

## 付属資料 7

The Curriculum Structure of the Royal University of Phnom Penh  
1997 MoEYS



付属資料 7

**KINGDOM OF CAMBODIA  
MINISTRY OF EDUCATION, YOUTH & SPORT**

# **THE CURRICULUM STRUCTURE**



**THE ROYAL UNIVERSITY OF PHNOM PENH  
1997**

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THE ROYAL UNIVERSITY OF PHNOM PENH  
1997

THE CURRICULUM STRUCTURE

Explanation of Structure and Terminology used in this document

1. Each Academic Year is divided into two semesters: Semester I and Semester II
2. Courses have been divided into four major areas: **General Education**, **Basic Requirements**, **Major Courses**, and **Minor Courses**. In addition, there are two other areas mentioned in this text: **Practicum** and **Thesis**.
3. The average number of credits per semester is 20 (minimum 19, maximum 23) for all semesters, with the exception of Semester II, Year Four, which has only ten credits.
4. Each subject includes the name of the course, the number of credits for that course, the number of hours of theory and the number of hours of practice for the specific course. Thus, the terminology used is:

\* Name of the course . . . . Number of credits (no.of theory hours - no. of practice hours)\*

Example 1:

*Computing* 3(3-2)      Name of course: *Computing*  
Number of Credits: 3  
Number of Theory Hours: 3  
Number of Practice Hours: 2

Example 2:

*Khmer Culture & Society* 2(2-0)      Name of Course: *Khmer Culture & Society*  
Number of Credits: 2  
Number of Theory Hours: 2  
Number of Practice Hours: 0

## DEPARTMENT OF LITERATURE

### CURRICULUM OF BACHELOR OF ARTS IN LITERATURE

**Total Minimum Requirement: 151 Credits**

#### **YEAR ONE**

##### **First Semester (20 credits)**

##### ***General Education (17 credits)***

<b>-Language (2 credits)</b>	
English/French I	2(6-0)
<b>-Social Sciences (4 credits)</b>	
Introduction to Sociology	2(2-0)
Khmer Culture and Society	2(2-0)
<b>-Humanities (5 credits)</b>	
Cambodian History	3(3-0)
Introduction to Logic	2(2-0)
<b>-Science &amp; Mathematics (6)</b>	
General Mathematics I	3(3-0)
General Biology	3(3-0)
<b>Basic Requirements (3 credits)</b>	
Theory of Literature I	3(3-0)

#### **YEAR TWO**

##### **First Semester (20 credits)**

##### ***General Education (5 credits)***

<b>-Language (2 credits)</b>	
English/French III	2(6-0)
<b>-Science &amp; Mathematics (3)</b>	
Statistics	3(3-0)
<b>Basic R.(15)</b>	
Asian History	3(3-0)
General Theory of Grammar	2(2-0)
Folk Literature II	3(3-0)
Chinese Literature	2(2-0)
History of Khmer Literature	2(2-0)
Theory of Literature II	3(3-0)

#### **YEAR THREE**

##### **First Semester (20 credits)**

##### ***General Education (2 credits)***

<b>-Language (2 credits)</b>	
English/French V	2(6-0)
<b>Major Course(18)</b>	
Inscription I	3(3-0)
Post-Angkorian Literature I	3(3-0)
Khmer Culture I	2(2-0)
Sanskrit	3(3-0)
Lexicology	2(2-0)
Western Literature I	3(3-0)
Syntaxes	2(2-0)

#### **YEAR FOUR**

##### **First Semester (21 credits)**

##### ***Major Courses (17 credits)***

Western Literature III	3(3-0)
Post-Angkorian Literature III	3(3-0)
Khmer Culture III	3(3-0)
Research in Khmer Lang. & Liter.	3(3-0)
Linguistics II	2(2-0)
Regional Literature (Thai, Lao, V/n, Indonesian, Burman)	3(3-0)
<b>Practicum (4 credits)</b>	

##### **Second Semester (20 credits)**

##### ***General Education (8 credits)***

<b>-Language (2 credits)</b>	
English/French II	2(6-0)
<b>-Social Sciences (1 credit)</b>	
Using Library Resources	1(1-0)
<b>-Science &amp; Mathematics (5)</b>	
Environmental Science	2(2-0)
PC Application	3(2-2)
<b>Basic Requirements (12 credits)</b>	
Notion of linguistics	3(3-0)
Folk Literature I	3(3-0)
Writing Composition	3(3-0)
Aesthetics	3(3-0)

##### **Second Semester (20 credits)**

##### ***General Education (2 credits)***

<b>-Language (2 credits)</b>	
English/French IV	2(6-0)
<b>Basic Requirements (6 credits)</b>	
Pre & Angkorian Literature	3(3-0)
Parts of Speech (Word classes)	3(3-0)
<b>Major Courses (12 credits)</b>	
Theory of Arts	3(3-0)
Phonetic & Phonology	3(3-0)
Indian Literature	3(3-0)
Pali	3(3-0)

##### **Second Semester (20 credits)**

##### ***General Education (2 credits)***

<b>-Language (2 credits)</b>	
English/French VI	2(6-0)
<b>Major C. (18)</b>	
Inscription II	3(3-0)
Post-Angkorian Literature II	2(2-0)
Khmer Poetry and Khmer Verse	2(2-0)
Pali & Sanskrit in Khmer Lang.	2(2-0)
Khmer Culture II	2(2-0)
Linguistics I	2(2-0)
Methods of Creation of Words	2(2-0)
Western Literature II	3(3-0)

##### **Second Semester (10 credits)**

##### ***Minor Courses (minim.10 credits)***

Comparative literature	4(4-0)
Grammar & Philology	3(3-0)
Post-Angkorian Literature IV	3(3-0)
Basic Archeology	3(3-0)

##### **OR Thesis (10 credits)**

**Fields:** Khmer Inscription; Literature; Culture; Grammar; Linguistics; Western Lit.; Comparative Literature; Oriental Literature; Cambodia history

## DEPARTMENT OF PSYCHOLOGY

### CURRICULUM OF BACHELOR OF ARTS IN PSYCHOLOGY

**Total Minimum Requirement: 152 Credits**

#### YEAR ONE

##### First Semester (20 credits)

##### *General Education (17 credits)*

-Language (2 credits)  
English/French I 2(6-0)

-Social Sciences (4 credits)  
Introduction to Sociology 2(2-0)  
Khmer Culture and Society 2(2-0)

-Humanities (5 credits)  
Cambodia History 3(3-0)  
General Philosophy 2(2-0)

-Science & Mathematics (6)  
General Mathematics I 3(3-0)  
General Biology 3(3-0)

*Basic Requirements (3 credits)*  
Research Methods I 3(3-0)

#### YEAR TWO

##### First Semester (20 credits)

##### *General Education (5 credits)*

-Language (2 credits)  
English/French III 2(6-0)

-Science & Mathematics (3)  
PC Application 3(2-2)

*Basic Requirements (15 credits)*  
Physio-Psychology 3(2-3)  
Community Psychology II 3(3-0)  
Anthrop. Perspective Psych. I 3(3-0)  
Design & Analysis 3(3-0)  
Cognitive Psychology 3(3-0)

*Major Courses (12 credits)*  
Learning & Memory 3(3-0)  
Theory of Personality I 3(3-0)  
Gender Psychology 3(3-0)  
Social Psychology 3(3-0)

#### YEAR THREE

##### First Semester (20 credits)

##### *General Education (2 credits)*

-Language (2 credits)  
English/French V 2(6-0)

*Major Courses (18 credits)*  
Psycho-Social Problems 3(3-0)  
Cross-Cultural Psychology I 3(3-0)  
Education Psychology I 3(3-0)  
Developmental Psychology I 3(3-0)  
Theory of Personality II 3(3-0)  
Psychotherapy & Counselling I 3(3-0)

