



ADVANCED
TECHNOLOGY
RESEARCH
COUNCIL

FUTURE-FOCUSED
ADVANCED TECHNOLOGIES
AND CAREERS

WHY DO THEY MATTER
AND WHAT TO STUDY





ATRC'S STRATEGIC OBJECTIVES

 Future-Proofing Our World

Position Abu Dhabi as a world-leading R&D hub by attracting and developing global and national talent in priority research areas

1

Contribute to Abu Dhabi's knowledge economy through commercialization of R&D outputs locally & globally

2

Develop local & global partnerships and create a dynamic R&D ecosystem that reinforces social & economic impact

3



THE **FUTURE** HAS **ARRIVED**,
IT'S **JUST NOT EVENLY DISTRIBUTED YET**

© William Gibson, an American-Canadian speculative fiction writer

RESEARCHERS AND **ENGINEERS**
ARE THE **BRILLIANT MINDS** BRINGING
INVENTIONS TO THE **WORLD** TO BE BETTER





ai BOOMED in 2022

But its roots go way back to 1956!

Picture this: a group of brilliant minds from different fields gathered at Dartmouth for a summer-long workshop. Their mission? To explore the idea of “thinking machines.” And that’s how the journey of AI began!

The technologies of the future are being developed by brilliant minds in laboratories and research centers, and then brought to us by entrepreneurs, managers, marketing professionals and others.

The UAE, and Abu Dhabi in particular, are focused on the technologies that will positively impact our future.




STUDYING STEM SUBJECTS AT SCHOOL AND UNIVERSITY MAKES YOU A CREATOR OF THE FUTURE

STEM stands for Science, Technology, Engineering, and Mathematics

STEM		Key Subjects	Future-focused Careers
S	Science Explores the natural world, from atoms to ecosystems	<ul style="list-style-type: none">• Physics, incl. Quantum Physics• Earth & Environmental Sciences• Chemistry• Biology	<ul style="list-style-type: none">• Bio & Chemical Energy Researcher• Researcher in Genomics and Bioinformatics• Quantum Physicist
T	Technology Focuses on gadgets, software, and making our lives easier	<ul style="list-style-type: none">• Computer Science• Information Technology• Telecommunications• Robotics	<ul style="list-style-type: none">• AI Engineer• Quantum Developer• Electromagnetics Engineer
E	Engineering Combines design and utility, creating everything from bridges to circuit boards	<ul style="list-style-type: none">• Mechanical Engineering• Electrical Engineering• Chemical Engineering• Aerospace Engineering	<ul style="list-style-type: none">• Aerospace Engineer• Autonomous Cars Engineer• Drone Engineer
M	Mathematics Provides the language underlying it all boards	<ul style="list-style-type: none">• Algebra• Geometry• Calculus• Statistics	<ul style="list-style-type: none">• Cloud Architect• Data Scientist• Cryptographer



NEW TECHNOLOGIES HELP US TO SOLVE PRESSING GLOBAL CHALLENGES

 Key world trends to know about

DATA IS THE NEW OIL

Today, data is incredibly valuable. In fact, 90% of the world's data was created in just the last two years, and it's expected to double every two years. This rapid growth is driving new technologies like AI and machine learning, which are changing how we live and work.

CYBERSECURITY MATTERS MORE WITH EVERY DAY

As we rely more on data, protecting it becomes crucial. In 2023, there were 2,365 reported cyberattacks, affecting over 343 million people. This shows why strong security measures are essential to keep our information safe.

ROBOTS AND SELF-DRIVING CARS WILL BECOME COMMONPLACE SOON

Robots and autonomous vehicles will become common in the next 5-10 years. These technologies are set to make our lives easier and safer in many ways.



NEW TECHNOLOGIES HELP US TO SOLVE PRESSING GLOBAL CHALLENGES

Key world trends to know about

SUSTAINABILITY AND WATER ARE CRUCIAL FOR THE PLANET

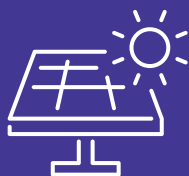
With the world population expected to hit 9.7 billion by 2050, we need to think about sustainability. Countries across the world have agreed to work towards Net Zero emissions by 2050, which means using clean energy and reducing pollution to protect our planet.

