



Scouting America™

STEM Merit Badge College 2026 Class Catalog

Event Contacts

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Class Catalog

STEM Merit Badge College 2026 at Purdue Northwest Student Union & Library Building

Merit Badge Academy (Scheduled Classes)



MBAL999 Artificial Intelligence (AI) (2025 version) (1)

The Artificial Intelligence (AI) Merit Badge introduces Scouts to the fundamentals of AI and automation through hands-on activities and real-world examples. Scouts learn key terms, explore how AI and automation are used in daily life, school, and work, and examine ethical concerns like bias and privacy. They also investigate deepfakes, practice communicating effectively with AI, and apply their knowledge through a project or teaching activity. Finally, Scouts explore career paths in AI by researching or interviewing professionals in the field.

9-12 PM

Instructor: Dan Vergauwen

Maximum number of participants: 10

1-4 PM

Maximum number of participants: 10

Prerequisites: Prerequisites: Familiarize yourself with Scoutly the AI chatbot @ <https://www.scouting.org/>. We will be using Scoutly along with other open-source AI tools.

1: Key Concepts. Define the following terms and share the meaning of each with your counselor: artificial intelligence (AI), artificial intelligence agents, automation, basic programming, bots, data, databases, digital workers, general AI, machine learning (ML), narrow AI, superintelligent AI, tasks, triggers, workflows, and variables.

2A: Identify ten examples of how AI is currently used in everyday life.

2B: Identify five examples of how AI is currently used in the workplace.

2C: Identify five examples of how AI can be used at school or in support of your education.



MBAL889 Artificial Intelligence (AI) (2025 version) (2)

The Artificial Intelligence (AI) Merit Badge introduces Scouts to the fundamentals of AI and automation through hands-on activities and real-world examples. Scouts learn key terms, explore how AI and automation are used in daily life, school, and work, and examine ethical concerns like bias and privacy. They also investigate deepfakes, practice communicating effectively with AI, and apply their knowledge through a project or teaching activity. Finally, Scouts explore career paths in AI by researching or interviewing professionals in the field.

1-4 PM

Maximum number of participants: 10

Prerequisites: Prerequisites: Familiarize yourself with Scoutly the AI chatbot @ <https://www.scouting.org/>. We will be using Scoutly along with other open-source AI tools.

1: Key Concepts. Define the following terms and share the meaning of each with your counselor: artificial intelligence (AI), artificial intelligence agents, automation, basic programming, bots, data, databases, digital workers, general AI, machine learning (ML), narrow AI, superintelligent AI, tasks, triggers, workflows, and variables.

2A: Identify ten examples of how AI is currently used in everyday life.

2B: Identify five examples of how AI is currently used in the workplace.

2C: Identify five examples of how AI can be used at school or in support of your education.



MBAL998 Chemistry

Chemistry explores how substances react with each other, how they change, how certain forces connect molecules, and how molecules are made are all parts of chemistry. Stretch your imagination to envision molecules that cannot be seen - but can be proven to exist - and you become a chemist.

9-12 PM

Instructor: John Bell

Maximum number of participants: 10

Prerequisites: Prerequisites: 1, 2a, 4, 5,6,7,8.

For #4, choose 2 options.

For #1, 5, 6, 7, and 8, complete these entirely.

For prerequisites, bring answers in a hard-copy document that we can review and discuss, preferably printed rather than handwritten. (Anything illegible won't be accepted.)

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MBAL997 Cybersecurity (2025 version)

The Cybersecurity Merit Badge equips Scouts with essential knowledge and skills to navigate and protect the digital world. Scouts learn about online safety, ethical behavior, cyber threats, and how to defend against them using tools like firewalls, antivirus software, and strong passwords. They explore encryption, connected devices, and the risks of public Wi-Fi, while also practicing safe habits like updating software and backing up data. Through hands-on activities, Scouts investigate real-world cyber incidents, participate in cybersecurity challenges, and explore career opportunities in the field.

9-12 PM

Maximum number of participants: 10

1-4 PM

Instructor: Dan Vergauwen

Maximum number of participants: 10

Prerequisites: Prerequisites:

1A: View the Personal Safety Awareness "Digital Safety" video (with your parent or guardian's permission). <https://www.scouting.org/training/youth-protection/scouts-bsa/>

1B: Explain to your counselor how to protect your digital footprint, such as while using social media, mobile device apps, and online gaming. Show how to set privacy settings to protect your personal information, including photos of yourself or your location. Resource: Protecting Your Digital Footprint - Keys to Cybersecurity (website)

Use the resource above and complete the activity. Bring a copy of your completed certificate or a photo on your phone

4E: Current Events. Do ONE of the following:

(1) Read an article or a news report about a recent cybersecurity incident, such as a data breach or malware infection. Explain how the incident happened (to the best of your ability based on the information available) and what the consequences are or might be to the victim.

(2) With your parent or guardian's permission, watch a movie or read a book in which cybersecurity plays a significant role. Discuss how cybersecurity topics were depicted and how realistic you think it was. Resources: Suggested Movies: WarGames (1983, PG), Tron (1982, PG), Code 2600 (2011 Documentary, PG), Superman III (1983, PG), Scooby-Doo and the Cyber Chase (2001, Not Rated), Cyber War 2022 (2023 Documentary, G), Hackers (1995, PG-13), Terms and Conditions May Apply (2013 Documentary, Not Rated), Cyber War (2016 Documentary, Not Rated), and Zero Days (2016 Documentary, PG-13).

