

PowerPoint Presentation: Exploring STEM Majors for Community College Students

Slide 1: Title Slide

- **Title:** "Discover Your Future in STEM: A Guide for Community College Students"
 - **Subtitle:** "Explore Exciting Careers in Science, Technology, Engineering, and Mathematics"
 - **Visuals:** Vibrant background with images of STEM fields (e.g., a scientist in a lab, a coder at a computer, an engineer with blueprints, and a mathematician with equations).
 - **Text:**
 - Presented by: [Your Name/Organization]
 - Date: October 13, 2025
 - **Presenter Notes:** Welcome the audience, introduce yourself, and explain that this presentation will guide them through what STEM majors are, why they're exciting, and how community college students can pursue them.
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Slide 2: What is STEM?

- **Title:** "What Does STEM Stand For?"
 - **Content:**
 - **Science:** Exploring the natural world (e.g., biology, chemistry, physics).
 - **Technology:** Innovating with computers, software, and digital systems.
 - **Engineering:** Designing and building solutions (e.g., bridges, robots, apps).
 - **Mathematics:** Solving problems with numbers, patterns, and logic.
 - **Visuals:** Four quadrants, each with an icon or image representing Science (microscope), Technology (laptop), Engineering (gears), and Mathematics (graph).
 - **Presenter Notes:** Briefly define each area. Emphasize that STEM is about curiosity, problem-solving, and making a difference in the world.
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Slide 3: Why Choose a STEM Major?

- **Title:** "Why STEM Matters"
- **Content (Bullet Points):**
 - **High Demand:** STEM jobs are growing faster than non-STEM fields (e.g., 10.5% growth projected for STEM jobs vs. 7.5% for others, 2020-2030, per U.S. Bureau of Labor Statistics).
 - **Great Pay:** Median STEM salary is ~\$89,000/year vs. ~\$40,000 for non-STEM (2023 data).
 - **Impactful Work:** Solve real-world problems like climate change, healthcare, and technology innovation.

- **Diverse Opportunities:** From lab research to app development to space exploration.
 - **Visuals:** Pie chart showing STEM job growth or a collage of STEM professionals (diverse in gender, ethnicity, etc.).
 - **Presenter Notes:** Highlight how STEM careers are rewarding and accessible. Share a quick example, like how a computer science major helped develop a popular app.
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Slide 4: Popular STEM Majors

- **Title:** "Explore STEM Majors"
 - **Content** (Table or List):
 - **Science:** Biology, Chemistry, Physics, Environmental Science
 - **Technology:** Computer Science, Information Technology, Cybersecurity
 - **Engineering:** Civil, Mechanical, Electrical, Biomedical
 - **Mathematics:** Pure Math, Applied Math, Statistics
 - **Visuals:** Icons or small images next to each major (e.g., DNA for biology, circuit board for electrical engineering).
 - **Presenter Notes:** Explain that community colleges offer introductory courses for these majors, many of which transfer to four-year universities. Encourage students to explore what excites them.
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Slide 5: What Can You Do with a STEM Major?

- **Title:** "STEM Careers: Where Can You Go?"
 - **Content** (Examples with Brief Descriptions):
 - **Biologist:** Study ecosystems or develop new medicines.
 - **Software Developer:** Create apps, games, or AI systems.
 - **Civil Engineer:** Build bridges, roads, or sustainable cities.
 - **Data Scientist:** Analyze data to solve business or societal problems.
 - **Visuals:** Photos of professionals in action (e.g., a biologist in a forest, a coder at a desk).
 - **Presenter Notes:** Share a success story of a community college student who pursued a STEM career. Emphasize that STEM fields are diverse and creative.
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Slide 6: Getting Started at Community College

- **Title:** "Your STEM Journey Starts Here"
- **Content:**
 - Take **foundational courses:** Math (e.g., Algebra, Calculus), Intro to Programming, General Chemistry, Physics.
 - Join **STEM clubs** or programs (e.g., robotics club, Women in STEM).
 - Meet with **advisors** to plan transferable credits to a four-year university.