INNOVATIONS IN FOOD AND FARMING

As the population grows, so does the demand for food. New methods like precision farming help us grow food more efficiently and sustainably.

QUANTUM COMPUTING IS COMING

Many countries, including the UAE, are investing in quantum computers, which could change everything from medicine to materials science. These computers can solve problems much faster than today's technology, opening new possibilities.



WHAT ARE THE TOP FUTURE-FOCUSED TECHNOLOGIES?



TOP FUTURE-FOCUSED TECHNOLOGIES

To study now to build a bright future for the UAE

AI

- Empowers computers, robots, and software to think intelligently

Renewable & Sustainable Energy

- Derives energy from sun, wind, water, biomass

Directed Energy

- Shapes the future of lasers and electromagnetics

Autonomous Robotics

- Designs unmanned machines (cars, drones, robots, humanoids)

Cryptography

- Protects information exchanges and guarantees authentication and confidentiality

Quantum

- Develops Quantum technologies for computing, sensing, and for communications

Propulsion & Space

- Moves objects (spacecraft, rockets, and satellites) through space

Advanced Materials

- Designs and produces the materials of the future – both for high-tech and green-tech sectors

Secure Systems

- Builds resilient, trustworthy and cybersecurity architectures



WHAT ARE THE TOP CAREERS IN ADVANCED TECHNOLOGIES?



TOP FUTURE-FOCUSED TECHNOLOGIES

To study now to build a bright future for the UAE

AI

- AI / ML / MLOps Engineer
- AI Researcher
- Data Scientist
- HPC (high-performing computing) Engineer

Quantum

- Quantum Researcher
- Post-Quantum Cryptography Engineer
- Quantum Software Developer

Renewable & Sustainable Energy

- Renewable Energy Researcher / Engineer
- Water Resources Researcher / Engineer

Propulsion & Space

- Researcher (Aerodynamics, Turbomachinery)
- Engineer (Aerospace / Flight Software / Systems Testing)

Directed Energy

- Researcher (Optics / Photonics / Laser / Acoustics / Antenna / Electromagnetics)
- Engineer (Optics / Photonics / Laser / Acoustics / Antenna / Electromagnetics)



Advanced Materials

- Researcher (Nanomaterials / Self-Healing / Smart materials)
- Engineer (Nanomaterials / Smart Materials / Self-Healing materials / Energy Storage)

Autonomous Robotics

- Researcher (Robot Communication / Swarm Behavior)
- Engineer (UAV / Robotics / Control)
- AI Engineer

Secure Systems

- Secure Systems Researcher
- Secure Systems Engineer
- Security AI and ML Engineer

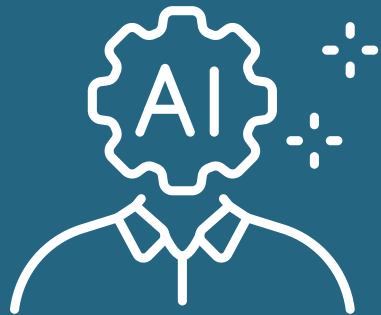
Cryptography

- Cryptography Researcher
- Cryptography Engineer
- Vulnerability Researcher
- Cryptanalyst



ARTIFICIAL INTELLIGENCE (ai)

Artificial Intelligence (AI) is a transformative field that empowers computers, robots, and software to think intelligently, akin to the human mind. By analyzing patterns in data and mimicking cognitive processes, AI systems can make informed decisions, revolutionizing various industries and sectors.





WHY AI IS CRUCIAL FOR THE FUTURE

AI is reshaping work, economies, and society, much like steam power and mechanized engines did in the 18th century.

Breakthroughs in generative AI (such as ChatGPT and Falcon LLM) enable content creation across audio, code, images, text, and more, transforming efficiency and creativity.

AI capabilities are projected to rival human abilities.





