

Taunggoke University
Department of Chemistry
Curriculum for BSc Degree

First Year BSc

Chemistry Specialization

Semester I

Module No.	Module Name	Credit Points	Hours/week	
			Lecture	Practical / Tutorial
မ ၁၀၀၁	မြန်မာစာ	3	2	2
Eng 1001	English	3	2	2
Chem 1101	Fundamental Chemistry I	4	3	2
Elective Course (I)	*	3	2	2
Elective Course (II)	*	3	2	2
AM 1001	Aspects of Myanmar	3	2	2
Total		19	13	12

Total Credits – 19; Total hours - 25

Foundation Courses

- မ ၁၀၀၁ (3)(2-2) - မြန်မာစာ
- Eng. 1001 (3)(2-2) - English

Core Course

- Chem 1101 (4)(3-2) - Fundamental Chemistry I

Elective Courses*

- Phys 1001 (3)(2-2) - General Physics I
- Math 1001 (3)(2-2) - Mathematics I
- AM 1001 (3)(2-2) - Aspects of Myanmar

* A student can choose any 3 elective courses offered by the Departments of Physics and Mathematics to fulfill total of 19 credits.

For other specializations

- Chem 1001 (3)(2-2) General Chemistry I
 (for Zool/Bot/Geol/Nuclear Physics/Math/Marine Science/ Geog/ Sport Studies/Nuclear Physics)

Module No.	Module Name	Credit Points	Hours/week	
			Lecture	Practical / Tutorial
မာ ၁၀၀၂	မြန်မာစာ	3	2	2
Eng 1002	English	3	2	2
Chem 1102	Fundamental Chemistry II	4	3	2
Elective Course (I)	*	3	2	2
Elective Course (II)	*	3	2	2
AM 1002	Aspects of Myanmar	3	2	2
Total		19	13	12

Total Credits – 19 ; Total hours - 25

Foundation Courses

- Eng. 1002 (3)(2-2) - English
- မာ ၁၀၀၂ (3)(2-2) - မြန်မာစာ

Core Course

- Chem 1102 (4) (3-2) - Fundamental Chemistry II

Elective Courses (*)

- Phys 1002 (3) (2-2) - General Physics II
- Math 1003 (3) (2-2) - Mathematics II
- AM 1002 (3) (2-2) - Aspects of Myanmar

* A student can choose any 3 elective courses offered by the Departments of Physics and Mathematics to fulfill total of 19 credits.

For other specializations

- Chem 1002 (3) (2-2) General Chemistry II (Zool/Bot/Geol/Nuclear Physics /Math/Marine Science/ Geog/ Sport Studies/Nuclear Physics)

Second Year BSc

Chemistry Specialization

Semester I

Module No.	Module Name	Credit Points	Hours / week	
			Lecture	Practical / Tutorial
Eng 2001	English	3	2	2
Chem 2101	Inorganic Chemistry I	4	3	2
Chem 2102	Physical Chemistry I	4	3	2
Chem 2103	Organic Chemistry I	4	3	2
Elective Course (I)	*	3	2	2
Elective Course (II)	*	3	2	2
Total		21	15	12

Total Credits – 21; Total hours – 27

Foundation Course

- Eng. 2001 (3)(2-2) - English

Core Courses

- Chem 2101 (4)(3-2) - Inorganic Chemistry I
- Chem 2102 (4)(3-2) - Physical Chemistry I
- Chem 2103 (4)(3-2) - Organic Chemistry I

Elective Courses (*)

- Chem 2104 (3)(2-2) - Chemistry in Society
- Chem 2105 (3)(2-2) - Soil Chemistry
- Phys 2003 (3)(2-2) - Electric and Magnetic fields
- Math 2001 (3)(2-2) - Mathematics I

* A student can choose any 2 elective courses offered by the Departments of Chemistry, Physics and Mathematics to fulfill total of 21 credits.

