

<b>Programme Name</b>	<b>Bachelor of Science (Chemistry-Mathematics)</b> <span style="float: right;"><b>Undergraduate degree program</b></span>
<b>Programme Description</b>	This program gives students the opportunity to study chemistry and mathematics jointly to cover a broad base of topics in both disciplines. Courses in chemistry and mathematics will give students extensive subject knowledge in the disciplines. The students will have practical exercises in the laboratory as well as field trips to apply the theoretical knowledge that they have gained in lecture classes. This programme allows the students to major in two subjects' area by completing five (5) and nine (9) compulsory and at least three (3) and one (1) elective courses in chemistry and mathematics discipline, respectively.
<b>Majors</b>	Chemistry and Mathematics
<b>Minimum Requirements</b>	An aggregate mark of 200 in the Year 13 External Examination with a pass of: 50% in English, 50% in Mathematics, and 50% in Chemistry OR Foundation Science with the GPA of 2.00 or more. Mature students with a minimum age of 23 years and relevant work experience may also be considered for candidature.
<b>Duration</b>	3 Years on Full time
<b>Programme Type</b>	Bachelor Degree
<b>College Name</b>	College of Engineering, Science and Technology
<b>Campus</b>	Lautoka and Samabula/Nabua Campuses (Year 1- 3)
<b>Credit Points</b>	360

### Credit Value

1. Bachelor of Science double major consists of –
  - a. A total credit of not less than 360 points from units at 500 – 700 level.
  - b. A pass in three generic units.
2. A double major in chemistry subject is awarded upon completion of –
  - a. At least 120 credits in the chemistry subject
  - b. In chemistry majoring subject at least 20 - 25 credits are 500 level, 40 – 50 credits at 600 and 700 level.  
**This means each student will have to complete at least 2 units at 500 level, 3 units at 600 level and 3 units at 700 level in this majoring subject.**
  - c. Criterion 1 and 2 applies simultaneously.

### Chemistry units for Bachelor of Science (Double Major):

*At least 120 credits (i.e. 1200 Learning hours) from chemistry units with;*

**CHM503, CHM504, CHM602, CHM603 and CHM701** (core units, compulsory)

*and at least one 600 unit from elective group-1 and two 700 unit from group-2:*

*group-1:* CHM506, CHM601, CHM604, CHM605, CHM606, CHM607, CHM612, CHM613, CHM614, CHM615, CHM616

*group-2:* CHM703, CHM704, CHM705, CHM706, CHM707, CHM708, CHM709

### Mathematics units for Bachelor of Science (Double Major):

*At least 120 credits (i.e. 1200 Learning hours) from mathematics units with;*

**MTH515, MTH514, MTH610, MTH612, MTH611, MTH613, MTH710, MTH711, MTH712** (core units, compulsory)

*and at least one 700 course from elective group-2:*

*group-1:* MTH516

*group-2:* MTH714, MTH715

*Please consult respective HOD & Department document for availability of elective units and unit plan in both majoring subjects.*

Programme Structure		
Course Code	Course Title	Credit Points
<b>Year 1 Semester 1</b>		
MTH515	Single Variable Calculus	15
CHM503	General Chemistry	15
CIN506	Generic Unit: Computer Principles	15
LNG501	Generic Unit: English for Academic Studies	15
<b>Year 1 Semester 2</b>		
MTH514	Probability and Statistics	15
Elective 1	Maths or CHM (500) --- CHM506 or MTH516	15
CHM504	Organic Chemistry	15
ETH501	Generic Unit: Ethics, Values and Governance	15
<b>Year 2 Semester 1</b>		
MTH610	Ordinary and Partial Differential Equations	15
MTH612	Abstract Algebra	15
Elective 2 CHM	Chemistry Elective 600 --- CHM601, 604, 605, 606, 614, or 615	15
Elective 3 CHM	Chemistry Elective 600 --- CHM601, 604, 605, 606, 614, or 615	15
<b>Year 2 Semester 2</b>		
MTH611	Real Analysis	15
MTH613	Linear Algebra	15
CHM602	Physical Chemistry	15
CHM603	Inorganic Chemistry	15