#### YEAR FOUR

##### First Semester (22 credits)

*Major Courses (12 credits)*  
Family Therapy 3(3-0)  
Cambodian Psychology 3(3-0)  
Industrial Psychology 3(3-0)  
Management Psychology 3(3-0)

*Free Elective Courses (6 credits)*  
Psychological Testing 3(3-0)  
Psychological Trauma 3(3-0)

*Practicum (4 credits)*

##### Second Semester (20 credits)

##### *General Education (8 credits)*

-Language (2 credits)  
English/French II 2(6-0)

-Social Sciences (1 credit)  
Using Library Resources 1(1-0)

-Science & Mathematics (5)  
Environmental Science 2(2-0)  
Statistics 3(3-0)

*Basic Requirements (12 credits)*  
Research Methods II 3(3-0)  
Community Psychology I 3(3-0)  
Introduction to Psychology 3(3-0)  
History of Psychology 3(3-0)

##### Second Semester (20 credits)

##### *General Education (2 credits)*

-Language (2 credits)  
English/French IV 2(6-0)

*Basic Requirements (6 credits)*  
Anthrop. Perspective Psych. II 3(3-0)  
Computing 3(3-2)

*Major Courses (12 credits)*  
Learning & Memory 3(3-0)  
Theory of Personality I 3(3-0)  
Gender Psychology 3(3-0)  
Social Psychology 3(3-0)

##### Second Semester (20 credits)

##### *General Education (2 credits)*

-Language (2 credits)  
English/French VI 2(6-0)

*Major Courses (18 credits)*  
Psychopathology 3(3-0)  
Cross-Cultural Psychology II 3(3-0)  
Education Psychology II 3(3-0)  
Developmental Psychology II 3(3-0)  
Group Dynamics 3(3-0)  
Psychotherapy & Counselling II 3(3-0)

##### Second Semester (10 credits)

*Minor Courses (10 credits)*  
Buddhist Psychology 3(3-0)  
Child Abuse 2(2-0)  
Domestic Violence 2(2-0)  
Alcohol & Drug Abuse, & Sexual Abuse 3(3-0)

*OR*

*Thesis (10 credits)*

## DEPARTMENT OF GEOGRAPHY

### CURRICULUM OF BACHELOR OF ARTS IN GEOGRAPHY

Total Minimum Requirement: 149 Credits

#### YEAR ONE

##### First Semester (20 credits)

##### **General Education (17 credits)**

<b>-Language (2 credits)</b>	
English/French I	2(6-0)
<b>-Social Sciences (4 credits)</b>	
Introduction to Sociology	2(2-0)
Khmer Culture and Society	2(2-0)
<b>-Humanities (5 credits)</b>	
Cambodian History	3(3-0)
World Civilization	2(2-0)
<b>-Science &amp; Mathematics (6)</b>	
General Mathematics I	3(3-0)
Chemistry	3(3-0)
<b>Basic Requirements (3 credits)</b>	
General Physical Geography	3(3-0)

#### YEAR TWO

##### First Semester (20 credits)

##### **General Education (5 credits)**

<b>-Language (2 credits)</b>	
English/French III	2(6-0)
<b>-Science &amp; Mathematics (3)</b>	
Statistics	3(3-0)
<b>Basic Requirements (15 credits)</b>	
Cartography	3(3-0)
Remote Sensing	3(3-0)
Geomorphology	3(3-0)
Transport Geography	3(3-0)
Industry Geography	3(3-0)

#### YEAR THREE

##### First Semester (20 credits)

##### **General Education (2 credits)**

<b>-Language (2 credits)</b>	
English/French V	2(6-0)
<b>Major Courses (18 credits)</b>	
Tourism	3(3-0)
Urban & Rural Geography	3(3-0)
Political Geography	3(3-0)
Continents' Geography	3(3-0)
Development Geography	3(3-0)
Ecology	3(3-0)

#### YEAR FOUR

##### First Semester (19 credits)

<b>Major Courses (9 credits)</b>	
Demography	3(3-0)
Economic Geography	3(3-0)
Ethnic & Culture Geography	3(3-0)
<b>Free Elective Courses (6 credits)</b>	
Economic Geography of Cambodia	3(3-0)
Research Method Human Geography	3(3-0)
<b>Practicum (4 credits)</b>	
Field Research Application (80 Hours)	

##### Second Semester (20 credits)

##### **General Education (8 credits)**

<b>-Language (2 credits)</b>	
English/French II	2(6-0)
<b>-Social Sciences (1 credit)</b>	
Using Library Resources	1(1-0)
<b>-Science &amp; Mathematics (5)</b>	
Environmental Science	2(2-0)
PC Application	3(2-2)
<b>Basic Requirements (12 credits)</b>	
Geology	3(3-0)
General Social Geography	3(3-0)
Agricultural Geography	3(3-0)
Pedology	3(3-0)

##### Second Semester (20 credits)

##### **General Education (2 credits)**

<b>-Language (2 credits)</b>	
English/French IV	2(6-0)
<b>Basic Requirements (6 credits)</b>	
Population Geography	3(3-0)
Ocean Geography	3(3-0)
<b>Major Courses (12 credits)</b>	
Hidrology	3(3-0)
Climatology	3(3-0)
Introduction of Culture Geography	3(3-0)
Photo & Graphic Interpretation	3(3-0)

##### Second Semester (20 credits)

##### **General Education (2 credits)**

<b>-Language (2 credits)</b>	
English/French VI	2(6-0)
<b>Major Courses (18 credits)</b>	
Research Methods Geograp. Physic	3(3-0)
International Business Geography	3(3-0)
Meteorology	3(3-0)
Cambodian Physical Geography	3(3-0)
South East Asia Geography	3(3-0)
Energy Geography	3(3-0)

##### Second Semester (10 credits)

<b>Minor Courses (10 credits)</b>	
Cartography	3(2-2)
Physical Geography	3(2-2)
Human Geography	4(3-2)

**OR**

**Thesis (10 credits)**



## DEPARTMENT OF SOCIOLOGY

### CURRICULUM OF BACHELOR OF ARTS IN SOCIOLOGY

Total Minimum Requirement: 152 Credits

#### YEAR ONE

##### First Semester (22 credits)

##### *General Education (17 credits)*

- Language (2 credits)
- English/French I 2(6-0)
- Social Sciences (4 credits)
- General Psychology 2(2-0)
- Khmer Culture and Society 2(2-0)
- Humanities (5 credits)
- Cambodian History 3(3-0)
- Khmer Society through literature 2(2-0)
- Science & Mathematics (6)
- General Mathematics I 3(3-0)
- General Biology 3(3-0)
- R.(5) History of Sociology I 2(2-0)
- Fundamentals of Sociology I 3(3-0)

#### YEAR TWO

##### First Semester (20 credits)

##### *General Education (5 credits)*

- Language(2) English/French III 2(6-0)
- Science & Mathematics (3)
- Statistics 3(3-0)
- B.R.(15)** General Philosophy 2(2-0)
- Intro. to Economic Science 3(3-0)
- Anthropology II 2(2-0)
- Sociology of Culture 2(2-0)
- Comparative History of SE Asia 2(2-0)
- World Civilization 2(2-0)
- Logic 2(2-

#### 0)YEAR THREE

##### First Semester (20 credits)

##### *General Education (2 credits)*

- Language (2 credits)
- English/French V 2(6-0)
- Major Courses (18 credits)**
- Methodology of Social Research I 3(3-0)
- Community Development 4(4-0)
- Sociology of Education 3(3-0)
- Sociology of Communic. & Media 3(3-0)
- History of Economic Thought 2(2-0)
- Contem. Camb. Buddhist Philo. 3(3-0)