- Explore **internships** or research opportunities (many are available to community college students).
 - **Visuals:** Image of students in a lab or at a campus event.
 - **Presenter Notes:** Reassure students that community college is a great starting point. Highlight local resources (e.g., specific STEM programs at your college).
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Slide 7: Overcoming Challenges in STEM

- **Title:** "You Can Succeed in STEM!"
 - **Content:**
 - **Common Concerns:**
 - "I'm not good at math/science." (Solution: Tutoring, study groups, practice.)
 - "STEM is too hard." (Solution: Start with introductory courses; build confidence.)
 - "I don't see people like me in STEM." (Solution: Highlight diverse role models.)
 - **Resources:**
 - Free tutoring at community colleges.
 - Online platforms like Khan Academy or Codecademy.
 - Mentorship programs (e.g., MESA, Society of Women Engineers).
 - **Visuals:** Inspirational image of a diverse group of students collaborating.
 - **Presenter Notes:** Encourage a growth mindset. Share that many successful STEM professionals started with doubts but persevered.
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Slide 8: Transferring to a Four-Year University

- **Title:** "From Community College to a STEM Degree"
 - **Content:**
 - **Plan Early:** Work with a transfer advisor to ensure credits align with university requirements.
 - **Associate Degrees:** Earn an Associate of Science (AS) in a STEM field for smoother transfer.
 - **Guaranteed Transfer Programs:** Many states have pathways to public universities (e.g., California's TAG program).
 - **Scholarships:** Look for STEM-specific scholarships (e.g., NSF scholarships, Google's Women Techmakers).
 - **Visuals:** Flowchart showing the path from community college to university (e.g., AS degree → Bachelor's degree).
 - **Presenter Notes:** Emphasize that community college is a cost-effective way to start a STEM degree. Mention local university partnerships if applicable.
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Slide 9: Real Stories: STEM Success from Community College

- **Title:** "Inspiring STEM Stories"
 - **Content** (Example Stories, anonymized or general):
 - Maria: Started at community college, took intro programming, now a software engineer at a tech company.
 - Jamal: Transferred to a university with an AS in biology, now researching renewable energy.
 - **Visuals:** Photos of graduates or stock images of professionals (ensure diversity).
 - **Presenter Notes:** Share 1-2 brief stories (real or hypothetical) to make STEM feel attainable. If possible, include local alumni stories.
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Slide 10: Take the Next Step!

- **Title:** "Your STEM Adventure Awaits"
 - **Content:**
 - **Action Steps:**
 - Enroll in a STEM course next semester (e.g., Intro to Computer Science).
 - Visit your college's STEM center or career services.
 - Attend a STEM workshop or guest speaker event.
 - **Get Inspired:** "The world needs your ideas—STEM is where you can make them happen!"
 - **Visuals:** Motivational image (e.g., a rocket launching, symbolizing growth).
 - **Presenter Notes:** End with enthusiasm. Invite students to ask questions or meet with you after for guidance.
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Slide 11: Questions & Resources

- **Title:** "Questions? Let's Connect!"
- **Content:**
 - **Contact:** [Your email, office hours, or STEM center contact info]
 - **Resources:**
 - College STEM website: [Insert URL]
 - STEM career exploration: www.bls.gov (Occupational Outlook Handbook)
 - Free learning: www.khanacademy.org, www.codecademy.com
- **Visuals:** QR code linking to your college's STEM page or a resource list.
- **Presenter Notes:** Open the floor for questions. Encourage students to explore resources and reach out for support.