<b>Year 3 Semester 1</b>		
MTH710	Complex Analysis	15
MTH711	Numerical Analysis	15
CHM701	Modern Instrumentation Methods & Techniques	15
Elective 4 CHM	Chemistry Elective 700 --- CHM703, 706, or 707	15
<b>Year 3 Semester 2</b>		
MTH712	Linear programming	15
Elective 5 MTH	Maths elective 700 --- MTH714 or MTH715	15
Elective 6 CHM	Chemistry Elective 700 --- CHM 704, 705, 708, or 709	15
Elective 7 CHM	Chemistry Elective 700 --- CHM 704, 705, 708, or 709	15
<b>Total Credit Points</b>		<b>360</b>

<b>Course Prerequisite</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Prerequisite</b>
ETH501SEM	Intermediate Ethics and Governance	Pass in year 13/Form 7 or equivalent
CIN506SEM	Computer Principles	Pass in year 13/Form 7 or equivalent
LNG501SEM	English for Academic Studies	A pass in Form 7/Year 13 exam with a minimum total of 200 marks or equivalent. Recognition would be given to mature aged students who do not meet the 13 years of continuous progression but who have relevant work experience and prior learning.
CHM503SEM	General Chemistry	Pass in year 13/Form 7 with chemistry or equivalent
CHM504SEM	Organic Chemistry	Pass in year 13/Form 7 with chemistry or equivalent
CHM506SEM	Bio-Chemistry	Pass in year 13/Form 7 with chemistry or equivalent
CHM601SEM	Instrumental Chemistry	CHM501 or CHM503/CHM504
CHM605SEM	Applied Mathematics & Quantum Chemistry	CHM501 or CHM503/CHM504
CHM604SEM	Environmental Chemistry	CHM501 or CHM503/CHM504
CHM606SEM	Food Chemistry	CHM501 or CHM503/CHM504
CHM607SEM	Marine Chemistry	CHM501 or CHM503/CHM504
CHM602SEM	Physical Chemistry	CHM501 or CHM503/CHM504
CHM603SEM	Inorganic Chemistry	CHM501 or CHM503/CHM504
CHM612SEM	Industrial Chemistry	CHM501 or CHM503/CHM504
CHM613SEM	Analytical Research Project	CHM501 or CHM503/CHM504
CHM614SEM	Industrial Hygiene and Chemical Safety	CHM501 or CHM503/CHM504
CHM615SEM	Good Laboratory and Manufacturing	CHM501 or CHM503/CHM504
CHM616SEM	Industrial Chemistry of Foods and Beverages	CHM501 or CHM503/CHM504
CHM701SEM	Modern Instrumentation Methods & Techniques	CHM602/CHM603
CHM703SEM	Advanced Organic Chemistry	CHM602/CHM603
CHM704SEM	Chemistry of Materials and Polymers	CHM602/CHM603
CHM705SEM	Chemistry of Dyes and Pigments	CHM602/CHM603
CHM706SEM	Advanced Physical Chemistry	CHM602
CHM707SEM	Advanced Inorganic Chemistry	CHM603
CHM708SEM	Medicinal Chemistry	CHM602/CHM603
CHM709SEM	Chemical Analysis of Foods	CHM602/CHM603/CHM606
MTH515	Single Variable Calculus	Pass in year 13/Form 7 Mathematics or equivalent
MTH514	Probability and Statistics	Pass in year 13/Form 7 Mathematics or equivalent
MTH516	Solid Geometry and Multivariable Calculus	Pass in year 13/Form 7 Mathematics or equivalent
MTH511	Discrete Mathematics	Pass in year 13/Form 7 Mathematics or equivalent

MTH610	Ordinary and Partial Differential Equations	Pass in MTH515 or MTH516
MTH611	Real Analysis	Pass in MTH515 or MTH516
MTH612	Abstract Algebra	Pass in MTH511 or equivalent
MTH613	Linear Algebra	Pass in MTH515 or MTH516
MTH710	Complex Analysis	Pass in MTH611
MTH711	Numerical Analysis	Pass in MTH611 or MTH613
MTH712	Linear Programming	Pass in any 600 level Maths course
MTH714	Number Theory	Pass in MTH612
MTH715	Integral Transforms	Pass in MTH610 or equivalent