#### YEAR FOUR

##### First Semester (20 credits)

##### **Major Courses (18 credits)**

- Sociology of Family 3(3-0)
- Soc. of Youth & Group Dynamics 3(3-0)
- Social Work 3(3-0)
- Methodology Social Research III 3(2-2)
- Rural Sociology 3(3-0)
- Urban Sociology 3(3-0)
- Field Research in Sociology (2)**

##### Second Semester (20 credits)

##### *General Education (10 credits)*

- Language (2 credits)
- English/French (II) 2(6-0)
- Social Sciences (3 credits)
- Using Library Resources 1(1-0)
- Constitution & Legislation of Cambodia 2(2-0)
- Science & Mathematics (5)
- Environmental Science 2(2-0)
- PC Application 3(2-2)
- Basic Requirements (10 credits)**
- Fundamentals of Sociology II 3(3-0)
- Anthropology I 2(2-0)
- History of Sociology II 3(3-0)
- Ethnology in Cambodia 2(2-0)

##### Second Semester (20 credits)

##### *General Education (2 credits)*

- Language(2) English/French IV 2(6-0)
- Basic Requirements (6 credits)**
- Social Psychology 2(2-0)
- Buddhism in Cambodia 2(2-0)
- Cambodian Social Institutions 2(2-0)
- M.C.(10)** Demography 3(3-0)
- Intro. to Political Science 3(3-0)
- Social Issues in Cambodia 2(2-0)
- Socio-economic develop. SE Asia 2(2-0)
- Practicum(2)** Field Work 2(80h)

##### Second Semester (20 credits)

##### *General Education (2 credits)*

- Language(2) English/French VI 2(6-0)
- Major Courses (16 credits)**
- Methodology of Social Research II 2(2-0)
- Sociology of Development 4(4-0)
- Environmental Sociology 3(3-0)
- Women Issues in Camb. (Seminar) 2(2-0)
- Sociology of Religion 3(3-0)
- Seminar (Students Presentation) 3(3-0)
- Practicum(2)** Field Work 2(80h)

##### Second Semester (10 credits)

##### **Minor Courses (10 credits)**

- Sociology of Tourism 4(4-0)
- Socio. of Labour and Social Welfare 4(4-0)
- Ethics Issues in Social Science 2(2-0)
- (seminar)

OR

**Thesis (10 credits)**

## DEPARTMENT OF HISTORY

### CURRICULUM OF BACHELOR OF ARTS IN HISTORY

**Total Minimum Requirement: 151 Credits**

#### **YEAR ONE**

##### **First Semester (20 credits)**

##### **General Education (16 credits)**

-Language(2) English/French I 2(6-0)

##### -Social Sciences (4 credits)

Khmer Culture & Society 2(2-0)

World Civilization 2(2-0)

##### -Humanities (4 credits)

Man & Aesthetics/Ethics in Everyday life 2(2-0)

General Philosophy 2(2-0)

##### -Science & Mathematics (6)

General Mathematics I 3(3-0)

General Chemistry 3(3-0)

##### **Basic Requirements (4 credits)**

Introduction to History + Cambodia:

Prehistoric Times 2(2-0)

Collection & Presentation of Info.I 2(2-0)

#### **YEAR TWO**

##### **First Semester (21 credits)**

##### **General Education (5 credits)**

-Language(2) English/French III 2(6-0)

##### -Science & Mathematics (3)

PC Application 3(2-2)

**Basic R. (16)** History Terminology I 2(2-0)

Cambodian Hist. Angkor Period 2(2-0)

World History: Middle Age 2(2-0)

Asia-Pacific: Early history to 16th Cent 2(2-0)

History of Khmer Law 2(2-0)

Research Methodology I 2(2-0)

Inscription Studies I 2(2-0)

Collection & Presentation of Info.II 2(2-0)

#### **YEAR THREE**

##### **First Semester (20 credits)**

##### **General Education (2 credits)**

-Language(2) English/French V 2(6-0)

**Major C. (18)** Demography 3(3-0)

Cambodian Hist: Oudong Period 3(3-0)

World: Vienna Congress-WWI (1815-1914) 3(3-0)

International Relations: 17th-19th cent. 2(2-0)

Hist. Asia-Pacific Region: 1900-1945 3(3-0)

Inscription Studies III 2(2-0)

Collection & Presentation of Info III 2(2-0)

#### **YEAR FOUR**

##### **First Semester (20 credits)**

##### **Major Courses (18 credits)**

Cambodian History: 1918-1953 3(3-0)

World History: 1945-1975 3(3-0)

International Relations 1945-1975 3(3-0)

World Economy History I 3(3-0)

Documentary Research in libraries 4(4-0)

Collection and Presentation of Info IV 2(2-0)

**Practicum: field study (2 credits)**

##### **Second Semester (20 credits)**

##### **General Education (8 credits)**

-Language (2 credits)

English/French II 2(6-0)

-Social Sciences (1 credit)

Using Library Resources 1(1-0)

-Science & Mathematics (5)

Environmental Science 2(2-0)

Statistics 3(3-0)

##### **Basic Requirements (12 credits)**

Cambodian History: Pre-Angkor Period 3(3-0)

World: Prehistoric Times 2(2-0)

World History: Ancient Period 3(2-2)

Basic Archeology 2(2-0)

Ethnology 2(2-0)

##### **Second Semester (20 credits)**

##### **General Education (2 credits)**

-Language (2 credits)

English/French IV 2(6-0)

##### **Basic R. & Major Courses (18 cred)**

Cambodia Hist Chaktomukh & Longvek 3(3-0)

World History: Modern Period 3(3-0)

Asia-Pacific regions: 16-19th century 2(2-0)

International Institutions 2(2-0)

Inscription Studies II 2(2-0)

History Terminology II 2(2-0)

Research Methodology II 2(1-2)

Khmer Archeology 2(2-0)

##### **Second Semester (20 credits)**

##### **General Education (2 credits)**

-Language(2) English/French VI 2(6-0)

**Major C. (18)** Intro to Tourism 2(2-0)

Camb Hist. French Protect (1863-1918) 3(3-0)

World History: 1914-1945 3(3-0)

International Relations 1900-1945 3(3-0)

Hist. Asia-Pacific Region: 1945-present 3(3-0)

Inscription Studies IV 2(2-0)

Economic Geography of Cambodia 2(2-0)

##### **Second Semester (10 credits)**

##### **Major C. (a min. of 10 credits)**

Cambodian History: 1953-present 2(1-2)

International Relations: 1975-present 2(1-2)

Southeast Asia: Present 2(1-2)

World Economy History II 2(2-0)

Research Paper on Cambodia History 2(2-0)

Tour Guide 2(2-0)

## DEPARTMENT OF PHILOSOPHY

### CURRICULUM OF BACHELOR OF ARTS IN PHILOSOPHY

Total Minimum Requirement: 150 Credits

#### YEAR ONE

##### First Semester (20 credits)

##### **General Education (17 credits)**

##### **-Language (2 credits)**

English/French I 2(6-0)

##### **-Social Sciences (4 credits)**

Introduction to Sociology 2(2-0)

General Psychology 2(2-0)

##### **-Humanities (5 credits)**

Cambodian History 3(3-0)

General Philosophy 2(2-0)

##### **-Science & Mathematics (6)**

General Mathematics I 3(3-0)

General Biology 3(3-0)

##### **Basic Requirements (3 credits)**

Ancient Greek Philosophy 3(3-0)

##### Second Semester (20 credits)

##### **General Education (8 credits)**

##### **-Language (2 credits)**

English/French II 2(6-0)

##### **-Social Sciences (1 credit)**

Using Library Resources 1(1-0)

##### **-Science & Mathematics (5)**

Environmental Science 2(2-0)

PC Application 3(2-2)

