Advancing San Diego

In partnership with

BORDER REGION TALENT PIPELINE K-16 COLLABORATIVE

Verified Program Application Guide

Engineering—2023

The following application can be completed in parts. The first two sections are required, then you can use the table of contents to skip ahead or go back to sections. The table of contents is available throughout to application by clicking the three lines in the top left corner of the screen. You can use this application guide to review all the questions included in the application.

After the two required sections, the remaining sections are optional, but more complete sections make for a stronger application. Your responses will be saved, and you can return to review or edit responses **by using your unique link**. Once you submit the application (at the very end) you will no longer be able to edit your responses. You will see another warning before you click submit.

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General Information

1. Institution or university name
2. Point of contact
3. Total institution enrollments for the 2023-2024 year
4. Total institution completions for the 2022-2023 year
5. Program name
6. Program point of contact
7. Certificates or degrees offered within the program (select all that apply):
    - Internal Certificate
    - External Certificate (prepares students for a certificate offered outside your institution like CompTia)
    - Associate of Arts
    - Associate of Science
    - Associate degree for transfer (ADT)
    - Bachelor of Arts
    - Bachelor of Science
    - Other
8. Which role(s) does this program prepare students for? (select all that apply)
    - Assembler
    - Engineering Technician
    - Engineer (General)
9. Programmatic enrollments in 2023-2024
10. Programmatic completions in 2022-2023
11. Average completion time for the program
12. Gender representation (must add up to 100%)
13. Ethnicity representation (must add up to 100%)
14. Local vs non-local (must add up to 100%)

Diversity Equity & Inclusion

For the following questions, we are only looking for a list. Applicants that are invited to present to employers will have the opportunity to elaborate further on these efforts.

Advancing San Diego's mission is to improve access to high-wage, high-demand occupations for all San Diegans. Efforts around diversity, equity, and inclusion as well as efforts to reach and serve San Diegans are looked upon favorably for verification status. These questions are not required to complete the application, but the more questions that are answered the stronger the application will be considered.

1. List any other institutional or programmatic opportunities that make the learning environment accessible to a wider variety of populations. Examples might include full-time workers, parents, people with physical disabilities, people with learning challenges, unhoused people, and more.

2. List any institutional or programmatic efforts to recruit local residents for enrollment and workforce training. This can include relationships with K-12 institutions, other post-secondary institutions, the military, and more.

Hard Skills

The following sections will ask about the program's ability to teach the technical skills needed for entry-level engineering talent. None of these questions are required however, the more information that is provided the stronger the application will be. Applicants are encouraged to pay careful attention to the skills required for the positions selected at the beginning. For example, if you indicated that your program prepares students for a role as an engineering technician, responses to skills related to engineering technicians will be evaluated more closely.

1. List any courses or modules within the program that include <skill> as a learning outcome.
2. Are any of the courses or modules listed above required for program completion?
3. Upload the syllabus for one required course that includes <skill> as a learning outcome.

ROLE	SKILL
Assembler	**Basic electrical theory:** Knowledge of the function and operation of electrical equipment to ensure proper installation and to complete tasks such as troubleshooting electrical systems and equipment.
Assembler	**Basic tool knowledge:** Fundamental knowledge and ability to handle machines and tools.
Engineering	**Data analysis:** Build systems for collecting, validating, and preparing high-quality data.
Engineering Technician	**Equipment testing:** Develop criteria for test plans, test execution, and information capture for systems and components as a baseline for operational capability assessments.
Engineering Technician, Engineering	**Maintenance, debugging, & repair:** Regularly inspecting and servicing electrical, mechanical, industrial, production, or related systems and components to prevent future failures or restore to serviceable and acceptable operating conditions. Identify and resolve issues in systems.
Assembler	**Mechanical assembly:** Assemble components by mechanically fastening parts and subassemblies.
Engineering	**Model based systems engineering:** Knowledge of Methodology used to support the requirements, design, analysis, verification, and validation associated with the development of complex systems.
Engineering	**Project management principles:** Basic knowledge of project goal planning and communication.

Engineering	**Risk analysis:** Identifying potential hazards and assessing the likelihood and consequences of those hazards, as well as performing risk assessment and risk management.
Engineering Technician	**Safety:** Work with internal safety department to get all test equipment safety approved prior to manufacturing using test equipment.
Engineering Technician	**Standardization:** Standardize and check Measuring and Test Equipment (M&TE) to specification to ensure accuracy, repeatability, and reproducibility.
Engineering Technician	**Troubleshooting:** Trace errors within control systems and components.
Engineering	**Technical process documentation:** Crafting a record that gives in-depth information about the purpose, application, or creation of a product, program, or service
Engineering	**Test equipment and processes:** Designing and implementing effective testing procedures to ensure the quality and reliability of products and systems
Engineering Technician	**Test plan knowledge:** Ability to work through test plans developing test equipment into full production manufacturing equipment. Interpret engineer's requests and expectations and develop test plans accordingly.

4. What efforts does the program make to ensure students are cross-trained in multiple engineering related disciplines?
5. Which project management style(s) do students primarily learn/use?

Employability Skills

The following sections will ask about the program's ability to teach the employability skills (also known as 21st century skills or soft skills) needed for entry-level engineering talent. None of these questions are required however, the more information that is provided the stronger the application will be. These skills have been selected by employers for their importance in all engineering roles. Applicants are encouraged to respond to all questions.

1. **Critical thinking:** Uses logical thought processes to properly define challenges or problems, gather and interpret evidence and draw reasoned conclusions. Please provide a brief overview of how students' **critical thinking** is refined throughout this program.
2. **Detail-oriented:** Ability to pay close attention to details and ensure accuracy and completeness in work. It involves being meticulous and methodical, with a focus on precision and thoroughness. Please provide a brief overview of how students' ability to be **detail-oriented** is refined throughout this program.
3. **Dependability:** Building trust with others by keeping your word. Managing your time by planning and controlling how your work time is spent to achieve goals. Please provide a brief overview of how students' **dependability** is refined throughout this program.
4. **Problem Solving:** Applies critical thinking skills to solve problems by generating, evaluating, and implementing effective solutions. Please provide a brief overview of how students' **problem-solving** skills are refined throughout this program.

Industry Engagement

1. Select all forms of industry engagement and work-based learning that are embedded in the program:
    - Internships
    - Apprenticeships
    - Co-ops
    - Industry inspired/provided case studies or projects
    - Industry presentations
    - Industry related field trips
    - Other
    - None
2. How can employers engage in this program to recruit students or provide work-based learning experiences?