engineer is often placed in a position of leadership, even when not formally in a management position or tasked with working with other departments to execute plans. An engineer with the ability to motivate others is an especially valuable member of any staff and is an exciting prospect for any hiring manager. Example: “Oversaw the creation of housing development, working in close conjunction with the construction team to ensure all plans were followed and executed satisfactorily.”