KEY SUBJECTS TO STUDY

- 1 **Machine Learning:** Discover how algorithms can learn from data without explicit programming.
- 2 **Deep Learning:** Dive into neural networks and their applications.
- 3 **Natural Language Processing (NLP):** Understand how AI processes and generates human language.
- 4 **Computer Vision:** Explore image recognition and visual understanding.
- 5 **Computer Hardware:** Innovate in processing units on the hardware level to improve and speed up AI contributions.
- 6 **Data Science:** Master data analysis and preprocessing.
- 7 **Algorithm Design and Implementation:** Develop efficient algorithms for AI tasks.
- 8 **Ethics and Bias:** Grasp the ethical implications of AI and address bias.

AI is here to stay, and familiarity with its principles and applications is essential for our future success.



QUANTUM

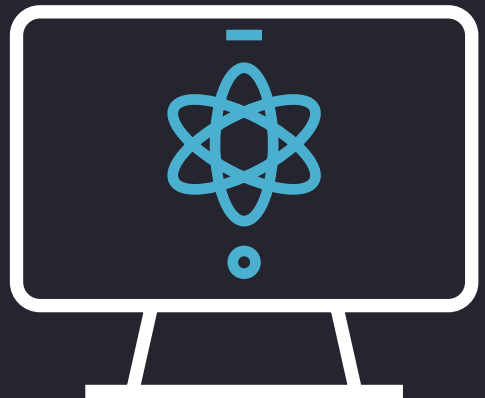
Quantum physics, also known as quantum mechanics, is a branch of physics that deals with the behavior of particles at the smallest scales. Quantum is all around us and we are all quantum.





KEY SUBJECTS TO STUDY

- 1 **Quantum Mechanics:** Understand wave functions, probabilities, and the Schrödinger equation.
- 2 **Quantum Computing:** Learn about qubits, gates, and quantum algorithms (like Shor's algorithm for factoring).
- 3 **Quantum Information Theory:** Explore quantum entanglement, teleportation, and quantum communication.





WHY QUANTUM IS CRUCIAL FOR THE FUTURE

Quantum discoveries have significantly shaped our economy, as, for example, lasers for communication and health, magnetic resonance for MRI, atomic clocks for GPS and semiconductors for the computing industry.

Quantum principles underpin the way information is encoded, processed and transmitted, both in classical and quantum communication.

Quantum computers, though still in early development, hold immense promise.

Unlike classical computers that use bits (0s and 1s), quantum computers use qubits, which can exist in superpositions. This allows them to solve certain problems exponentially faster. For example, they could revolutionize drug discovery, optimize supply chains, and tackle complex simulations.

Quantum-resistant cryptography is crucial. While quantum computers are years away from breaking current encryption, it's essential to develop and implement quantum-resistant encryption now. Protecting our communications infrastructure is a priority.



RENEWABLE & SUSTAINABLE ENERGY

Renewable energy refers to usable energy derived from replenishable sources. These sources include Solar Energy, Wind Power, Hydroelectric Power (gained from rivers and waterfalls), Geothermal Energy (from hot springs and Earth's interior), Tidal Power (from ocean tides), and Biomass (from organic materials like wood, agricultural waste, and biofuels). Embracing renewable energy is crucial for a cleaner, more resilient planet!





WHY RENEWABLE AND SUSTAINABLE ENERGY IS CRUCIAL FOR THE FUTURE

Environmental Impact: Unlike fossil fuels, renewable energy sources don't emit greenhouse gases, contributing to climate change. By studying these alternatives, we can mitigate environmental damage.

Sustainability: Fossil fuels are finite, but renewables are inexhaustible. Investing in renewable energy ensures a sustainable future.

Health Benefits: Reducing our reliance on fossil fuels improves air quality, preventing health issues caused by pollution.





KEY SUBJECTS TO STUDY

- 1 **Physics, Chemistry, Electrical and Mechanical Engineering:** Understand energy conversion, thermodynamics, chemistry, chemical engineering, and electrical systems.
- 2 **Environmental Science:** Learn about ecosystems, climate change, and sustainability.
- 3 **Materials Science:** Explore advanced materials for solar panels, batteries, and wind turbines.
- 4 **Policy and Economics:** Grasp the regulatory landscape and economic implications.
- 5 **Computer Science:** Analyze data, simulate energy systems, and optimize renewable technologies.