To make the PowerPoint presentation for community college students curious about STEM majors even more engaging while adding a comparison between STEM and non-STEM careers, I'll revise the previous

outline to include a new slide (Slide 6) dedicated to comparing STEM and non-STEM careers. This slide will highlight key differences in job growth, salary, impact, and challenges to help students make informed decisions. I'll also adjust the flow to integrate this comparison seamlessly while maintaining the interactive, dynamic, and relatable elements from the previous version. The pros and cons of STEM and emerging STEM majors from the prior response are retained, and the non-STEM comparison is designed to complement them. Below is the updated presentation outline with detailed content, visuals, engagement strategies, and presenter notes, optimized for a community college audience.

PowerPoint Presentation: Discover Your STEM Spark!

Slide 1: Title Slide

- **Title:** "Launch Your Future: Exploring STEM Majors!"
 - **Subtitle:** "Unleash Your Potential in Science, Technology, Engineering, and Math"
 - **Visuals:**
 - Animated background with orbiting planets, glowing circuits, or a futuristic skyline.
 - Looping GIF of a rocket launching or a robot waving to grab attention.
 - **Text:**
 - Presented by: [Your Name/Organization]
 - Date: October 13, 2025
 - **Engagement Feature:**
 - QR code linking to a poll (e.g., via Mentimeter): "Which sounds more exciting: STEM careers (like coding or engineering) or non-STEM careers (like teaching or business)?"
 - Display poll results in Slide 4.
 - **Presenter Notes:**
 - Start with enthusiasm: "Who's ready to explore a world of robots, discoveries, and world-changing careers?"
 - Explain the poll and encourage students to scan the QR code.
 - **Design Tip:** Use a vibrant blue-orange gradient template with a bold, modern font (e.g., Montserrat).
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Slide 2: What is STEM?

- **Title:** "STEM: Your Ticket to the Future"
- **Content:**
 - **Science:** Explore the universe (e.g., biology, chemistry, physics).
 - **Technology:** Build apps, games, or AI.
 - **Engineering:** Design bridges, robots, or medical devices.
 - **Mathematics:** Solve problems with data and logic.
- **Visuals:**

- Four clickable icons (microscope, laptop, gears, graph) that zoom in to reveal a fun fact (e.g., “Biologists found glowing jellyfish!”).
 - Short video clip (5-10 seconds) of a drone or lab experiment.
 - **Engagement Feature:**
 - Ask: “Raise your hand if you’ve ever wanted to code a game or explore space!” Pause for responses.
 - **Presenter Notes:**
 - Say: “STEM is about curiosity and creating the future YOU want!”
 - Use clickable icons for interactivity.
 - **Design Tip:** Animate “STEM” letters to pop in with a “whoosh” sound effect.
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Slide 3: Why Choose a STEM Major?

- **Title:** "Why STEM Rocks!"
 - **Content:**
 - **High Demand:** STEM jobs grow 10.5% vs. 7.5% for non-STEM (2020-2030, U.S. Bureau of Labor Statistics).
 - **Great Pay:** Median STEM salary ~\$89,000/year vs. ~\$40,000 for non-STEM (2023 data).
 - **Impact:** Solve global issues like climate change or pandemics.
 - **Creativity:** Design games, explore Mars, or invent tech.
 - **Visuals:**
 - Animated bar graph comparing STEM vs. non-STEM job growth/salaries (bars “grow” via animation).
 - Rotating carousel of diverse STEM professionals (coder, astronaut, engineer).
 - **Engagement Feature:**
 - Show poll results from Slide 1: “Here’s what YOU said about STEM vs. non-STEM careers!”
 - Ask: “Who wants to earn big AND make a difference?” Encourage cheers.
 - **Presenter Notes:**
 - Share a relatable anecdote: “A community college student coded an app now used by millions!”
 - Set up the comparison slide by saying: “Let’s see how STEM stacks up against other careers.”
 - **Design Tip:** Use green for STEM and blue for non-STEM in the graph; add a bounce animation to text.
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Slide 4: Popular STEM Majors

- **Title:** "Choose Your STEM Path"
- **Content** (Interactive List):