##### **Basic Requirements (12 credits)**

Medieval Western Philosophy 3(3-0)

Ethics I 3(3-0)

Indian Philosophy I 3(3-0)

Chinese Philosophy I 3(3-0)

#### YEAR TWO

##### First Semester (20 credits)

##### **General Education (5 credits)**

##### **-Language (2 credits)**

English/French III 2(6-0)

##### **-Science & Mathematics (3)**

Statistics 3(3-0)

##### **Basic Requirements (15 credits)**

Renaissance Western Philosophy 3(3-0)

Ethics II 3(3-0)

Indian Philosophy II 3(3-0)

Chinese Philosophy II 3(3-0)

Aesthetics I 3(3-0)

##### Second Semester (20 credits)

##### **General Education (2 credits)**

##### **-Language (2 credits)**

English/French IV 2(6-0)

##### **Basic Requirements (6 credits)**

Aesthetics II 3(3-0)

Introduction to Epistemeology 3(3-0)

##### **Major Courses (12 credits)**

Philosophy of Religion I 3(3-0)

Metaphysics I 3(3-0)

Philosophy of Human Beings 3(3-0)

Philosophy of Science 3(3-0)

#### YEAR THREE

##### First Semester (20 credits)

##### **General Education (2 credits)**

##### **-Language (2 credits)**

English/French V 2(6-0)

##### **Major Courses (18 credits)**

Philosophy of Religion II 3(3-0)

Metaphysics II 3(3-0)

Modern Philosophy I 4(4-0)

Political Philosophy I 4(4-0)

Formal Logics I 4(4-0)

##### Second Semester (20 credits)

##### **General Education (2 credits)**

##### **-Language (2 credits)**

English/French VI 2(6-0)

##### **Major Courses (18 credits)**

Modern Philosophy II 4(4-0)

Political Philosophy II 4(4-0)

Philosophy of Social Science 3(3-0)

History of Political Thought 3(3-0)

Formal Logics II 4(4-0)

#### YEAR FOUR

##### First Semester (20 credits)

##### **Major Courses (12 credits)**

Contemporary Western Philo 3(3-0)

Dialectical Materialism 3(3-0)

Buddhist Philosophy 3(3-0)

Political Science I 3(3-0)

##### **Free Elective Courses (8 credits)**

Social Psychology 3(3-0)

Theory of Modern Society 3(3-0)

Collection and Presentation of Inform 2(2-0)

##### Second Semester (10 credits)

##### **Minor Courses (10 credits)**

Political Science II 3(3-0)

Applied Logics II 3(3-0)

Comparison of Religions 2(2-0)

Philosophy of Culture 2(2-0)

**OR**

**Thesis (10 credits)**

## DEPARTMENT OF COMPUTER SCIENCE

### CURRICULUM OF BACHELOR OF SCIENCE IN COMPUTER SCIENCE

**Total Minimum Requirement: 150 Credits**

#### **YEAR ONE**

##### **First Semester (20 credits)**

##### ***General Education (17 credits)***

**-Language (2 credits)**  
English I 2(6-0)

**-Social Sciences (4 credits)**  
General Psychology 2(2-0)  
Khmer Culture and Society 2(2-0)

**-Humanities (5 credits)**  
Cambodian History 3(3-0)  
General Philosophy 2(2-0)

**-Science & Mathematics (6)**  
General Mathematics I 3(3-0)  
General Physics 3(3-0)

**Basic Requirements (3 credits)**  
Fundam. Computer Concepts (I) 3(3-0)

#### **YEAR TWO**

##### **First Semester (20 credits)**

##### ***General Education (5 credits)***

**-Language (2 credits)**  
English III 2(6-0)

**-Science & Mathematics (3)**  
Statistics 3(3-0)

##### **Basic Requirements (15 credits)**

Pascal Program Language II 3(2-2)

Data Struct & Algorithm Pascal I 3(3-0)

Data Communications I 3(3-0)

Microprocessors I 3(2-2)

Intro. to Network Operation 3(2-2)

#### **YEAR THREE**

##### **First Semester (20 credits)**

##### ***General Education (2 credits)***

**-Language (2 credits)**  
English V 2(6-0)

##### **Major Courses (18 credits)**

Operating Systems II 3(3-0)

Computer Graphics 3(2-2)

Database (I) 3(2-2)

Info. System Analysis & Design I 3(3-0)

Internet Programming (HTML, JAVA) I 3(2-2)

Object-Oriented Program in C++ I 3(2-2)

#### **YEAR FOUR**

##### **First Semester (20 credits)**

##### **Major Courses (10 credits)**

Computer Networks II 3(3-0)

Unix System Administration II 3(2-2)

Artificial Intelligence 2(2-0)

Simulation Theory 2(2-0)

##### **Free Elective Courses (6 credits)**

Software Development Engineering 3(3-0)

New Technology 3(3-0)

**Practicum (4 credits)** Seminar

##### **Second Semester (20 credits)**

##### ***General Education (8 credits)***

**-Language (2 credits)**  
English II 2(6-0)

**-Social Sciences (1 credit)**  
Using Library Resources 1(1-0)

**-Science & Mathematics (5)**  
Environmental Science 2(2-0)  
General Mathematics II 3(3-0)

##### **Basic Requirements (12 credits)**

Fund. Computer Concepts II 3(2-2)

Unix System 3(2-2)

Pascal Program Language I 3(2-2)

Discrete Maths & Combinatorics 3(3-0)

##### **Second Semester (20 credits)**

##### ***General Education (2 credits)***

**-Language (2 credits)**  
English IV 2(6-0)

##### **Basic Requirements (6 credits)**

Data Struct & Algorithm Pascal II 3(3-0)

Microprocessors II 3(2-2)

##### **Major Courses (12 credits)**

C Programming lang. under Unix 3(2-2)

Data Communications II 3(3-0)

Operating Systems I 3(3-0)

Accounting 3(2-2)

##### **Second Semester (20 credits)**

##### ***General Education (2 credits)***

**-Language (2 credits)**  
English VI 2(6-0)

##### **Major Courses (18 credits)**

Database II 3(2-2)

Info. System Analysis & Design II 3(3-0)

Internet Programming (HTML, JAVA) II 3(2-2)

Object-Oriented Program in C++ II 3(2-2)

Computer Networks (I) 3(3-0)

Unix System Administration I 3(2-2)

##### **Second Semester (10 credits)**

##### **Minor Courses (10 credits)**

Client-Server Computing 3(2-2)

Network Applic. Programming 3(2-2)

Info. System Security & Auditing 2(1-2)

Windows Programming with Multimedia 2(1-2)

**OR**

**Thesis (10 credits)**

## DEPARTMENT OF MATHEMATICS

### CURRICULUM OF BACHELOR OF SCIENCE IN MATHEMATICS

Total Minimum Requirement: 150 Credits

#### YEAR ONE

##### First Semester (20 credits)

##### **General Education (14 credits)**

##### **-Language (2 credits)**

English/French I 2(6-0)

##### **-Social Sciences (4 credits)**

General Psychology 2(2-0)

Khmer Culture and Society 2(2-0)

##### **-Humanities (5 credits)**

Cambodian History 3(3-0)

Introduction to Logics 2(2-0)

##### **-Science & Mathematics (3)**

General Physics I. 3(3-0)

##### **Basic Requirements (6 credits)**

Arithmetic & Logic Mathematics 3(3-0)

Calculus I 3(3-0)

#### YEAR TWO

##### First Semester (20 credits)

##### **General Education (5 credits)**

##### **-Language (2 credits)**

English/French III 2(6-0)

##### **-Science & Mathematics (3)**

PC Application 3(2-2)

##### **Basic Requirements (3 credits)**

Linear Algebra 3(3-0)

**Major Courses(12)** Algebra II 3(3-0)

Calculus III 3(3-0)