PROPULSION & SPACE

Propulsion refers to the science and technology of moving objects through air and space. It encompasses the design, development, and operation of engines and systems that generate thrust to propel aircrafts, helicopters, UAVs, spacecraft, rockets, and satellites. Aerospace Studies encompasses a multidisciplinary approach to understanding air and space, including its scientific, technological, and societal aspects.





WHY PROPULSION & SPACE ARE CRUCIAL FOR THE FUTURE

Air Transport and Advanced Mobility: Propulsion advances ways to move airplanes, UAVs, etc. and improves sustainability by reducing emissions through more efficient engines, alternative fuels, and innovative designs that minimize environmental impact.

Space Exploration: Propulsion is crucial for launching spacecraft, achieving orbit, and exploring distant celestial bodies. Without efficient propulsion systems, space missions would be impossible.

Satellite Deployment: Satellites play a vital role in communication, weather monitoring, navigation, and scientific research. Propulsion ensures precise placement of satellites in their designated orbits. Innovations in space technologies often lead to spin-offs that benefit everyday life (e.g., GPS, medical imaging). Space is critical for national security: communication, surveillance, and defense.



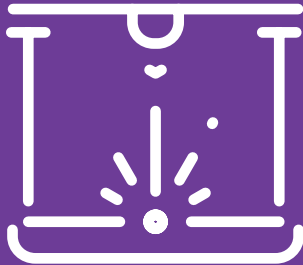
KEY SUBJECTS TO STUDY

- 1 **Aerodynamics:** This is the study of how air interacts with moving objects, crucial for designing efficient aircraft and spacecraft.
- 2 **Air Breathing and Sustainable Propulsion:** This area explores propulsion systems that use atmospheric oxygen, aiming for more sustainable and efficient flight.
- 3 **Avionics and Systems Engineering:** This field covers the electronic systems used in aircraft and spacecraft, including navigation, communication, and control systems.
- 4 **Flight Dynamics and Control:** This involves understanding and controlling the motion of aircraft and spacecraft, ensuring stability and maneuverability. **Orbital Mechanics:** Understanding how objects move in space, orbital trajectories, and gravitational interactions.
- 5 **Rocket Propulsion:** Studying chemical, electric, and nuclear propulsion methods.
- 6 **Spacecraft Design:** Integrating propulsion systems into spacecraft architecture.
- 7 **Astronomy and Astrophysics:** Investigating celestial objects, cosmic evolution, and the nature of the universe.
- 8 **Planetary Science:** Studying planets, moons, and asteroids.



DIRECTED ENERGY

Directed Energy (DE) refers to technologies that use concentrated electromagnetic waves and laser beams, rather than kinetic energy, to achieve various objectives. DE offers game-changing capabilities, and students studying this subject will contribute to shaping the future of the technologies.





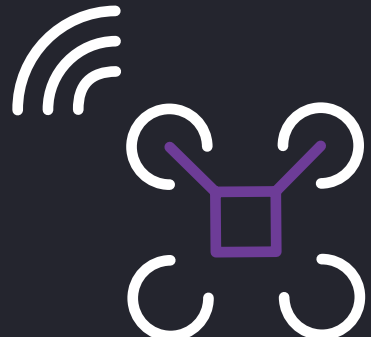
WHY DIRECTED ENERGY IS CRUCIAL FOR THE FUTURE

Biomedical applications: Lasers to do treatments and surgeries, microwave imaging technologies to improve medical diagnostics.

Speed-of-Light Delivery: Power beaming to remote locations to simplify the power delivery infrastructure and minimize the use of batteries.

National Security: Directed Energy is recognized as a technology with significant implications for national security.

Earth Observation: Sensors and payloads to measure oceans, forests, lands, and ecosystems.





