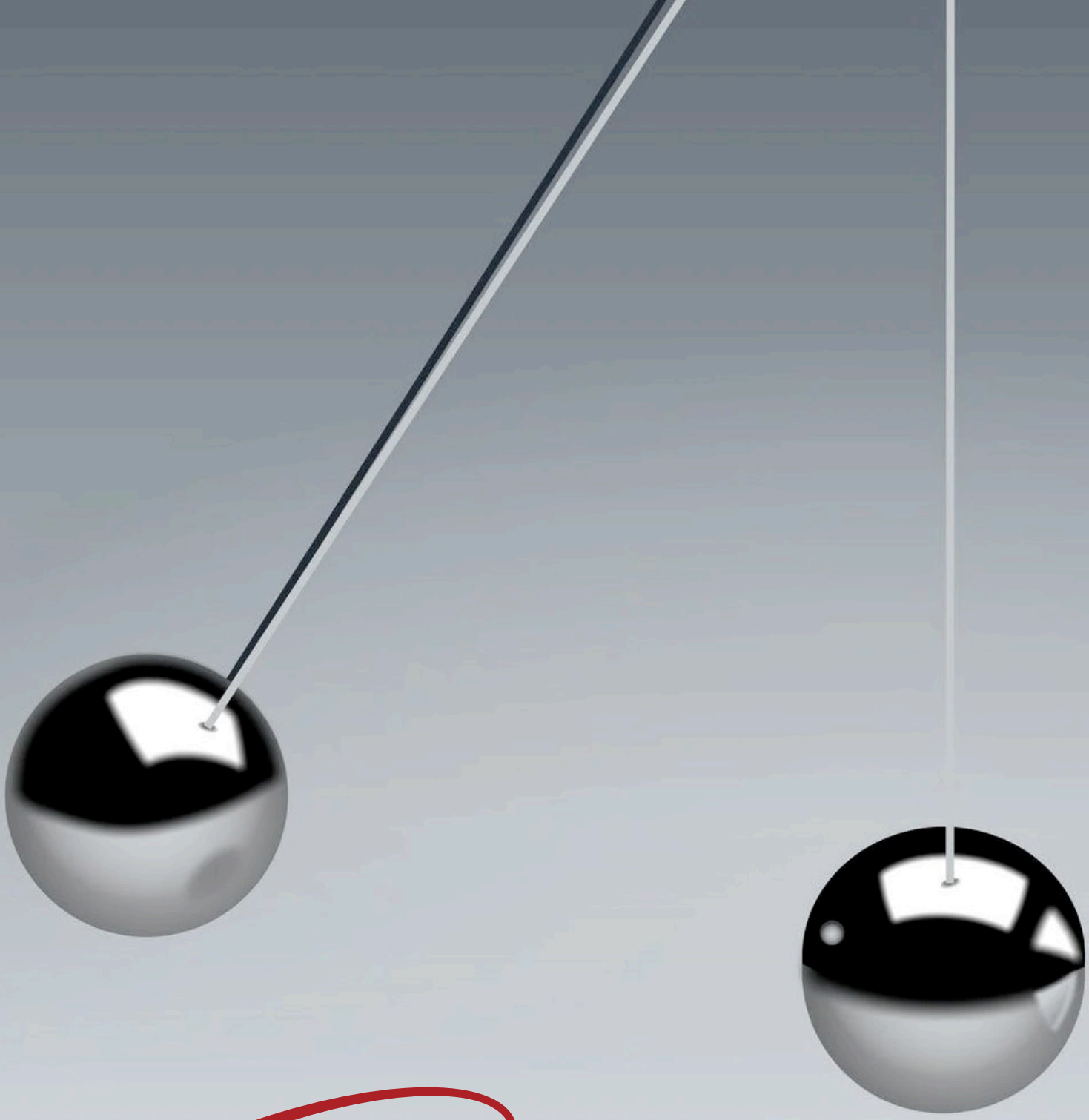
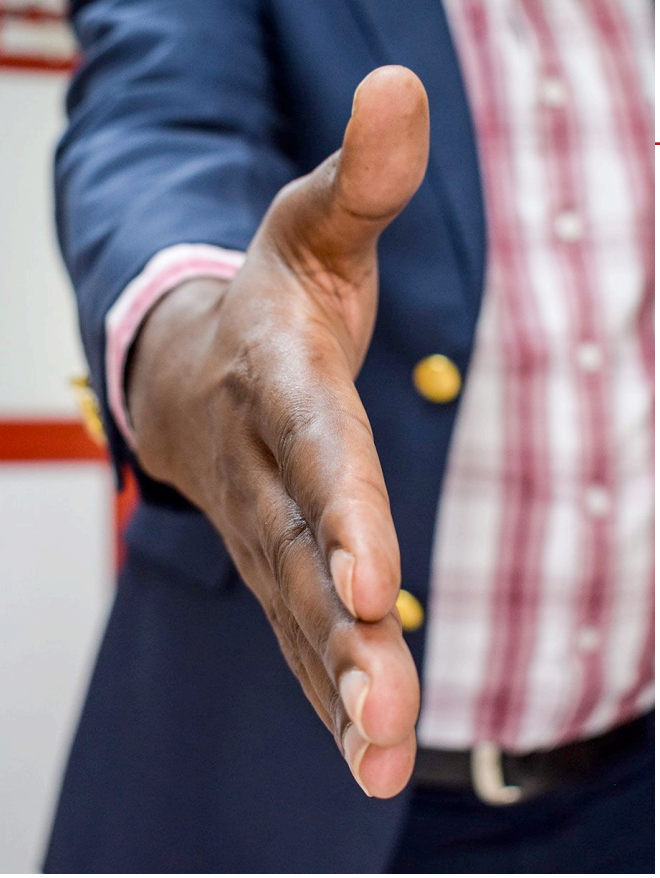