General Mechanics 3(3-0)

Solid Analytical Geometry 3(3-0)

#### YEAR THREE

##### First Semester (20 credits)

##### **General Education (2 credits)**

##### **-Language (2 credits)**

English/French V 2(6-0)

**B.R.(4)** Computer Language 2(2-0)

Engineering Mechanics II 2(2-0)

**M.C.(14)**Advanced Algebra I 3(3-0)

Problem solving w/ Computers 3(3-0)

Complex Variables 3(3-0)

Probability 3(3-0)

Operational Research 2(2-0)

#### YEAR FOUR

##### First Semester (20 credits)

##### **Major Courses (18 credits)**

Theory of Modules 3(2-2)

Theory of Measures & Integrations I 3(2-2)

Theory of Probability 3(3-0)

Topology II 3(2-2)

Numerical Analysis 3(2-2)

Thermodynamic Statistics 3(3-0)

**Seminar (2 credits)** 2(2-0)

##### Second Semester (20 credits)

##### **General Education (8 credits)**

##### **-Language (2 credits)**

English/French II 2(6-0)

##### **-Social Sciences (1 credit)**

Using Library Resources 1(1-0)

##### **-Science & Mathematics (5)**

Environmental Science 2(2-0)

General Physics II 3(3-0)

##### **Basic Requirements (12 credits)**

Algebra I 3(3-0)

Calculus II 3(3-0)

Analytical Geometry 3(3-0)

Set Theory - Group theory 3(3-0)

##### Second Semester (20 credits)

##### **General Education (2 credits)**

##### **-Language (2 credits)**

English/French IV 2(6-0)

##### **Basic Requirements (5 credits)**

Fundamental Computer Concepts 3(3-0)

Introduction to Statistics 2(2-0)

##### **Major Courses (13 credits)**

Fundamental Concepts of Algebra 3(3-0)

Real Analysis 3(3-0)

Ordinary Differential Equations 3(3-0)

Engineering Mechanics I 2(2-0)

Differential Geometry 2(2-0)

##### Second Semester (20 credits)

##### **General Education (2 credits)**

##### **-Language (2 credits)**

English/French VI 2(6-0)

##### **Major Courses (18 credits)**

Advanced Algebra II 3(3-0)

Topology I 3(3-0)

Statistics and Sampling Theory 3(3-0)

Numerical Methods 3(3-0)

Differential Calculus 3(3-0)

Mechanics of Materials/Fluids 3(3-0)

##### Second Semester (10 credits)

##### **Minor Courses (min. of 10 credits)**

Abstract Algebra 3(2-2)

Theory of Measures & Integrations II 3(2-2)

Prob & Stats for Econom & Soc. Science 3(3-0)

Stats for Environ Science & Demography 3(3-0)

Theory of Games 3(3-0)

Fourier & Laplace Transformations 3(3-0)

**OR Thesis (10 credits)**

## DEPARTMENT OF PHYSICS

### CURRICULUM OF BACHELOR OF SCIENCE IN PHYSICS

Total Minimum Requirement: 154 Credits

#### YEAR ONE

##### First Semester (21 credits)

##### *General Education (17 credits)*

- Language (2 credits)
- English/French I 2(6-0)
- Social Sciences (4 credits)
- General Psychology 2(2-0)
- Khmer Culture and Society 2(2-0)
- Humanities (5 credits)
- Cambodian History 3(3-0)
- Introduction to Logics 2(2-0)
- Science & Mathematics (6)
- General Mathematics I 3(3-0)
- General Chemistry I 3(3-0)

##### *Basic Requirements (3 credits)*

- General Physics I 3(3-0)

#### YEAR TWO

##### First Semester (20 credits)

##### *General Education (5 credits)*

- Language (2 credits)
- English/French III 2(6-0)
- Science & Mathematics (3)
- Statistics 3(3-0)
- B.R.(15)* Mechanics & Heat 3(3-0)
- Mathematics III 3(3-0)
- Electricity & Magnetism I 3(3-0)
- Thermo& Intro to Kinetic Theory I 3(3-0)
- General Physics Lab I 1(0-3)
- Geometrical Optics I 2(2-0)

#### YEAR THREE

##### First Semester (21 credits)

##### *General Education (2 credits)*

- Language(2) English/French V 2(6-0)

##### *Major Courses (19 credits)*

- Electronics II 3(3-0)
- Optics and Waves 3(3-0)
- Electromagnetic Waves 3(3-0)
- Quantum Mechanics I 3(3-0)
- Theoretical Mechanics I 3(3-0)
- General Physics Laboratory III 1(0-3)
- Atomic Physics 2(2-0)
- Electronics Laboratory I 1(0-3)

#### YEAR FOUR

##### First Semester (20 credits)

- Major C.(20)* Electronics IV 3(3-0)
- Solid State Physics 3(3-0)
- Electronics Laboratory III 1(0-3)
- Fibreoptics 3(3-0)
- Basic Programming 2(2-2)
- Group Theory 2(2-0)
- Telecommunications Theory 2(2-0)
- Antenna Theory 2(2-0)
- Advanced Mathematics 2(2-0)

##### Second Semester (20 credits)

##### *General Education (8 credits)*

- Language (2 credits)
- English/French II 2(6-0)
- Social Sciences (1 credit)
- Using Library Resources 1(1-0)
- Science & Mathematics (5)
- General Biology I 3(3-0)
- Environmental Science 2(2-0)
- Basic Requirements (12 credits)*
- General Physics II 3(3-0)
- Mathematics II 3(3-0)
- PC Application 3(2-2)
- General Chemistry II 3(3-0)

##### Second Semester (23 credits)

##### *General Education (2 credits)*

- Language (2 credits)
- English/French IV 2(6-0)
- Basic Requirements (6 credits)*
- Vector Analysis 3(3-0)
- Techniques of Maths for Physics 3(3-0)
- Major Course(15)* Electronics I 3(3-0)
- General Physics Lab II 1(0-3)
- Mechanics and Heat II 3(3-0)
- Electricity & Magnetism II 3(3-0)
- Thermo& Intro to Kinetic Theory II 3(3-0)
- Geometrical Optics II 2(2-0)

##### Second Semester (19 credits)

##### *General Education (2 credits)*

- Language(2) English/French VI 2(6-0)
- Major Courses (17 credits)*
- Quantum Mechanics II 3(3-0)
- Theoretical Mechanics II 3(3-0)
- Electronics III 3(3-0)
- Nuclear Physics 3(3-0)
- Statistical Physics 3(3-0)
- Electronics Laboratory II 1(0-3)
- General Physics Laboratory IV 1(0-3)

##### Second Semester (10 credits)

##### *Minor Courses (min. of 10 credits)*

- Applied Electronics 3(2-3)
- Applied Mechanics 3(2-2)
- Atomic Spectra 2(2-0)
- Solid State Technology 2(2-0)
- Applied Energy 3(2-3)
- Radio System 3(3-0); Television 3(3-0)
- Microwave 3(3-0); Elec Machinery 4(3-3)
- Digital Computer & Logic Design 4(3-3)
- OR Thesis (10 credits)

DEPARTMENT OF CHEMISTRY

CURRICULUM OF BACHELOR OF SCIENCE IN CHEMISTRY

Total Minimum Requirement: 152 Credits

**YEAR ONE**

First Semester (21 credits)

*General Education (17 credits)*

-Language(2) English/French I 2(6-0)

-Social Sciences (4 credits)

General Psychology 2(2-0)

Khmer Culture and Society 2(2-0)

-Humanities (5 credits)

Cambodian History 3(3-0)

Introduction to logic 2(2-0)

-Science & Mathematics (6)

General Mathematics I 3(3-0)

General Biology I 3(3-0)

