

University of Pyay
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	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)

Module No.	Module Name	Credit Points	Hours/week	
			Lecture	Practical / Tutorial
မ ၁၀၀၂	မြန်မာစာ	3	2	2
Eng 1002	English	3	2	2
Chem 1102	Fundamental Chemistry	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
- မ 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)

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

University of Yangon

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.

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.

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.

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

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)