



Programmes of Study in the Physical Sciences

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Orientation Programme for Level 100 Students 2021/2022 AY

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Schedule

- Overview of Programmes
- “Mixing and Matching”
- “And After That, What?” – Graduate School and Career Prospects

Choices

*Shall I go
To Cape Coast,
Or to Elmina
I don't know,
I can't tell.
I don't know,
I can't tell.*

Ato, in Ama Ata Aidoo's *Dilemma of A Ghost* (1965)

Departments in the School

There are six departments in the School of Physical and Mathematical Sciences.

- Computer Science
- Chemistry
- Earth Science
- Mathematics
- Physics
- Statistics and Actuarial Science

These allow for courses to be grouped as: Earth Sciences, Mathematical Sciences, and Physical Sciences.

I'll be talking to you about the Physical Science option.

“Mixing and Matching”

From the revised handbook, we read as follows:

The Level 100 programmes have been restructured in such a way that students are grouped into broad areas where they read/take related subjects. This is to afford the students a broad menu of programmes at Level 200 to choose from, depending on their interest and performance at Level 100.

Type of Degree Programmes (Level 200 to 400)

- Single-Subject Major
- Major-Minor
- Combined Major

Level 100 Course Structure: First Semester

Level 100: 15 - 18 credits per semester (including UGRC)

FIRST SEMESTER

Code	Title	Credits	Pre-requisites
Core			
UGRC		3	
PHYS 105	Practical Physics I	1	
PHYS 143	Mechanics and Thermal Physics	3	
CHEM 113	Foundation Chemistry I	3	
CHEM 120	General Chemistry Laboratory I	1	
MATH 121	Algebra and Trigonometry	3	
Total		14	
Electives: Select 3 credits			
DCIT 101	Introduction to Computer Science	3	
EASC 101	Physical Geology	3	
MATH 123	Vectors and Geometry	3	
ABCS 101	Introductory Animal Biology	3	

Students who wish to be considered for Geophysics at Level 200 should take EASC 101

*Geophysics is a new programme administered by the Departments of Physics and Earth Science.

Level 100 Course Structure: Second Semester

Level 100: 15 - 18 credits per semester (including UGRC)

SECOND SEMESTER

Code	Title	Credits	Pre-requisites
Core			
UGRC		3	
PHYS 106	Practical Physics II	1	
PHYS 144	Electricity and Magnetism	3	
CHEM 114	Foundation Chemistry II	3	
*CHEM 122	General Chemistry Laboratory II	1	
MATH 122	Calculus I	3	
Total		14	
Electives: Select 3 credits			
DCIT 104	Programming Fundamentals	3	
EASC 104	Historical Geology	2	
EASC 106	Geological Field Excursions	1	
MATH 126	Algebra and Geometry	3	
BOTN 104	Growth of Flowering Plants	3	

Students who wish to be considered for Geophysics at Level 200 should take EASC 104 and EASC 106.

Higher Levels: Credits Required Per Semester

Level 200

Single Major: 15 - 18 creds/sem

Combined Major: 18 - 21 creds/sem; at least 9 creds per subject

Major-Minor: 18 - 21 creds/sem; at least 9 creds per subject

Level 300

Single Major: 15 - 18 creds/sem

Combined Major: 18 - 21 creds/sem; at least 9 creds per subject

Major-Minor: 18 - 21 creds/sem; at least 6 creds/sem in minor subject

Level 400

Single Major: 15 - 18 credits per semester

Combined Major: 18 - 21 credits per semester; at least 9 credits per subject

Major-Minor: 18 - 21 credits per semester

Single Major

Single Major: Either Chemistry OR Physics OR Geophysics.