*Basic Requirements (4 credits)*

General Chemistry I 3(3-0)

Laboratory Techniques 1(0-3)

**PART TWO**

First Semester (21 credits)

*General Education (5 credits)*

-Language (2 credits)

English/French III 2(6-0)

-Science & Mathematics (3)

Statistics 3(3-0)

*B.R.(16)* Basic Organic Chemistry 1(1-0)

General Mathematics III 3(3-0)

General Physics II 3(3-0)

Plant Anatomy 3(2-3)

Physical Chemistry I 3(3-0)

Inorganic Chemistry I 3(3-0)

**YEAR THREE**

First Semester (20 credits)

*General Education (2 credits)*

Language(2) English/French V 2(6-0)

*Major Courses (18 credits)*

Organic Chemistry II 3(3-0)

Biochemistry I 3(3-0)

Physical Chemistry III 4(3-2)

Analytical Chemistry II 3(3-0)

Chemical Separation Techniques 3(2-3)

Organic Chemistry Lab I 1(0-3)

Analytical Chemistry Lab 1(0-3)

**YEAR FOUR**

First Semester (20 credits)

*M.C.(16)* Research Methodology 2(2-0)

Physical Organic Chemistry 3(3-0)

Natural Compounds 2(2-0)

Catalysis 2(2-0)

Surface Chemistry 3(3-0)

Bioinorganic Chemistry 2(2-0)

Environmental Chemistry 2(2-0)

*Free electives(a min. of 4 credits)*

Agrochemistry 2(2-0) Industrial Chem 4(4-0)

Pharmaceutical (2); Cosmetics (2); Petroleum(2)

Applied Electrochem (2) Crystallography 2(2-0)

Second Semester (20 credits)

*General Education (8 credits)*

-Language (2 credits)

English/French II 2(6-0)

-Social Sciences (1 credit)

Using Library Resources 1(1-0)

-Science & Mathematics (5)

General Physics I 3(3-0)

Environmental Science 2(2-0)

*Basic Requirements (12 credits)*

General Biology II 3(3-0)

General Mathematics II 3(3-0)

Cell Biology 2(2-0)

General Chemistry II 3(3-0)

General Chemistry Laboratory 1(0-3)

Second Semester (20 credits)

*General Education (2 credits)*

-Language (2 credits)

English/French IV 2(6-0)

*Basic Requirements (6 credits)*

Organic Chemistry I 3(3-0)

Physical Chemistry II 3(3-0)

*Major C. (12)* Microbiology 4(3-3)

Inorganic Chemistry II 3(3-0)

Analytical Chemistry I 3(3-0)

Physical Chemistry Laboratory 1(0-3)

Inorganic Chemistry Laboratory 1(0-3)

Second Semester (20 credits)

*General Education (2 credits)*

-Language(2) English/French VI 2(6-0)

*Major Courses (18 credits)*

Organic Chemistry III 3(3-0)

Biochemistry II 3(2-3)

Instrum. Methods of Chem Analysis 3(2-2)

Organic Chemistry Lab II 1(0-3)

Introduction to Polymer Science 2(2-0)

Structure and Energetics 3(3-0)

Optimization of Experiments 3(3-0)

Second Semester (10 credits)

*Minor Courses(min. of 10 credits)*

Food Chemistry 2(2-0)

Polymer Synthesis 2(2-0)

Organic Synthesis 2(2-0)

Inorganic Synthesis 2(2-0)

Biopolymers 2(2-0)

Environmental Biochemistry 2(2-0)

Seminar in Chemistry 2(2-0)

OR

*Thesis (10 credits)*

## DEPARTMENT OF CHEMISTRY

### CURRICULUM OF BACHELOR OF SCIENCE IN BIOCHEMISTRY

Total Minimum Requirement: 152 Credits

#### YEAR ONE

##### First Semester (21 credits)

###### *General Education (17 credits)*

-Language(2) English/French I 2(6-0)

-Social Sciences (4 credits)

General Psychology 2(2-0)

Khmer Culture and Society 2(2-0)

-Humanities (5 credits)

Cambodian History 3(3-0)

Introduction to logic 2(2-0)

-Science & Mathematics (6)

General Mathematics I 3(3-0)

General Biology I 3(3-0)

###### *Basic Requirements (4 credits)*

General Chemistry I 3(3-0)

Laboratory Techniques 1(0-3)

#### YEAR TWO

##### First Semester (21 credits)

###### *General Education (5 credits)*

-Language (2 credits)

English/French III 2(6-0)

-Science & Mathematics (3)

Statistics 3(3-0)

**B.R.(16)** Basic Organic Chemistry 1(1-0)

General Mathematics III 3(3-0)

General Physics II 3(3-0)

Plant Anatomy 3(2-3)

Physical Chemistry I 3(3-0)

Inorganic Chemistry I 3(3-0)

#### YEAR THREE

##### First Semester (20 credits)

###### *General Education (2 credits)*

-Language(2) English/French V 2(6-0)

###### *Major Courses (18 credits)*

Organic Chemistry II 3(3-0)

Biochemistry I 3(3-0)

Plant Physiology 4(3-3)

Analytical Chemistry II 3(3-0)

Chemical Separation Techniques 3(2-3)

Organic Chemistry Lab I 1(0-3)

Analytical Chemistry Lab 1(0-3)

#### YEAR FOUR

##### First Semester (20 credits)

###### *Major Courses (20 credits)*

Enzyme Kinetics & Metabolic Control 3(3-0)

Bioenergetics 3(3-0)

Biochemical Genetics 3(3-0)

Fermentation Technology 3(2-3)

Enzyme Technology 3(2-3)

Biochem of Industrial Fermentation 3(3-0)

Biochem Aspects of Immunology 2(2-0)

##### Second Semester (20 credits)

###### *General Education (8 credits)*

-Language (2 credits)

English/French II 2(6-0)

-Social Sciences (1 credit)

Using Library Resources 1(1-0)

-Science & Mathematics (5)

General Physics I 3(3-0)

Environmental Science 2(2-0)

###### *Basic Requirements (12 credits)*

General Biology II 3(3-0)

General Mathematics II 3(3-0)

Cell Biology 2(2-0)

General Chemistry II 3(3-0)

General Chemistry Laboratory 1(0-3)

##### Second Semester (20 credits)

###### *General Education (2 credits)*

-Language (2 credits)

English/French IV 2(6-0)

**Basic Requirements (6 credits)**

Organic Chemistry I 3(3-0)

Physical Chemistry II 3(3-0)

**Major C. (12)** Microbiology 4(3-3)

Inorganic Chemistry II 3(3-0)

Analytical Chemistry I 3(3-0)

Physical Chemistry Laboratory 1(0-3)

Inorganic Chemistry Laboratory 1(0-3)

##### Second Semester (20 credits)

###### *General Education (2 credits)*

-Language(2) English/French VI 2(6-0)

###### *Major Courses (18 credits)*

Organic Chemistry III 3(3-0)

Biochemistry II 3(2-3)

Instrum. Methods of Chem Analysis 3(2-2)

Organic Chemistry Lab II 1(0-3)

Introduction to Polymer Science 2(2-0)

Biochemical Methods 3(2-3)

Mechanistic Biochemistry 3(3-0)

##### Second Semester (10 credits)

###### *Minor Courses(min. of 10 credits)*

Carbohydrate Technology 2(2-0)

Protein Technology 2(2-0)

Biochem Aspects of flavor & aroma 2(2-0)

Environmental Biochemistry 2(2-0)

Seminar in Biochemistry &

Biochemical Technology 1(1-0)

Special Problems in Biochemistry

& Biochemical Technology 3(1-6)

OR Thesis (10 credits)