KENYA UNIVERSITIES AND COLLEGES CENTRAL PLACEMENT SERVICE

ALIGNING CAREERS

STEM EDUCATION/PROGRAMMES/CAREERS

JANUARY 2021



About KUCCPS

The Kenya Universities and Colleges Central Placement Service (KUCCPS) is an agency of the Kenya government established to undertake the placement of students to universities and colleges and develop career guidance programmes for students, among other functions.

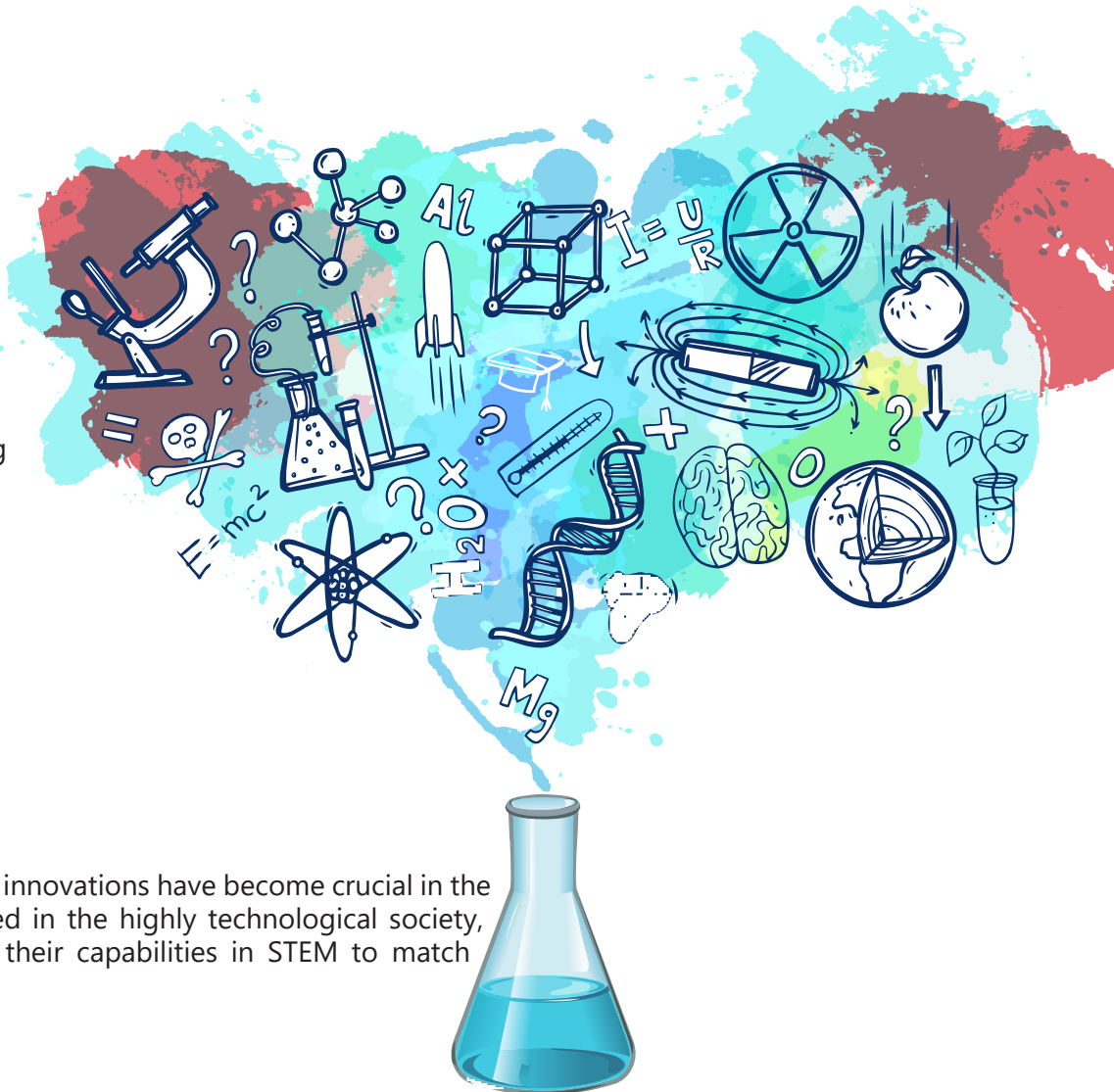
Mandate

1. Coordinate the placement of Government-sponsored students to universities and colleges;
2. Disseminate information on available programmes, their costs and areas of study as prioritised by the Government;
3. Collect and retain data relating to university and college placement;
4. Develop career guidance programmes for the benefit of students;
5. Advise the Government on matters relating to university and college student placement; and
6. Perform any other function assigned to it under the Act

What Are STEM Subjects?

STEM stands for Science, Technology, Engineering and mathematics, but a far wider range of academic disciplines fall under this description. Here's a list of some of the other STEM courses you could study:

- Mathematics