Level 200: 15 - 18 creds/sem

Level 300: 15 - 18 creds/sem

Level 400: 15 - 18 creds/sem

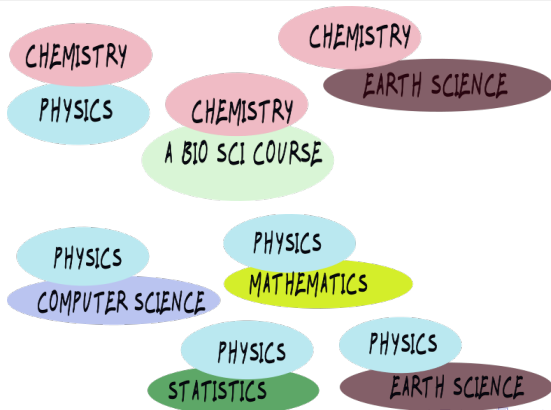
Combined Major

Chemistry OR Physics AND [Some Subject]

Level 200: 18 - 21 creds/sem; at least 9 creds in each subject

Level 300: 18 - 21 creds/sem; at least 9 creds in each subject

Level 400: 18 - 21 creds/sem; at least 9 creds in each subject



Chemistry OR **Physics** *with* [Some Subject]

Level 200: 18-21 creds/sem; at least 9 creds in each subject

Level 300: 18-21 creds/sem; at least 6 creds in the minor subject

Level 400: 18-21 creds/sem

Possibilities: Physics with Computer Science, Physics with Mathematics,
Physics with Earth Science...

Single-Major Programmes

1. Actuarial Science
2. Applied Geology
3. Applied Geophysics
4. Biomathematics
5. Chemistry
6. Computer Science
7. Geology
8. Geophysics
9. Information Technology
10. Mathematics
11. Physics
12. Statistics

Combined Major Programmes

1. Chemistry and a Biological Science programme
2. Chemistry and Physics
3. Computer Science and Mathematics
4. Computer Science and Statistics
5. Computer Science and Physics
6. Mathematics and Statistics
7. Physics and Mathematics
8. Physics and Statistics

Major-Minor

1. Computer Science with Mathematics
2. Computer Science with Physics
3. Computer Science with Statistics
4. Geology with Physics
5. Geology with Mathematics
6. Mathematics with Computer Science
7. Mathematics with Physics
8. Mathematics with Statistics
9. Mathematics with Geology
10. Physics with Computer Science
11. Physics with Geology
12. Physics with Mathematics
13. Statistics with Computer Science
14. Statistics with Mathematics
15. Physics with Statistics

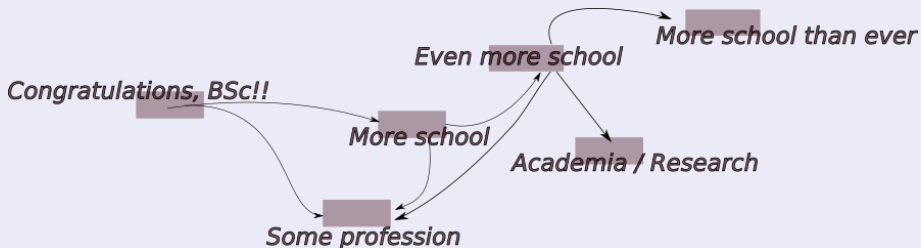
Consult Your Handbook

As you can see, there are different combinations of the courses, and what you choose may lead to different outcomes than expected. So, consult your handbook, talk to your course advisors, lecturers, Head of Department, Dean, etc...

- The Physical Sciences have a great deal to offer. Individual departments are doing very exciting work with regards to course output and research, and as you have seen there is the possibility of combining different courses.
- Members of faculty are also a very interesting bunch, all told, and I'm sure you will have great interactions with us. Don't be shy, talk to your lecturers.
- You will pick up very useful life skills in addition to getting educated: discipline, boldness, fortitude, respect, honesty, perseverance, maturity, resilience.
- You will learn how to navigate friendships and hopefully build supportive and enduring friendships and networks.

“And After That, What?”

What Can You Do With It



Each Department in the SPMS has fully fledged graduate programmes both at the PhD and MPhil level. Graduate programmes in Physics and Chemistry are typically two-year Master of Philosophy (MPhil) programmes and four-year Doctor of Philosophy (PhD) programmes.

*I shall be telling this with a sigh
Somewhere ages and ages hence:
Two roads diverged in a wood, and I –
I took the one less traveled by,
And that has made all the difference.*

Robert Frost, *The Road Not Taken*, final stanza. (1915)

Thanks, and best of luck!