6A: (a) Research and explain to your counselor three situations where encryption is used in cybersecurity. For each situation, describe what kind of encryption is used and why it is important.



MBAL996 Digital Technology

Technology has come a long way since Computers merit badge was first introduced in 1967. This badge will teach Scouts about technology in the digital age.

1-4 PM

Instructor: Mike Failor

Maximum number of participants: 15

Prerequisites: Prerequisites (Must Be Completed Before Class):

1. Requirement 1: Complete the Digital Safety (Cyber Chip) requirement.

2. Requirement 6: Complete THREE digital projects (examples: spreadsheet roster, flyer, letter, presentation, graphic, etc.). Scouts must bring either printed copies or a flash drive/cloud access to show their work.

Strongly Recommended (to ensure completion during the session):

- Research one digital technology career (Requirement 9).
- Identify a local e-waste or battery recycling center (Requirement 8).

What to Bring:

- A smartphone, tablet, or laptop with internet access (if possible).
- Their three completed digital projects.
- A notebook and pen.

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MBAL991 Engineering (2024 version)

Engineers use both science and technology to turn ideas into reality, devising all sorts of things, ranging from a tiny, low-cost battery for your cell phone to a gigantic dam across the mighty Yangtze River in China.

9-12 PM

Instructor: Jonathan Grabowy

Maximum number of participants: 20

Prerequisites: Scouts will need to review items 2,3, 8 and 9, and we will have a class discussion on those.

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.

3. Explain the work of six types of engineers. Pick two of the six types and explain how their work is related to engineering. Scouts should find two types of engineering for a class discussion

8. Study the Engineer's Code of Ethics. Explain how it is like the Scout Oath and Law. - Scouts will need to review the Engineering Code of Ethics to participate in a class discussion.

9. Explore careers related to this merit badge. Research one career to learn about the training and education needed, costs, job prospects, salary, job duties, and career advancement. Your research methods may include-with your parent or guardian's permission-an internet or library search, an interview with a professional in the field, or a visit to a location where people in this career work. Discuss with your counselor both your findings and what about this profession might make it an interesting career.

Text is the best way to contact me. 773-875-2004



MBAL995 Environmental Science (2025 version)

While earning the Environmental Science merit badge, Scouts will get a taste of what it is like to be an environmental scientist, making observations and carrying out experiments to investigate the natural world.

9-12 PM

Instructor: Daniel Rest

Maximum number of participants: 15

1-4 PM

Instructor: Daniel Rest

Maximum number of participants: 15

Prerequisites: Prerequisites needed to earn a badge that day.

1 (prepare a written response to be read to the group at the beginning)

2A and 2B

6A or 6B or 6C

7A or 7B or 7C

11 (prepare a table which addresses each of the aspects listed in the requirement)



MBAL994 Nuclear Science (2026 version)

Nuclear science gives us a simple explanation of the natural world. The ultimate goal of nuclear science is to find out if there is one fundamental rule that explains how matter and forces interact. Earning the Nuclear Science merit badge is a chance for Scouts to learn about this exciting field at the cutting edge of science today.

9-12 PM

Instructor: Joe Sagerer

Maximum number of participants: 10

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MBAL993 Robotics (2026 version)

Build your own working robot with the Robotics Merit Badge. Learn about the robotics industry, discover the different fields of robotics, explore the available career options in robotics, and design, build, program and test your own robot.

9-12 PM

Instructor: Michael Sommer

Maximum number of participants: 8

1-4 PM

Instructor: Michael Sommer

Maximum number of participants: 8

Prerequisites: Prerequisite: Requirement 4



MBAL992 Space Exploration

Space is mysterious. We explore space for many reasons, not least because we don't know what is out there, it is vast, and humans are full of curiosity. Each time we send explorers into space, we learn something we didn't know before. We discover a little more of what is there.

1-4 PM

Instructor: Joni Mimnaugh

Maximum number of participants: 10

Prerequisites: We will not launch rockets at this event, so requirement 3 will need to be completed before or after.

3. Build, launch, and recover a model rocket. Make a second launch to accomplish a specific objective.

Scouts should provide a signed note from a Scout Leader, parent, or Rocket Launching Club approved by the Forest Preserve District of Du Page County. They must detail the date and location of the launch. They must detail the objective (purpose) of the second launch.

8. Explore careers relate it to this merit badge.

Please bring the Space Exploration Merit Badge Worksheets and the Merit Badge Book.



MBAL990 Sustainability

Learn to reduce waste and teach sustainable practices to others so you can help conserve Earth's resources with the Sustainability Merit Badge. Scouts will develop and implement a plan to reduce their water usage, household food waste, and learn about the sustainability of different energy sources, including fossil fuels, solar, wind, nuclear, hydropower, and geothermal.

9-4 PM

Instructor: Larry Desch

Maximum number of participants: 10

Prerequisites: Scouts need to look over the following merit badge requirements BEFORE the class and think about and/or do research for the answers. 1, 2b, 3a, 4a, 5a, 6a, 7b, 7d, 8b, 8c and 9.

It would be helpful if each Scout would print out and bring the Sustainability Merit Badge worksheet available from <http://www.usscouts.org>.

(Note: To complete the merit badge, each Scout will need to do 8a on their own and then email me a minimum of a 80-word report on their findings.)