## DEPARTMENT OF BIOLOGY

### CURRICULUM OF BACHELOR OF SCIENCE IN BIOLOGY

**Total Minimum Requirement: 150 Credits**

#### YEAR ONE

##### First Semester (20 credits)

**General Education (17 credits)**

- Language (2 credits)
- English/French I 2(6-0)
- Social Sciences (4 credits)
- General Psychology 2(2-0)
- Khmer Culture and Society 2(2-0)
- Humanities (5 credits)
- Cambodian History 3(3-0)
- General Philosophy 2(2-0)
- Science & Mathematics (6)
- General Mathematics I 3(3-0)
- General Chemistry I 3(3-0)
- Basic Requirements (3 credits)**
- General Biology I 3(3-0)

##### Second Semester (20 credits)

**General Education (8 credits)**

- Language (2 credits)
- English/French II 2(6-0)
- Social Sciences (1 credit)
- Using Library Resources 1(1-0)
- Science & Mathematics (5)
- General Physics I 3(3-0)
- Environmental Science 2(2-0)
- Basic Requirements (12 credits)**
- General Biology II 3(3-0)
- General Mathematics II 3(3-0)
- Cell Biology 3(3-0)
- General Chemistry II 3(3-0)

#### YEAR TWO

##### First Semester (20 credits)

**General Education (5 credits)**

- Language (2 credits)
- English/French III 2(6-0)
- Science & Mathematics (3)
- Statistics 3(3-0)
- B.R.(15) Organic Chemistry I 3(3-0)**
- Biochemistry I 3(3-0)
- General Physics II 3(3-0)
- Plant Anatomy 4(4-0)
- Plant Anatomy Laboratory 1(0-3)
- Chemistry Laboratory Techniques 1(0-3)

##### Second Semester (20 credits)

**General Education (2 credits)**

- Language (2 credits)
- English/French IV 2(6-0)
- Basic Requirements (6 credits)**
- Organic Chemistry II 3(3-0)
- Morphology of NonVascular Plants 3(2-3)
- Major Courses (12 credits)**
- Microbiology 4(4-0)
- Microbiology Laboratory 1(0-3)
- Genetics 3(2-3)
- Ecology 4(4-0)

#### YEAR THREE

##### First Semester (20 credits)

**General Education (2 credits)**

- Language(2) English/French V 2(6-0)
- M.C.(18) Animal Physiology 3(3-0)**
- Animal Physiology Laboratory 1(0-3)
- Plant Physiology 3(3-0)
- Plant Physiology Laboratory 1(0-3)
- Biochemistry II 3(2-3)
- Invertebrate 3(3-0)
- Invertebrate Laboratory 1(0-3)
- Morphology of Vascular Plants 2(2-0)
- Morphology of Vascular Plants Lab 1(0-3)

##### Second Semester (20 credits)

**General Education (2 credits)**

- Language(2) English/French VI 2(6-0)
- Science & Mathematics (3)
- PC Application 3(2-2)
- Major Courses (15 credits)**
- Molecular Biology 3(3-0)
- Scientific Method and Reporting 2(2-0)
- Biometry 3(3-0)
- General Plant Taxonomy 3(2-3)
- Vertebrate 3(3-0)
- Vertebrate Laboratory 1(0-3)

#### YEAR FOUR

##### First Semester (20 credits)

**M.C.(16) Microtechnique 3(3-0)**

- Taxonomy of Flowering Plants 3(3-0)
- Taxonomy Flowering Plants Lab 1(0-3)
- Comparative Develop. Animal Anatomy 2(2-0)
- Plant Ecology 2(2-0)
- Animal Ecology 2(2-0)
- Industrial Microbiology 3(2-3)
- Practicum (4 credits)**

##### Second Semester (10 credits)

**Minor Courses (10 credits)**

- Agricultural Microbiology 3(2-3)
- Environmental Toxicology 2(2-0)
- Parasitology 2(2-0)
- Marine Ecology 3(3-0)

**OR**

**Thesis (10 credits)**

## DEPARTMENT OF BIOLOGY

### CURRICULUM OF BACHELOR OF SCIENCE IN MICROBIOLOGY

**Total Minimum Requirement: 150 Credits**

#### YEAR ONE

##### First Semester (20 credits)

##### **General Education (17 credits)**

-Language (2 credits)

English/French I 2(6-0)

-Social Sciences (4 credits)

General Psychology 2(2-0)

Khmer Culture and Society 2(2-0)

-Humanities (5 credits)

Cambodian History 3(3-0)

General Philosophy 2(2-0)

-Science & Mathematics (6)

General Mathematics I 3(3-0)

General Chemistry I 3(3-0)

##### **Basic Requirements (3 credits)**

General Biology I 3(3-0)

#### YEAR TWO

##### First Semester (20 credits)

##### **General Education (5 credits)**

-Language (2 credits)

English/French III 2(6-0)

-Science & Mathematics (3)

Statistics 3(3-0)

**B.R.(15) Organic Chemistry I 3(3-0)**

Biochemistry I 3(3-0)

General Physics II 3(3-0)

Plant Anatomy 4(4-0)

Plant Anatomy Laboratory 1(0-3)

Chemistry Laboratory Techniques 1(0-3)

#### YEAR THREE

##### First Semester (20 credits)

##### **General Education (2 credits)**

-Language(2) English/French V 2(6-0)

##### **Major Courses (18 credits)**

Mycology 4(3-3)

Plant Physiology 3(3-0)

Plant Physiology Laboratory 1(0-3)

Biochemistry II 3(2-3)

Animal Physiology 3(3-0)

Animal Physiology Laboratory 1(0-3)

Analytical Chemistry I 3(3-0)

#### YEAR FOUR

##### First Semester (20 credits)

**M.C.(16) Microbial Genetic 2(2-0)**

Industrial Microbiology 3(2-3)

Agricultural Microbiology 3(2-3)

Microbial Ecology 2(2-0)

Immunology and Serology 2(2-0)

Plant Pathology 2(2-0)

Environmental Toxicology 2(2-0)

**Practicum (4 credits)**

##### Second Semester (20 credits)

##### **General Education (8 credits)**

-Language (2 credits)

English/French II 2(6-0)

-Social Sciences (1 credit)

Using Library Resources 1(1-0)

-Science & Mathematics (5)

General Physics I 3(3-0)

Environmental Science 2(2-0)

##### **Basic Requirements (12 credits)**

General Biology II 3(3-0)

General Mathematics II 3(3-0)

Cell Biology 3(3-0)

General Chemistry II 3(3-0)

##### Second Semester (20 credits)

##### **General Education (2 credits)**

-Language (2 credits)

English/French IV 2(6-0)

##### **Basic Requirements (6 credits)**

Organic Chemistry II 3(3-0)

Morphology of NonVascular Plants 3(2-3)

##### **Major Courses (12 credits)**

Microbiology 4(4-0)

Microbiology Laboratory 1(0-3)

Genetics 3(2-3)

Ecology 4(4-0)

##### Second Semester (20 credits)

##### **General Education (2 credits)**

-Language(2) English/French VI 2(6-0)

-Science & Mathematics (3)

PC Application 3(2-2)

##### **Major Courses (15 credits)**

Molecular Biology 3(3-0)

Scientific Method and Reporting 2(2-0)

Biometry 3(3-0)

Analytical Chemistry II 3(2-3)

Bacterial Physiology 4(4-0)

##### Second Semester (10 credits)

##### **Minor Courses (10 credits)**

Determination Bacterial 2(2-0)

Molecular Cloning of Genes 2(2-0)

Fermentation Technology 2(2-0)

Enzymatology 2(2-0)

Food Microbiology 2(2-0)