For other specializations

- Chem 2001 (3)(2-2) - Chemistry I (for Geology)
- Chem 2002 (3)(2-2) - Organic Chemistry I (for Zoology, Botany & Biotechnology specializations)
- Chem 2003 (3)(2-2) - Soil Chemistry (for Geography specialization)

Second Year BSc

Chemistry Specialization

Semester II

Module No.	Module Name	Credit Points	Hours / week	
			Lecture	Practical / Tutorial
Eng 2002	English	3	2	2
Chem 2106	Inorganic Chemistry II	4	3	2
Chem 2107	Physical Chemistry II	4	3	2
Chem 2108	Organic Chemistry II	4	3	2
Elective Course (I)	*	3	2	2
Elective Course (II)	*	3	2	2
Total		21	15	12

Total Credits – 21 ; Total hours - 27

Foundation Course

- Eng. 2002 (3)(2-2) - English

Core Courses

- Chem 2106 (4)(3-2) - Inorganic Chemistry II
- Chem 2107 (4)(3-2) - Physical Chemistry II
- Chem 2108 (4)(3-2) - Organic Chemistry II

Elective Courses (*)

- Chem 2109 (3)(2-2) - Water Chemistry
- Chem 2110 (3)(2-2) - Atmospheric Chemistry
- Phys 2004 (3)(2-2) - Thermal Physics
- Math 2004 (3)(2-2) - Mathematics II

* A student can choose any 2 elective courses offered by the Department of Chemistry, Mathematics and Physics to fulfill total of 21 credits.

For other specializations

- Chem 2004 (3)(2-2) - Chemistry II (for Geology)
- Chem 2005 (3)(2-2) - Organic Chemistry II (for Zoology & Botany specializations)
- Chem 2006 (3)(2-2) - Hydrological Chemistry
(for Geography specialization)
- ES 2104 - Environmental Chemistry I: Water Chemistry
(for Environmental Science specializations)
- BT 2106 - Chemistry of Life (For Biotechnology Specialization)

Third Year BSc

Chemistry Specialization

Semester I

Module No.	Module Name	Credit Points	Hours / week	
			Lecture	Practical / Tutorial
Eng 3001	English	3	2	2
Chem 3101	Inorganic Chemistry III	4	3	2
Chem 3102	Physical Chemistry III	4	3	2
Chem 3103	Organic Chemistry III	4	3	2
Chem 3104	Analytical Chemistry I	4	3	2
Elective Course	*	3	2	2
Total		22	16	12

Total Credits – 22 ; Total hours – 28

Foundation Course

- Eng 3001 (3)(2-2) - English

Core Courses

- Chem 3101(4)(3-2) - Inorganic Chemistry III
- Chem 3102 (4)(3-2) - Physical Chemistry III
- Chem 3103 (4)(3-2) - Organic Chemistry III
- Chem 3104 (4)(3-2) - Analytical Chemistry I

Elective Courses (*)

- Chem 3105 (3)(2-2) - Biochemistry
- Chem 3106 (3)(2-2) - Instrumental Methods of Analysis

* A student can choose any one elective course offered by the Department of Chemistry to fulfill total of 22 credits.

For other specializations

- Chem 3001 (3)(2-2) - Organic Chemistry III (for Zoology & Botany specializations)
- BT 3103 (3) (2-2) - Chemistry of Biomolecules (for Biotechnology specialization)
- ES 3103 /3203 (3)(2-2) - Environmental Chemistry II: Soil Chemistry (for Environmental Science specializations)

Third Year BSc Chemistry Specialization Semester II

Module No.	Module Name	Credit Points	Hours / week	
			Lecture	Practical / Tutorial
Eng 3002	English	3	2	2
Chem 3107	Inorganic Chemistry IV	4	3	2
Chem 3108	Physical Chemistry IV	4	3	2
Chem 3109	Organic Chemistry IV	4	3	2
Chem 3110	Analytical Chemistry II	4	3	2
Elective Course	*	3	2	2
Total		22	16	12

Total Credits – 22 ; Total hours – 28

Foundation Course

- Eng 3002 (3)(2-2) - English

Core Courses

- Chem 3107 (4)(3-2) - Inorganic Chemistry IV
- Chem 3108 (4)(3-2) - Physical Chemistry IV
- Chem 3109 (4)(3-2) - Organic Chemistry IV
- Chem 3110 (4)(3-2) - Analytical Chemistry II

Elective Courses (*)

- Chem 3111 (3)(2-2) - Environmental Chemistry
- Chem 3112 (3)(2-2) - Radiation Chemistry

* A student can choose any one elective course offered by the Department of Chemistry to fulfill total of 22 credits.