- **Science:** Biology (study life), Chemistry (create solutions), Physics (uncover forces), Environmental Science (protect Earth).
 - **Technology:** Computer Science (code apps), Cybersecurity (stop hackers), IT (manage systems).
 - **Engineering:** Civil (build infrastructure), Mechanical (design machines), Biomedical (innovate healthcare).
 - **Mathematics:** Statistics (analyze trends), Applied Math (solve real problems).
 - **Visuals:**
 - “STEM Wheel” graphic where each major is a segment. Clicking reveals a description and image (e.g., DNA for biology).
 - Hover effect shows taglines (e.g., “Defend the Digital World” for Cybersecurity).
 - **Engagement Feature:**
 - Hand out index cards (or use a digital tool) for students to write a STEM major they’re curious about. Discuss a few later.
 - **Presenter Notes:**
 - Say: “You can start these majors right here at [College Name]!”
 - Highlight one major with a story (e.g., “A physics major helped design a Mars rover!”).
 - **Design Tip:** Use a spinning wheel animation or “reveal” effect for each major.
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Slide 5: Pros and Cons of STEM Majors

- **Title:** “STEM: The Upsides and Challenges”
- **Content** (Split into Two Columns):
 - **Pros:**
 - **Job Security:** High demand across industries (e.g., tech, healthcare).
 - **High Earnings:** STEM careers often pay above average.
 - **Impactful Work:** Solve global challenges like climate change.
 - **Flexibility:** Work in diverse fields, from startups to research labs.
 - **Cons:**
 - **Challenging Coursework:** Math and science courses can be rigorous.
 - **Time Investment:** Some roles require advanced degrees.
 - **Fast-Paced Fields:** Need to keep learning new tech/skills.
 - **Initial Barriers:** May feel intimidating for beginners.
- **Visuals:**
 - Split-screen: Smiling STEM professional (pros) vs. student studying hard (cons).
 - Animated “balance scale” showing pros outweighing cons.
- **Engagement Feature:**
 - Quick poll (via raised hands or digital tool): “Which pro excites you most? Job security, pay, impact, or flexibility?”
 - Share: “80% of STEM students say the challenges are worth it!” (hypothetical for motivation).
- **Presenter Notes:**
 - Say: “Every challenge has a solution—tutoring and mentors will help you shine!”

- Transition to non-STEM comparison: “Now, let’s see how STEM compares to other paths.”
- **Design Tip:** Use green checkmarks for pros, orange caution signs for cons; animate the scale to tilt toward pros.

Slide 7: Emerging STEM Majors

See powerpoint... Add those emerging majors

Tips to be successful

- **Build a Strong Foundation:** Master core concepts in math, science, and critical thinking early on. For example, proficiency in algebra and calculus is crucial for most STEM disciplines. Use resources like Khan Academy or MIT OpenCourseWare for free, structured learning.
- **Stay Curious and Ask Questions:** Cultivate a mindset of curiosity. Explore why things work the way they do. Engage in discussions, attend seminars, or follow X posts from STEM professionals to spark new ideas and stay updated on trends.
- **Develop Problem-Solving Skills:** STEM is about solving real-world problems. Practice breaking down complex issues into manageable parts. Platforms like LeetCode (for coding), Project Euler, or physics problem sets can sharpen this skill.
- **Learn to Code:** Coding is a universal tool across STEM. Start with languages like Python or R, which are versatile for data analysis, AI, and scientific computing. Free resources like Codecademy or freeCodeCamp can get you started.
- **Embrace Failure as Learning:** Experiments and projects often fail, but each failure teaches you something. Document what went wrong and iterate. Thomas Edison famously tested thousands of materials before perfecting the light bulb.
- **Network and Collaborate:** Connect with peers, professors, and professionals. Join STEM clubs, attend hackathons, or engage in online communities like GitHub or X groups focused on your field. Collaboration often leads to innovation.

