

WHY IS STUDYING A STEM FIELD BENEFICIAL ?

There are many benefits and reasons to study in STEM:

Fosters creativity: Studying STEM can help improve a person's ability to develop unique ideas and craft alternative ways to handle a variety of subjects and topics. This approach is beneficial because it encourages innovation, ensuring that major industries can continue to grow and expand to meet the needs of the people.

Expands technical knowledge: The framework of STEM requires an extensive understanding of various processes, procedures and methodologies. As you become more familiar with these fields, you can further expand your current technical knowledge and skills to become a more well-rounded professional in the industry.

Increases job opportunities: Jobs within STEM continue to expand because these professions change how societies look to create new solutions on a global scale. Companies, organizations and governments rely on STEM professionals extensively, which further demonstrates that job opportunities are likely to continue growing for individuals in this field.

Diverse applications: One of the primary reasons for studying in a STEM field is that each one has diverse applications, ensuring you can use it within a variety of jobs and for many purposes. This helps to expand your career pool and ability to continue learning new ways to apply your specialized capabilities.

Improves problem-solving: A core element of STEM focuses on introducing new strategies and methods for solving common and novelty problems. As a student in this field, you can expect to become more adept at developing beneficial resolutions for diverse issues and conditions.

Supports critical thinking: As a professional within STEM, one of your responsibilities is to collect data and then think critically about what that data represents. This helps you come to more meaningful conclusions and gain a greater awareness about how different aspects within a framework interconnect.

Encourages experimentation: Experimentation is a central element of STEM fields because it allows practitioners to learn from their mistakes and improve on the original processes they discovered. By studying in one of these areas, you can hone your ability to experiment and try out new methods for accomplishing

your tasks and goals.

Rewards diligence: As you study STEM, you may encounter challenges in your workflow, as some experiments and results may not turn out as you intended. Remaining diligent and resilient in learning about your specialization can ensure that you learn from those errors and become more knowledgeable about how to resolve or avoid them in the future.

Teaches adaptability: STEM fields teach individuals how to adapt to rapidly changing industries as new ideas and innovations continue to reshape the ways people perform their jobs. By studying a STEM field, you may become more adept at adjusting to these unexpected changes or new processes.

Supports interdisciplinary learning: A significant benefit to studying STEM fields is that they usually intersect by sharing some of the same core principles, methods and concepts. Therefore, if you learn about one field, you can expect to become familiar with certain aspects of another.

Improves financial earnings: As you gain more expertise in STEM, you may be able to negotiate for a higher salary or wage. You can apply this method whether you're looking for a pay raise with your current employer or seeking a minimum base salary with a new company.



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Northern Cape Premier's BURSARY PROGRAMME

A STEM degree is a degree in the fields of science, technology, engineering, or mathematics.

4 TYPES OF STEM DEGREES

STEM stands for science, technology, engineering, and mathematics, and degrees in STEM can be broken down into these four broad categories. Let's take a closer look at each.



SCIENCE FIELDS OF STUDY

Science is the study of the material and physical and natural world. Many jobs in the sciences require at least a bachelor's degree in a related field.

Here are some science jobs to consider:

Pharmacist: A pharmacist is a professional who receives and fills out their patients' prescription drugs and medications. They possess a wide knowledge of various drugs to inform patients about the proper dosage and other safety guidelines.

Medical scientist: A medical scientist uses their expertise to research and identify the cause for specific diseases. They then work to develop methods for preventing those diseases or providing suitable and safe treatments.

Environmental scientist: An environmental scientist researches how to protect the environment. Many specialize in a specific field, like zoology, botany or preservation.

- o Nursing
- o Biology
- o Kinesiology and exercise science
- o Chemistry
- o Health sciences
- o Clinical laboratory technologist or technician
- o Exercise physiologist
- o Forest science technician
- o Veterinarian
- o Medical scientist
- o Genetic counsellor
- o Epidemiologist
- o Physician assistant
- o Nurse practitioner

TECHNOLOGY FIELDS OF STUDY

When we apply science and math to human activity, we get technology, a field with high demand for skilled workers. While not all tech jobs require a degree, many employers seek candidates through college recruiting programs, and some offer tuition reimbursement and opportunity for continuing education. As we rely more and more on technology, job opportunities should continue to expand.

Here are some technology jobs you can pursue:

Web developer: A web developer designs and creates websites for companies and clients. They pay attention to the visual aspects of the website and the practical functionality of it as well.

Programmer: A programmer uses complex computer languages to code and create a variety of computer software and applications. They also ensure that any coding systems are free of errors so they can operate as intended.

Information technology analyst: An IT analyst oversees the system upgrades and researches new devices and tools that can help improve a process. They use technology to meet business needs and improve productivity.

- o Computer science
- o Information science
- o Computer and information systems security
- o Special effects artist or animator
- o Software developer
- o Computer and information research scientist
- o Information security analyst

An advantage of technology careers is that some jobs offer the ability to work remotely. If you're looking for a career that you can do from home, a STEM degree in technology could open up new opportunities.

ENGINEERING FIELDS OF STUDY

If technology is the result of applying science and math to human activity, engineering comprises the methods that get us there—the design, building, and operation of machines, engines, and other structures.

Here are a few jobs you can get in engineering:

Biomedical engineer: A biomedical engineer creates a variety of solutions within the health care industry. They perform duties like designing health care systems, MRI machines and prosthetics.

Aerospace engineer: An aerospace engineer designs a variety of aeronautic devices like spacecraft, aircraft, missile systems and satellites. After the design stage, they then make and test their prototypes for functionality.

Civil engineer: A civil engineer designs and executes the construction of various structures, like roads, bridges and sewer

systems. During the creation process, they assess how to implement a project with minimal effect on the surrounding environment and ecosystem.

- o Mechanical engineering
- o Electrical and electronics engineering
- o Chemical engineering
- o Computer engineering
- o Petroleum engineer
- o Materials engineer
- o Aerospace engineering and operations technologist or technician
- o Environmental engineering technologist or technician
- o Chemical engineer
- o Technical writer
- o Industrial engineer

MATHEMATICS FIELDS OF STUDY

If you love mathematics, the science of numbers, quantity, and space, a STEM degree can set you on a path to a rewarding career. Mathematics offers career opportunities in aca Math skills translate across numerous jobs and industries. By earning a math-related degree, you could potentially build a career in any number of fields that interest you.

Here are some sample mathematics occupations:

Statistician: A statistician collects large amounts of numerical data and uses statistics to interpret what that data means. This helps them make more informed plans and decisions.

Actuary: An actuary uses complex database systems and statistical analysis to evaluate how likely an event is to occur. They then use this information to determine what types of insurance policies their customers qualify for.

Mathematician: A mathematician uses pure math techniques and theories to solve a variety of practical problems. They also collect data and present their findings to their employers or stakeholders.

- o Econometrics and quantitative economics
- o Applied mathematics
- o Economist
- o Operations research analyst
- o Data scientist
- o Mathematician or statistician