For other specializations

- Chem 3002 (3)(2-2) - Organic Chemistry IV (for Zoology & Botany specializations)
- BT 3108 (3) (2-2) - Chemistry of Enzymes (for Biotechnology specializations)

Fourth Year BSc Chemistry Specialization Semester I

Module No.	Module Name	Credit Points	Hours / week	
			Lecture	Practical / Tutorial
Eng 4001	English	3	2	2
Chem 4101	Inorganic Chemistry V	4	3	2
Chem 4102	Physical Chemistry V	4	3	2
Chem 4103	Organic Chemistry V	4	3	2
Chem 4104	Analytical Chemistry III	4	3	2
Elective Course	*	3	2	2
Total		22	16	12

Total Credits – 22 ; Total hours – 28

Foundation Course

- Eng 4001 (3)(2-2) - English

Core Courses

- Chem 4101 (4)(3-2) - Inorganic Chemistry V
- Chem 4102 (4)(3-2) - Physical Chemistry V
- Chem 4103 (4)(3-2) - Organic Chemistry V
- Chem 4104 (4)(3-2) - Analytical Chemistry III

* A student can choose any one elective course offered by the Department of Chemistry to fulfill total of 22 credits.

Elective Courses

- Chem 4105 (3)(2-2) - Research Methodology
- Chem 4106 (3)(2-2) - Petroleum Chemistry

For Other Specializations

- BT 4103 (3)(2-2) - Analytical Biochemistry I
(for Biotechnology specialization)
- ES 4104/4204 (3)(2-2) - Environmental Chemistry III: Atmospheric Chemistry
(for Environmental Science specialization)

Fourth Year BSc Chemistry Specialization Semester II

Module No.	Module Name	Credit Points	Hours / week	
			Lecture	Practical / Tutorial
Eng 4002	English	3	2	2
Chem 4107	Inorganic Chemistry VI	4	3	2
Chem 4108	Physical Chemistry VI	4	3	2
Chem 4109	Organic Chemistry VI	4	3	2
Chem 4110	Analytical Chemistry IV	4	3	2
Elective Course	*	3	2	2
Total		22	16	12

Total Credits – 22 ; Total hours – 28

Foundation Course

- Eng 4002 (3)(2-2) - English

Core Courses

- Chem 4107 (4)(3-2) - Inorganic Chemistry VI
- Chem 4108 (4)(3-2) - Physical Chemistry VI
- Chem 4109 (4)(3-2) - Organic Chemistry VI
- Chem 4110 (4)(3-2) - Analytical Chemistry IV

Elective Courses (*)

- Chem 4111 (3)(2-2) – Introduction to Nanoscience
- Chem 4112 (3)(2-2) – Radiochemistry

* A student can choose any one elective course offered by the Department of Chemistry to fulfill total of 22 credits.

Note : Term / Project paper must be submitted by each group not more than 10 students in Fourth Year Second Semester. Group paper presentation must be included.

For Other Specialization

- BT 4108 (3)(2-2) - Analytical Biochemistry II
(for Biotechnology Specialization)

Note: Classification of Credits for BSc Chemistry Specialization

Sr No.	Course	Year No.	Semester	Credit allotted	Total Credits
1	BSc	1	1 & 2	38	
2	BSc	2	1 & 2	42	
3	BSc	3	1 & 2	44	
4	BSc	4	1 & 2	44	168

Taunggoke University
Department of Chemistry
New Curriculum for BSc (Honours) Degree

First Year Honours

Chemistry Specialization

Semester I

Module No.	Module Name	Credit Points	Hours / week	
			Lecture	Practical / Tutorial
Eng 3001	English	3	2	2
Chem 3201	Inorganic Chemistry I	4	3	2
Chem 3202	Physical Chemistry I	4	3	2
Chem 3203	Organic Chemistry I	4	3	2
Chem 3204	Analytical Chemistry I	4	3	2
Elective Course	*	3	2	2
Total		22	16	12

Total Credits – 22 ; Total hours – 28

Foundation Course

- Eng 3001 (3)(2-2) - English

Core Courses

- Chem 3201 (4)(3-2) - Inorganic Chemistry I
- Chem 3202 (4)(3-2) - Physical Chemistry I
- Chem 3203 (4)(3-2) - Organic Chemistry I
- Chem 3204 (4)(3-2) - Analytical Chemistry I

Elective Courses (*)

- Chem 3205 (3)(2-2) - Biochemistry
- Chem 3206 (3)(2-2) - Instrumental Methods of Analysis

- A student can choose any one elective course offered by the Department of Chemistry to fulfill a total of 22 credits.