- Astronomy
- Computer science
- Electrical engineering
- Biochemistry
- Biology
- Chemical engineering
- Mechanical engineering
- Physics
- Statistics
- Chemistry
- Civil Engineering
- Aerospace Engineering



Why STEM Programmes?

Scientific and technological innovations have become crucial in the 21st century and to succeed in the highly technological society, students need to develop their capabilities in STEM to match today's advancements.

a) STEM Education and Gender Roles

STEM Education breaks the traditional gender roles. It helps in bridging the gender gaps that sometimes exist between math and science fields through development of initiatives that are geared towards the increasing the roles of women in STEM related fields.

b) A priority focus on STEM is key to overcoming limitations that are brought by the gap between the knowledge generated in the education system and the skills demanded by employers.

c) Future careers rely heavily on 21st century skills such as critical thinking, creativity, cultural awareness, collaboration and problem solving. STEM complements the development of 21st century skills.

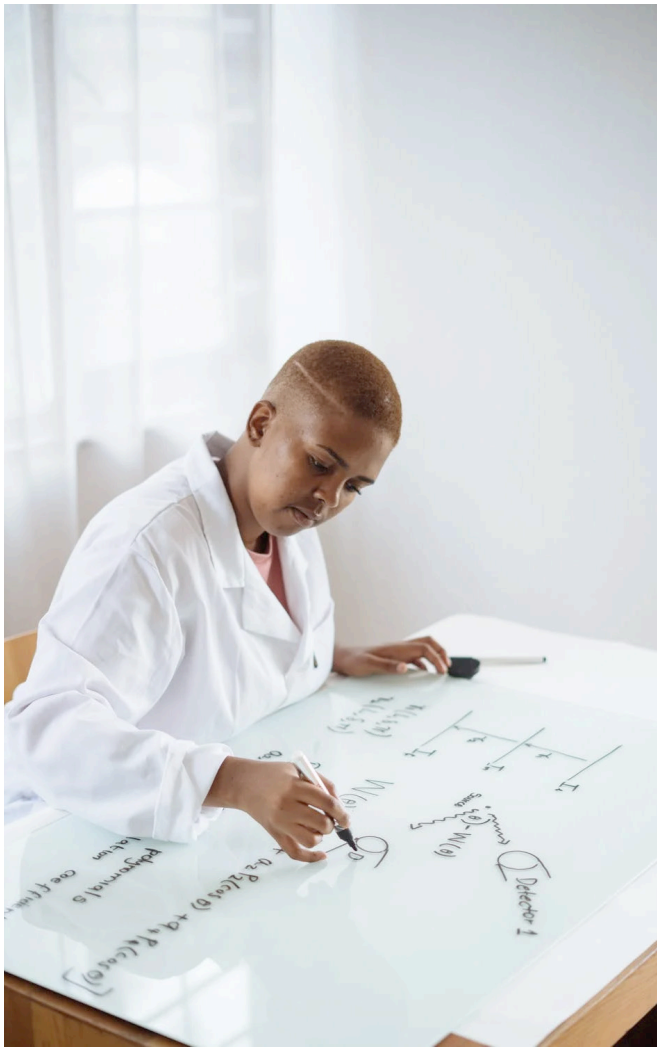
Why are fewer people going into STEM?