KEY SUBJECTS TO STUDY

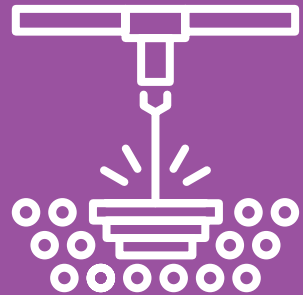
- 1 Physics:** Understanding electromagnetics, optics, and laser physics is essential. Students should grasp concepts like absorption, reflection, and refraction.
- 2 Electrical Engineering:** Knowledge of electrical circuits, electronics, power systems, micro-processors is crucial for designing and maintaining DE systems.
- 3 Systems Engineering:** Integrating DE systems into platforms requires expertise in systems engineering and integration.
- 4 Ethics and Policy:** As Directed Energy technology evolves, ethical considerations and policy frameworks become vital.





ADVANCED MATERIALS

Advanced materials are novel or improved substances with exceptional properties, surpassing traditional materials. They include nanomaterials, composites, biomaterials, and smart materials. Nanomaterials, for instance, have unique properties due to their tiny size (nanoscale), enabling breakthroughs in various applications. Excitingly, they play a pivotal role in shaping our future, from reducing CO2 emissions to driving innovations in healthcare, energy solutions, and smart devices.



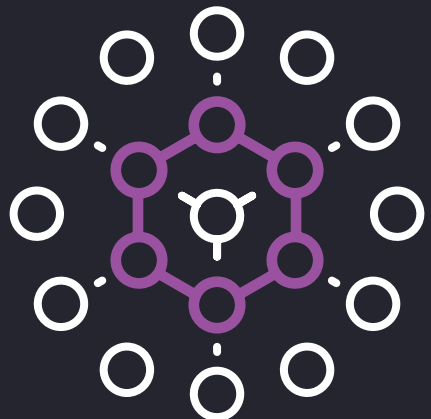


WHY ADVANCED MATERIALS ARE CRUCIAL FOR THE FUTURE

Smart Devices: Materials with responsive properties enable smart sensing systems, neuromorphic computing, and self-assembly.

Healthcare and Biomedicine: Hydrogels, which absorb large quantities of fluids, find applications as drug carriers, tissue engineering matrices, and self-healing materials.

Energy Solutions: Advanced materials drive innovations in solar cells, batteries, and supercapacitors, aiding clean energy production and storage. Advanced materials contribute significantly to sustainability. For instance, functionally graded materials enhance the strength-to-weight ratio of components, reducing CO2 emissions.





KEY SUBJECTS TO STUDY

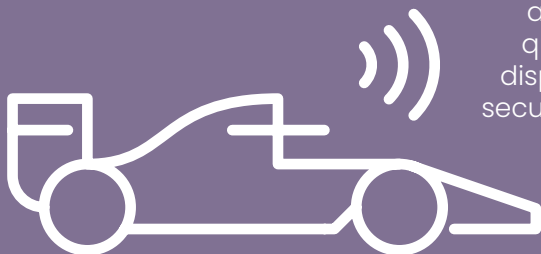
- 1 Materials Science:** Understand the structure, properties, and behavior of materials. Dive into crystallography, and material characterization techniques.
- 2 Nanotechnology:** Explore the world of nanomaterials, quantum dots, and nanocomposites. Learn about their unique properties and applications.
- 3 Polymer Science:** Study polymers, including synthetic and natural polymers.
- 4 Materials Chemistry:** Investigate chemical reactions, synthesis methods, and material design.
- 5 Biomedical Materials:** Focus on biomaterials, tissue engineering, and biocompatibility.
- 6 Energy Materials:** Delve into materials for batteries, fuel cells, and photovoltaics.
- 7 Smart and Self Healing Materials:** Study intelligent materials that can self-repair and correct defects, absorb vibrations, and piezoelectrics.



AUTONOMOUS ROBOTICS

Autonomous robotics refers to the field of intelligent machines capable of performing tasks and operating autonomously in various environments, without direct human control or intervention. These robots, like humans, can perceive their surroundings, communicate with each other, coordinate on a task, make decisions and take consequent actions, individually or as a group, and learn from their actions. Autonomous robotics

also raises important questions about job displacement, privacy, and security.





WHY AUTONOMOUS ROBOTICS IS CRUCIAL FOR THE FUTURE

Efficiency: Autonomous robots transform industries by streamlining processes, reducing human error, and enhancing productivity. For instance, in warehouses or ports, Autonomous Mobile Robots (AMRs) optimize material handling and logistics.