First Year Honours

Chemistry Specialization

Semester II

Module No.	Module Name	Credit Points	Hours / week	
			Lecture	Practical / Tutorial
Eng 3002	English	3	2	2
Chem 3207	Inorganic Chemistry II	4	3	2
Chem 3208	Physical Chemistry II	4	3	2
Chem 3209	Organic Chemistry II	4	3	2
Chem 3210	Analytical Chemistry II	4	3	2
Elective Course	*	3	2	2
Total		22	16	12

Total Credits – 22 ; Total hours – 28

Foundation Course

- Eng 3002 (3)(2-2) - English

Core Courses

- Chem 3207(4)(3-2) - Inorganic Chemistry II
- Chem 3208(4)(3-2) - Physical Chemistry II
- Chem 3209(4)(3-2) - Organic Chemistry II
- Chem 3210(4)(3-2) - Analytical Chemistry II

Elective Courses (*)

- Chem 3211 (3)(2-2) - Environmental Chemistry
- Chem 3212 (3)(2-2) - Radiation Chemistry

- A student can choose any one elective course offered by the Department of Chemistry to fulfill a total of 22 credits.

Second Year Honours

Chemistry Specialization

Semester I

Module No.	Module Name	Credit Points	Hours / week	
			Lecture	Practical / Tutorial
English 4001	English	3	2	2
Chem 4201	Inorganic Chemistry III	4	3	2
Chem 4202	Physical Chemistry III	4	3	2
Chem 4203	Organic Chemistry III	4	3	2
Chem 4204	Analytical Chemistry III	4	3	2
Elective Course	*	3	2	2
Total		22	16	12

Total Credits – 22 ; Total hours – 28

Foundation course

- Eng 4001 (3)(2-2) - English

Core Courses

- Chem4201 (4)(3-2) - Inorganic Chemistry III
- Chem4202 (4)(3-2) - Physical Chemistry III
- Chem4203 (4)(3-2) - Organic Chemistry III
- Chem4204 (4)(3-2) - Analytical Chemistry III

Elective Courses (*)

- Chem 4205 (3) (2-2) – Research Methodology
- Chem 4206 (3) (2-2) – Petroleum Chemistry

- A student can choose any one elective course offered by the Department of Chemistry to fulfill total of 22 credits.

Second Year Honours

Chemistry Specialization

Semester II

Module No.	Module Name	Credit Points	Hours / week	
			Lecture	Practical / Tutorial
Eng 4002	English	3	2	2
Chem 4207	Inorganic Chemistry IV	4	3	2
Chem 4208	Physical Chemistry IV	4	3	2
Chem 4209	Organic Chemistry IV	4	3	2
Chem 4210	Analytical Chemistry IV	4	3	2
Elective Course	*	3	2	2
Total		22	16	12

Total Credits – 22 ; Total hours – 28

Foundation course

- Eng 4002 - (3)(2-2) English

Core Courses

- Chem 4207(4)(3-2) - Inorganic Chemistry IV
- Chem 4208(4)(3-2) - Physical Chemistry IV
- Chem 4209(4)(3-2) - Organic Chemistry IV
- Chem 4210(4)(3-2) - Analytical Chemistry IV

Elective Courses (*)

- Chem 4211 (3) (2-2) – Introduction to Nanoscience
 - Chem 4212 (3) (2-2) – Radiochemistry
- A student can choose any one elective course offered by the Department of Chemistry to fulfill a total of 22 credits.

Third Year Honours

Chemistry Specialization

Semester I

Module No.	Module Name	Credit Points	Hours / week	
			Lecture	Practical / Tutorial
Chem 5201	Inorganic Chemistry V	4	3	2
Chem 5202	Physical Chemistry V	4	3	2
Chem 5203	Organic Chemistry V	4	3	2
Chem 5204	Analytical Chemistry V	4	3	2
Chem 5205	Nuclear Chemistry I	4	3	2
Chem 5206	Food and Nutritional Chemistry	4	3	2
Total		24	18	12