#### OR

**Thesis (10 credits)**

## DEPARTMENT OF BIOLOGY

### CURRICULUM OF BACHELOR OF SCIENCE IN BOTANY

**Total Minimum Requirement: 150 Credits**

#### YEAR ONE

##### First Semester (20 credits)

##### **General Education (17 credits)**

<b>-Language (2 credits)</b>	
English/French I	2(6-0)
<b>-Social Sciences (4 credits)</b>	
General Psychology	2(2-0)
Khmer Culture and Society	2(2-0)
<b>-Humanities (5 credits)</b>	
Cambodian History	3(3-0)
General Philosophy	2(2-0)
<b>-Science &amp; Mathematics (6)</b>	
General Mathematics I	3(3-0)
General Chemistry I	3(3-0)
<b>Basic Requirements (3 credits)</b>	
General Biology I	3(3-0)

#### YEAR TWO

##### First Semester (20 credits)

##### **General Education (5 credits)**

<b>-Language (2 credits)</b>	
English/French III	2(6-0)
<b>-Science &amp; Mathematics (3)</b>	
Statistics	3(3-0)
<b>B.R.(15) Organic Chemistry I</b>	3(3-0)
Biochemistry I	3(3-0)
General Physics II	3(3-0)
Plant Anatomy	4(4-0)
Plant Anatomy Laboratory	1(0-3)
Chemistry Laboratory Techniques I	(0-3)

#### YEAR THREE

##### First Semester (20 credits)

##### **General Education (2 credits)**

**-Language(2) English/French V** 2(6-0)

##### **Major Courses (18 credits)**

Plant Sciences	2(2-0)
Plant Physiology	3(3-0)
Plant Physiology Laboratory	1(0-3)
Plant Microtechnique	3(3-0)
Plant Breeding	3(2-3)
Mycology	3(2-3)
Morphology of Vascular Plants	2(2-0)
Morphology of Vascular Plants Lab I	1(0-3)

#### YEAR FOUR

##### First Semester (20 credits)

<b>M.C.(16) Plant Patology</b>	2(2-0)
Taxonomy of Flowering Plants	3(3-0)
Taxonomy Flowering Plants Lab I	1(0-3)
Biology of Aquatic Plants	2(2-0)
Plant Growth and Development	2(2-0)
Agricultural Microbiology	3(2-3)
Industrial Microbiology	3(2-3)

##### Second Semester (20 credits)

##### **General Education (8 credits)**

<b>-Language (2 credits)</b>	
English/French II	2(6-0)
<b>-Social Sciences (1 credit)</b>	
Using Library Resources	1(1-0)
<b>-Science &amp; Mathematics (5)</b>	
General Physics I	3(3-0)
Environmental Science	2(2-0)
<b>Basic Requirements (12 credits)</b>	
General Biology II	3(3-0)
General Mathematics II	3(3-0)
Cell Biology	3(3-0)
General Chemistry II	3(3-0)

##### Second Semester (20 credits)

##### **General Education (2 credits)**

<b>-Language (2 credits)</b>	
English/French IV	2(6-0)
<b>Basic Requirements (6 credits)</b>	
Organic Chemistry II	3(3-0)
Morphology of NonVascular Plants	3(2-3)
<b>Major Courses (12 credits)</b>	
Microbiology	4(4-0)
Microbiology Laboratory	1(0-3)
Genetics	3(2-3)
Ecology	4(4-0)

##### Second Semester (20 credits)

##### **General Education (2 credits)**

<b>-Language(2) English/French VI</b> 2(6-0)	
<b>-Science &amp; Mathematics (3)</b>	
PC Application	3(2-2)
<b>Major Courses (15 credits)</b>	
General Plant Taxonomy	3(2-3)
Biology of Fruit Plants	3(3-0)
Horticulture	3(3-0)
Weeds and Weed control	3(3-0)
Economic Botany	3(3-0)

##### Second Semester (10 credits)

##### **Minor Courses (10 credits)**

Plant Tissue Culture	4(3-3)
Environmental Toxicology	2(2-0)
Industrial Botany	2(2-0)
Plant Biophysicochemical Processes	2(2-0)

**OR**

## DEPARTMENT OF BIOLOGY

### CURRICULUM OF BACHELOR OF SCIENCE IN ZOOLOGY

**Total Minimum Requirement: 152 Credits**

#### **YEAR ONE**

##### **First Semester (20 credits)**

##### **General Education (17 credits)**

##### **-Language (2 credits)**

English/French I 2(6-0)

##### **-Social Sciences (4 credits)**

General Psychology 2(2-0)

Khmer Culture and Society 2(2-0)

##### **-Humanities (5 credits)**

Cambodian History 3(3-0)

General Philosophy 2(2-0)

##### **-Science & Mathematics (6)**

General Mathematics I 3(3-0)

General Chemistry I 3(3-0)

##### **Basic Requirements (3 credits)**

General Biology I 3(3-0)

##### **Second Semester (20 credits)**

##### **General Education (8 credits)**

##### **-Language (2 credits)**

English/French II 2(6-0)

##### **-Social Sciences (1 credit)**

Using Library Resources 1(1-0)

##### **-Science & Mathematics (5)**

General Physics I 3(3-0)

Environmental Science 2(2-0)

##### **Basic Requirements (12 credits)**

General Biology II 3(3-0)

General Mathematics II 3(3-0)

Cell Biology 3(3-0)

General Chemistry II 3(3-0)

#### **YEAR TWO**

##### **First Semester (20 credits)**

##### **General Education (5 credits)**

##### **-Language (2 credits)**

English/French III 2(6-0)

##### **-Science & Mathematics (3)**

Statistics 3(3-0)

##### **B.R. (15) Organic Chemistry I 3(3-0)**

Biochemistry I 3(3-0)

General Physics II 3(3-0)

Plant Anatomy 4(4-0)

Plant Anatomy Laboratory 1(0-3)

Chemistry Laboratory Techniques 1(0-3)

##### **Second Semester (20 credits)**

##### **General Education (2 credits)**

##### **-Language (2 credits)**

English/French IV 2(6-0)

##### **Basic Requirements (6 credits)**

Organic Chemistry II 3(3-0)

Morphology of NonVascular Plants 3(2-3)

##### **Major Courses (12 credits)**

Microbiology 4(4-0)

Microbiology Laboratory 1(0-3)

Genetics 3(2-3)

Ecology 4(4-0)

#### **YEAR THREE**

##### **First Semester (20 credits)**

##### **General Education (2 credits)**

##### **-Language(2) English/French V 2(6-0)**

##### **Major Courses (18 credits)**

Animal Physiology 3(3-0)

Animal Physiology Laboratory 1(0-3)

Invertebrate Laboratory 1(0-3)

Invertebrate 3(3-0)

Parasitology 3(3-0)

Entomology 4(3-3)

Animal Microtechnique 3(3-0)

##### **Second Semester (20 credits)**

##### **General Education (2 credits)**

##### **-Language(2) English/French VI 2(6-0)**

##### **-Science & Mathematics (3)**

PC Application 3(2-2)

##### **Major Courses (15 credits)**

Vertebrate 4(4-0)

Vertebrate Laboratory 1(0-3)

Human Anatomy 3(3-0)

Animal Behaviour 3(3-0)

Animal Development Biology 4(4-0)

#### **YEAR FOUR**

##### **First Semester (22 credits)**

**M.C. (18) Animal Taxonomy 3(3-0)**

Animal Taxonomy Laboratory 1(0-3)

Comparative Develop. Anatomy 2(2-0)

Marine Ecology 3(3-0)

Endocrinology 3(3-0)

Economic Entomology 3(3-0)

Ornithology 3(3-0)

**Practicum (4 credits)**

##### **Second Semester (10 credits)**

##### **Minor Courses (10 credits)**

Environmental Toxicology 2(2-0)

Radiobiology 2(2-0)

Virology 3(3-0)

Comparative Animal Neuro-

muscular Physiology

**OR**

**Thesis (10 credits)**