



Scouting America Engineering Merit Badge Program Detailed Guide & Rubric

Requirements that will be completed in their entirety with absolutely no preparation necessary during the Barber Scouting America Engineering Merit Badge Program:

- **Requirement 1**
- **Requirement 5**
- **Requirement 6e**
- **Requirement 6g**

Requirements that, due to the nature of their design, are unable to be fully completed as a group while upholding the standards of Scouting America's "Guide to Advancement." However, they will still be marked as "complete" on the day of meeting if they are prepared in the following manner and submitted on the day of our meeting:

- **Requirement 2** - Select an engineering achievement that has had a major impact on society. Using resources such as the internet (with your parent or guardian's permission), books, and magazines, find out about the engineers who made this engineering feat possible, the special obstacles they had to overcome, and how this achievement has influenced the world today. Tell your counselor what you learned.
 - *To be marked as complete, prepare a concise, yet thorough, research paper (2-3 paragraphs, no more than a page) that details what engineering marvel you chose, the engineers that made it possible, obstacles that were overcome throughout the project, and its impact on the world today.*
- **Requirement 3** - Explain the work of six types of engineers. Pick two of the six types and explain how their work is related to engineering.
 - *To be marked as complete, explain the work of six types of engineers in writing (1-2 sentences per engineer type), then choose two of the six types and explain how their work is related to engineering in a short response (3-5 sentences).*
- **Requirement 4** - Visit with an engineer (who may be your counselor, parent or guardian) and do the following:
 - a) Discuss the work the engineer does and the tools the engineer uses.
 - b) Discuss with the engineer a current project and the engineer's particular role in it.
 - c) Find out how the engineer's work is done and how results are achieved.
 - d) Ask to see the reports that the engineer writes concerning the project.
 - e) Discuss with your counselor what you learned about engineering from this visit.

- *To be marked as complete, reach out to an engineer and conduct an interview with them following the discussion points detailed in the requirement (parts A-D) prior to the badge program. Be prepared to discuss the interview and what you learned from it (part E) during the badge program (feel free to bring notes from the interview containing important/relevant information). Please provide the name and contact information of the person you interviewed.*
- **Requirement 7** - Explain what it means to be a registered Professional Engineer (P.E.). Name the types of engineering work for which registration is most important.
 - *To be marked as complete, prepare a written short response (3-5 sentences), explaining what it means to be a registered Professional Engineer, as well as the types of engineering work where registration is most important.*
- **Requirement 8** - Study the Engineer's Code of Ethics. Explain how it is like the Scout Oath and Scout Law.
 - *To be marked as complete, prepare a written short response (3-5 sentences) explaining how the Engineer's Code of Ethics is like the Scout Oath and Law.*
- **Requirement 9** - Find out about three career opportunities in engineering - pick one and research the education, training, and experience required for this profession. Discuss this with your counselor and explain why this profession might interest you.
 - *To be marked as complete, conduct the necessary research prior to the badge program to be able to actively and confidently participate in the round table discussion. Feel free to prepare notes with all relevant information (regarding the three career opportunities in engineering, the one you explored in detail, and why it interests you) and bring it with you to the discussion.*

In summary, the Barber Engineering Merit Badge Program will end with a guaranteed completion of requirements 1, 5, 6e, and 6g. Completion of requirements 4 and 9 will be granted to those who have made the necessary preparations and actively participate in the round table discussions. **If scouts are not adequately prepared or do not actively participate, their requirements will not be marked as complete.** Completion of requirements 2, 3, 7, and 8 will only be awarded to those who adequately prepare them and submit them as detailed in this outline. **If a scout fails to meet any of the requirements listed above, they will receive a partially filled out blue card that they may use to finish out the Engineering Merit Badge at their own pace and outside of the Barber Engineering Merit Badge Program.**

Please see the next page for an example template of how to format your work for Requirements 2, 3, 4, 7, and 8. Please bring your own notes for discussion for Requirements 4 and 9. Prior work must be typed or neatly handwritten and include the scout's first and last name, date of the merit badge program, and troop number.

John Smith

October 1, 2025

Troop 345

Barber Engineering Merit Badge Program

Requirement 2

Insert text here answering the prompt for this requirement.

Requirement 3

Insert text here answering the prompt for this requirement.

Requirement 4

Insert the name and contact information of the engineer you interviewed.

Requirement 7

Insert text here answering the prompt for this requirement.

Requirement 8

Insert text here answering the prompt for this requirement.