Exploration and Discovery: From space exploration to underwater research, autonomous robots enable us to explore places that are dangerous or inaccessible to humans.

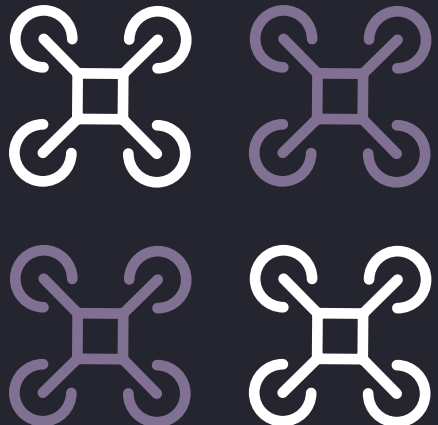
Safety: In hazardous environments (such as nuclear facilities or disaster zones), autonomous robots can perform critical tasks without risking human lives.

Cost Savings: By automating repetitive tasks, companies can achieve cost efficiencies and allocate human resources more strategically.



KEY SUBJECTS TO STUDY

- 1 Computer Science and Programming:** Proficiency in programming languages is essential. Subjects like Computer Science, Computer Engineering, and Information Systems provide a solid foundation.
- 2 Design and Technology:** Practical engineering skills are crucial. You will study Product Design, Mechatronics, Electrical Engineering, and Manufacturing.





SECURE SYSTEMS

Secure Systems go beyond merely protecting data; they ensure the integrity, confidentiality, and availability of information in our increasingly digital world. With cyber threats constantly evolving, security is no longer an optional feature. It's a fundamental necessity for system survival and growth. Studying secure systems equips STEM students to build resilient, trustworthy architectures that adapt to ever-changing security challenges.





WHY SECURE SYSTEMS ARE CRUCIAL FOR THE FUTURE

Internet of Things (IoT): As IoT devices proliferate, securing them becomes critical to prevent breaches.

Cloud Computing: Cloud security ensures data protection and compliance in shared environments.

Autonomous Systems: Self-driving cars, drones, and robots require robust security to prevent malicious interference.

Encryption: Safeguarding data by converting it into an unreadable format using cryptographic algorithms.

Intrusion Detection Systems: Detecting and responding to unauthorized access attempts or suspicious behavior.



KEY SUBJECTS TO STUDY

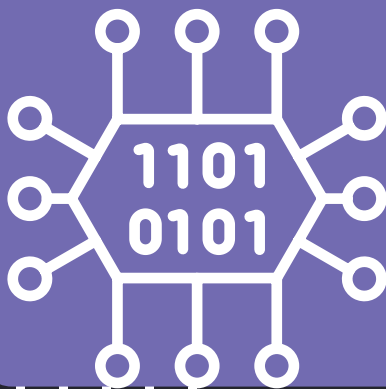
- 1 Cryptography:** Understanding encryption techniques and cryptographic protocols.
- 2 Network Security:** Protecting data during transmission across networks.
- 3 Software Security:** Ensuring secure coding practices and vulnerability mitigation.
- 4 Risk Assessment and Compliance:** Evaluating threats and adhering to regulations.





CRYPTOGRAPHY

Cryptography is the science and practice of securing information by transforming it into an unreadable format, which can only be deciphered by authorized parties. It plays a crucial role in modern security systems, ensuring the confidentiality, integrity, and authenticity of data.





WHY CRYPTOGRAPHY IS CRUCIAL FOR THE FUTURE

Confidentiality: Cryptography safeguards sensitive data from being accessed by non-authorized parties.

Privacy: It protects / hides the identity of the entities communicating.

Authentication: It verifies user and system identities, establishing trust.

Integrity: Detects unauthorized data modifications, for example, by using hashes or digital signatures.

Non-Repudiation: Provides evidence of communication or transactions.



KEY SUBJECTS TO STUDY

- 1 **Symmetric Encryption:** Uses a single secret key for encryption and decryption.
- 2 **Asymmetric Encryption:** Involves public and private key pairs.
- 3 **Hash Functions:** Verify data integrity and reduce the data for efficiency purposes.
- 4 **Digital Signatures:** Authenticate messages.
- 5 **Cryptographic Protocols:** SSL/TLS, SSH, etc.