- Men are more suited to STEM. (Blegh!)
- People think scientists work in isolation (False, teamwork is key to most)
- They are not helping/social professions. (False, think of your doctor)
- Narrowed field of study. (Some areas are specialized, many are not)
- STEM is perceived as nerdy. (Maybe a little)
- It is too hard. (It is hard, not too hard)
- Failure to recognize and inspire the thrill of discovery!

STEM Careers

- STEM careers are in high demand!
- You get to work on projects.
- There are more flexible working hours.
- Your creative instincts and interests will be needed, often.
  - You actually contribute to the tangible or intangible advancement of society.
- The pleasure of discovery or of solving a tricky problem.
- You may work with really sophisticated instruments.
- STEM careers are highly collaborative.
- The field is always changing and challenging, you will never be bored.
- Your career can still morph into a managerial position.
- You can always start in a STEM field and later decide to do something else: law, arts, business etc.
- Salaries tend to be on the higher end.
- You learn that it is OK to fail (even repeatedly) if your outlook is right.

This will build your confidence and resilience!



Preparing for STEM

- Get good grades.
- Engage in extra-curricular activities that expose you to STEM.
  - Math clubs, Science fairs etc.
- Holiday programs in STEM will widen your appreciation
- Talk to family, friends and mentors who are involved in science fields.
- Work in teams.
  - Even if the subjects are not set up that way.
- Persevere.
  - Seek help from teachers and students ahead of you, this is not a sign of weakness, but a sign of purpose and resourcefulness!

What are some of the offered degree in STEM programmes?

S/NO	ENGINEERING	SCIENCE & MATHEMATICS	TECHNOLOGY
1.	Bachelor of Science in industrial Chemistry	Bachelor of Technology (Applied Statistics)	Bachelor of Technology (Communication and Computer Networks)
2.	Bachelor of Engineering (Civil Engineering)	Bachelor of Science (Mathematics With It)	Bachelor of Science in Software Engineering
3.	Bachelor of Science in Electrical & Electronic Engineering	Bachelor of Science (Financial Engineering)	Bachelor of Science (Biomedical Science & Technology)
4.	Bachelor of Science (Mechanical Engineering)	Bachelor of Science (Mathematics and Economics)	Bachelor of Technology (Medical Laboratory Science)
5.	Bachelor of Engineering (Agricultural & Bio-Systems Engineering)	Bachelor of Science (Actuarial Science With It)	Bachelor of Science (industrial Mathematics)

STEM and TVET

Programmes under TVET are also within the requirements of Science, Technology, Engineering and Mathematics (STEM). STEM knowledge and skills play a key role in sustainable growth and stability of the economy.

S/NO	DIPLOMA	CRAFT	ARTISAN
1.	Diploma in Electrical & Electronic Engineering	Craft Certificate in Mechanical Engineering (Automotive Option)	Artisan in Electrical installation
2.	Diploma in industrial Microbiology & Biotechnology	Craft in Food Processing Technology	Nvcet Certificate in information Communication Technology
3.	Diploma in information Communication Technology	Craft in information Communication Technology	Nvcet in Refrigeration and Air Conditioning
4.	Diploma in Technology (Aeronautical Engineering)	Craft in Civil Engineering	Trade Test in Leatherwork Technology
5.	Diploma in Computer Science	Craft in Science Laboratory Technology	Artisan in Food and Beverage Production and Service

KUCCPS: Towards achieving Gender Balance in STEM

Challenges Facing Gender Balance in STEM

- Lack of access to female role models
- Hazy path to success.
- Lack of practical experience
- Thinking abilities are static and cannot be improved
- Lack of confidence
- False stereotypes about STEM

Empowering Female Students

- Teach a Growth Mentality
  - Emphasizing that skills change and develop over time, the important thing is to keep growing.
- Offering Hands-On STEM Exercises
  - Practical experiences in class, can bring STEM subjects to life.
- Teach the value of failure
  - Encouraging learners to view setbacks as a part of the learning process.
- Confidence building
  - Provide opportunities to succeed such as science fairs and rewards for innovations
  - Creating an enabling environment for struggling students.

- Provide Role Models
- The following are potential areas of putting girls in contact with the role models:
  - Having teachers, preferably female, who mentor and encourage girls.
  - Matching the new students with willing upper class female students.
  - Career expo/workshops with invited female industry professionals.
- Combating False Stereotypes about Women in STEM
  - Sensitizing girls in high school and the public on the benefits of STEM courses. Such as employability and market preferences.
- Talk about Successful Women in Industry
  - Aim to show learners that success in the field is achievable by providing practical examples of successful women.

Helpful Links

- **www.kuccps.net**
- **www.TryEngineering.org**
- **www.engineeryourlife.org**
- **http://societyofwomenengineers.swe.org**
- **http://vision2030.go.ke/**
- **https://ysk.co.ke**

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