Total Credits – 24 ; Total hours – 30

Core courses

- Chem 5201(4)(3-2) - Inorganic Chemistry V
- Chem 5202(4)(3-2) - Physical Chemistry V
- Chem 5203(4)(3-2) - Organic Chemistry V
- Chem 5204(4) (3-2) - Analytical Chemistry V
- Chem 5205(4)(3-2) - Nuclear Chemistry I
- Chem 5206(4)(3-2) - Food and Nutritional Chemistry

Third Year Honours Chemistry Specialization Semester II

Module No.	Module Name	Credit Points	Hours / week	
			Lecture	Practical / Tutorial
Chem 5207	Inorganic Chemistry VI	4	3	2
Chem 5208	Physical Chemistry VI	4	3	2
Chem 5209	Organic Chemistry VI	4	3	2
Chem 5210	Analytical Chemistry VI	4	3	2
Chem 5211	Nuclear Chemistry II	4	3	2
Chem 5212	Nanochemistry	4	3	2
Total		24	18	12

Total Credits – 24 ; Total hours – 30

Core courses

- Chem 5207(4)(3-2) - Inorganic Chemistry VI
- Chem 5208(4)(3-2) - Physical Chemistry VI
- Chem 5209(4)(3-2) - Organic Chemistry VI
- Chem 5210(4)(3-2) - Analytical Chemistry VI
- Chem 5211(4)(3-2) - Nuclear Chemistry II
- Chem 5212(4)(3-2) - Nanochemistry

Note : Term / Project paper must be submitted by each group not more than 10 students in Third Year Honours Second Semester. Group paper presentation must be included.

Note: Clarification of Credits for BSc (Honours) Chemistry Specialization

Sr No.	Course	Year No.	Semester	Credit allotted	Total Credits
1	BSc	1	1 & 2	38	
2	BSc	2	1 & 2	42	
3	BSc (Honours)	3(1 st Hons)	1 & 2	44	
4	BSc (Honours)	4(2 nd Hons)	1 & 2	44	
5	BSc (Honours)	5(3 rd Hons)	1 & 2	48	216

MSc (Qualifying) Chemistry Specialization Semester I

Module No.	Module Name	Credit Points	Hours / week	
			Lecture	Practical / Tutorial
Chem 5201	Inorganic Chemistry V	4	3	2
Chem 5202	Physical Chemistry V	4	3	2
Chem 5203	Organic Chemistry V	4	3	2
Chem 5204	Analytical Chemistry V	4	3	2
Chem 5205	Nuclear Chemistry I	4	3	2
Chem 5206	Food and Nutritional Chemistry	4	3	2
Total		24	18	12

Total Credits – 24 ; Total hours – 30

Core courses

- Chem 5201(4)(3-2) - Inorganic Chemistry V
- Chem 5202(4)(3-2) - Physical Chemistry V
- Chem 5203(4)(3-2) - Organic Chemistry V
- Chem 5204(4) (3-2) - Analytical Chemistry V
- Chem 5205(4)(3-2) - Nuclear Chemistry I
- Chem 5206(4)(3-2) - Food and Nutritional Chemistry

For Other Specializations

- BT 5205 (3)(2-2) - Biochemical Analysis I
(for Biotechnology specialization)

MSc (Qualifying) Chemistry Specialization Semester II

Module No.	Module Name	Credit Points	Hours / week	
			Lecture	Practical / Tutorial
Chem 5207	Inorganic Chemistry VI	4	3	2
Chem 5208	Physical Chemistry VI	4	3	2
Chem 5209	Organic Chemistry VI	4	3	2
Chem 5210	Analytical Chemistry VI	4	3	2
Chem 5211	Nuclear Chemistry II	4	3	2
Chem 5212	Nanochemistry	4	3	2
Total		24	18	12

Total Credits – 24 ; Total hours – 30

Core courses

- Chem 5207(4)(3-2) - Inorganic Chemistry VI
- Chem 5208(4)(3-2) - Physical Chemistry VI
- Chem 5209(4)(3-2) - Organic Chemistry VI
- Chem 5210(4)(3-2) - Analytical Chemistry VI
- Chem 5211(4)(3-2) - Nuclear Chemistry II
- Chem 5212(4)(3-2) - Nanochemistry

For Other Specializations

- BT 5211 (3)(2-2) - Biochemical Analysis II
(for Biotechnology specialization)
- ES 5111(3)(2-2) - Environmental Chemistry IV: Environmental Pollution and Management
(for Environmental Science specialization)