HOW TO GET READY FOR A CAREER IN ADVANCED TECHNOLOGIES?





FOCUS ON TECHNOLOGIES OF THE FUTURE, KEY SECTORS, AND STUDY AI

Advanced Technologies



AI & Digital
Science



Autonomous
Robotics



Advanced
Materials



Secure
Systems



Directed
Energy



Quantum



Cryptography



Propulsion &
Space



Renewable
Energy



Sectors



Healthcare



Food &
Agriculture



Security



Sustainability,
Environment &
Energy



Aerospace &
Space



Transport

3 Pillars to study

1

Study AI

All of us need AI skills
– even now, not
even in the future!

2

Pick an Advanced Technology

For example,
Autonomous
Robotics

3

Add a layer of Specialization

Pick a Sector or Sub-domain in
Advanced Technology

Sector:

Robotics in
Healthcare

OR

Sub-domain of Robotics:

Drone
Engineering



Questions

WHAT CAREER IS BEST FOR ME?

Circle the answers, calculate your answers in columns, and check what suits you most on the next page



1. What excites you the most?

2. Which activity do you enjoy the most?

3. What is your favorite subject in school?

4. How do you prefer to work on a project?

5. What type of problems do you like to solve?

6. Which of these hobbies do you enjoy the most?

7. How do you approach a new task?

8. What kind of books or movies do you prefer?

9. How do you handle challenges?

10. What is your dream job?



Answers

1	2	3	4	5
Discovering new things and conducting experiments	Building and designing new technologies	Solving complex problems	Designs and products	Leading and managing projects
Reading scientific journals and articles	Coding and developing software	Analyzing data and statistics	Sketching and designing	Organizing and planning events
Physics, Biology or Chemistry	Computer Science or Engineering	Mathematics	Art or Design	Business Studies or Economics
Independently or with like-minded people	Collaboratively, with a team of engineers	Analyzing data to find solutions	Creatively, brainstorming new ideas	Leading a diverse team and managing Tasks
Mysteries of nature and the world around us	Technical Challenges	Mathematical puzzles	Design and usability issues	Organizational and logistical problems
Reading science fiction & learning	Building gadgets or models	Playing strategy games	Drawing or crafting	Planning and organizing events
Research thoroughly before starting	Dive in and start building, experiment	Break it down into logical steps	Think creatively and outside the box	Plan and delegate tasks
Documentaries or science fiction	Tech thrillers or engineering marvels	Mystery or detective stories	Creative and artistic films	Leadership and motivational stories
Research and experiment to find solutions	Use technology and tools to solve them	Analyze data and patterns	Think creatively and innovatively	Plan strategically and lead the team
Scientist or Professor	Engineer or Software Developer	Data Scientist or Data Analyst	Designer or Innovator	Project Manager or Team Leader

Remember – there are no right or wrong answers, it is all about what suits you best at this moment of your life



ANSWERS: YOUR PATH IN ADVANCED TECH

This test is for your reflection only! You can move between these paths later in your career. Choose a career that suits your personality, passion, and skills now

1 FUTURE RESEARCHER

WHO YOU CAN BECOME

You have a passion for discovering new things and wonders of nature and enjoy diving deep into research and education. Professionals in this field conduct experiments, analyze data, and develop new theories to advance knowledge. They often work in laboratories, universities, or research institutions, contributing to groundbreaking discoveries and innovations.

- AI Researcher / Engineer
- Quantum Researcher
- Renewable Energy / Water Researcher
- Aerodynamics / Turbomachinery / Rockets Researcher
- Optics / Photonics / Laser / Acoustics / Antenna / Electric / Electronics Researcher
- Robot Communication / Swarm Behavior
- Researcher
- Advanced Materials Researcher
- Secure Systems Researcher

2 FUTURE ENGINEER

WHO YOU CAN BECOME

You love building and designing new technologies and solving technical challenges. Professionals in this field develop and implement innovative solutions to complex problems, often working on cutting-edge technologies such as AI, quantum computing, and renewable energy systems. They design, build, and test new products, systems, and infrastructure, ensuring they meet the highest standards of performance and safety.