- **Stay Updated and Adapt:** STEM fields evolve rapidly. Follow journals, blogs, or X accounts of thought leaders to stay informed about breakthroughs. For example, AI advancements are shared frequently on X by researchers and companies.
- **Develop Soft Skills:** Communication, teamwork, and time management are critical. Being able to explain complex ideas simply (e.g., to non-technical stakeholders) sets you apart. Practice presenting your work clearly.
- **Pursue Hands-On Experience:** Internships, research projects, or personal projects (like building an app or conducting a small experiment) provide practical skills. Employers and grad schools value applied experience over grades alone.
- **Manage Time and Avoid Burnout:** STEM can be demanding. Use tools like Pomodoro or task managers to stay organized. Balance work with exercise, sleep, and hobbies to maintain mental health.
- **Seek Mentorship:** Find a mentor in your field through university programs, LinkedIn, or professional organizations. A mentor can guide you through challenges and open doors to opportunities.
- **Diversify Your Knowledge:** While specializing is important, understanding related fields (e.g., data science for biologists or physics for engineers) can make you more versatile. Cross-disciplinary skills are highly valued.

Technical Skills

1. **Mathematical Proficiency:** Strong grasp of algebra, calculus, statistics, and probability. Essential for modeling, data analysis, and engineering design.
2. **Programming:** Familiarity with languages like Python, C++, Java, or R for software development, data science, and simulations. Tools like MATLAB or SQL are also valuable in specific fields.
3. **Scientific Method:** Ability to design experiments, collect data, and draw evidence-based conclusions, critical for sciences like biology, chemistry, or physics.
4. **Technical Tools:** Proficiency with field-specific software (e.g., CAD for engineering, LaTeX for research writing, or lab equipment for experimental sciences).
5. **Data Analysis:** Skills in interpreting and visualizing data using tools like Excel, Tableau, or Python libraries (e.g., Pandas, NumPy).

Analytical Skills

6. **Problem-Solving:** Ability to break down complex problems, identify patterns, and develop solutions. Practiced through puzzles, coding challenges, or research.
7. **Critical Thinking:** Evaluating evidence, questioning assumptions, and reasoning logically to make informed decisions.
8. **Attention to Detail:** Precision in calculations, coding, or experimental setups to avoid errors and ensure reliable results.

Soft Skills

9. **Communication:** Clearly explaining technical concepts to diverse audiences, both verbally and in writing (e.g., reports, presentations).
10. **Collaboration:** Working effectively in teams, as STEM projects often involve interdisciplinary groups or cross-functional teams.
11. **Time Management:** Prioritizing tasks and meeting deadlines, especially in fast-paced research or project environments.
12. **Adaptability:** Staying flexible to learn new tools, methods, or technologies as fields evolve (e.g., AI advancements or new lab techniques).

Field-Specific Examples

- **Science:** Lab techniques, hypothesis testing, and familiarity with tools like spectrometers or microscopes.
- **Technology:** Software development, cybersecurity principles, or cloud computing (e.g., AWS, Azure).
- **Engineering:** Design principles, prototyping, and knowledge of materials or systems (e.g., circuits for electrical engineering).
- **Mathematics:** Advanced skills in areas like linear algebra, differential equations, or number theory for theoretical or applied roles.

How to Develop These Skills

- **Practice:** Use platforms like LeetCode, Kaggle, or Coursera for coding and data analysis.
- **Projects:** Build portfolios with hands-on work (e.g., GitHub for code, lab reports for science).
- **Networking:** Engage with STEM communities on X or at conferences to learn from peers.
- **Continuous Learning:** Stay updated via journals, X posts from experts, or free resources like MIT OpenCourseWare

<https://www.southbaystem.org/volunteering/>

<https://californiasciencecenter.org/volunteer>

<https://www.elcamino.edu/support/resources/mesa/>

VolunteerMatch.org

CaliforniaVolunteers.ca.gov