- AI / Machine Learning Engineer
- High-Performance Computing (HPC) Engineer
- Quantum Key Distribution Engineer
- Post-Quantum Cryptography Engineer
- Quantum Software / Hardware Developer
- Renewable Energy / Water Engineer
- Aerospace / Flight Software / Systems Testing Engineer
- Optics / Photonics / Laser / Acoustics / Antenna / Electric / Electronics Engineer
- UAV, Robotics, Control Engineer
- Advanced Materials Engineer



ANSWERS: YOUR PATH IN ADVANCED TECH

This test is for your reflection only! You can move between these paths later in your career. Choose a career that suits your personality, passion, and skills now

3 FUTURE DATA GURU

WHO YOU CAN BECOME

You enjoy working with numbers and data, solving complex mathematical problems. Data is highly valuable in today's world. Professionals in this field use mathematical models and statistical techniques to analyze data, identify patterns, and make informed decisions. They work in various industries, including finance, healthcare, and technology, providing insights that drive innovation and improve efficiency.

- AI Engineer
- Cryptanalyst
- Cryptography Engineer
- Cryptography Researcher
- Data Scientist
- Data Analyst
- Financial Analyst

4 FUTURE CREATOR

WHO YOU CAN BECOME

You are creative and enjoy developing innovative designs and products. Professionals in this field focus on creating user-friendly and aesthetically pleasing products, systems, and experiences. They work in various industries, including technology and architecture, using their creativity and technical skills to bring new ideas to life.

- AI Content Creator
- Web Designer
- UX/UI Designer
- Product Designer
- Marketing Manager
- Social Media Manager

5 FUTURE LEADER

WHO YOU CAN BECOME

You excel at planning, managing, and leading projects and people, and enjoy taking on leadership roles. Professionals in this field oversee the development and implementation of projects, ensuring they are completed on time, within budget, and to the highest standards. They work in various industries, including technology, engineering, and research, leading teams and coordinating mutual efforts to achieve project goals.

- Project Manager / Program Manager / Scrum Master
- Product Manager / Product Owner
- Business Development Manager
- Events & Challenges Manager



SHOULD I BE A RESEARCHER?

IS IT ABOUT YOU? CIRCLE IF YOU...

Love reading	Enjoy Teamwork with like-minded people	Curious about the world	Love asking questions
Love thinking	Interested in technologies	Enjoy discussing ideas	Passionate about innovations
Read SCIENCE books	Curious HOW things work	Love studying	Listen to scientific podcasts
Love intellectual discussions	Love AI <3	Curious how people developed technologies	Interested in Physics





Researchers discover new knowledge and understand how things work. They prefer thinking and discussing theories

WHAT DO RESEARCHERS DO?

- Discover new knowledge and understand how things work
- Conduct studies (study what other people learned about the world so far) and experiments (testing nature's laws) to increase scientific knowledge
- Write papers or give presentations to share their findings with other scientists and the public around the world
- Usually work in universities, government agencies, or private companies



OR AN ENGINEER?

IS IT ABOUT YOU? CIRCLE IF YOU...

Love building things

Are practical

Interested in programming

Enjoy working with electronics



Enjoy teamwork

Enjoy fixing gadgets

Love building computers or programs

Curious about how mechanisms work



Love using technologies

Love working with tools

Passionate about technologies

Interested in mechanics



Like working on cars

Love challenges and hackathons

Wish to make the world a better place

Enjoy solving problems





Engineers develop solutions to technical problems. They prefer being practical, building things and systems

WHAT DO ENGINEERS DO?

- Engineers are problem-solvers who apply science and mathematics to develop practical solutions to technical problems
- Their work is the link between scientific discoveries and the products (gadgets) and services (websites, applications, AI chatbots, etc.) that we buy. For instance, an engineer might use research findings to develop a more efficient engine
- Engineers work in various industries (usually in private and public companies), including transportation, agriculture, power generation and others



FUTURE-FOCUSED, FUTURE-READY

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