

## COURSE GUIDEBOOK

<b>Department</b>	Biology
<b>Module Name:</b>	Genetics and evolutionary Biology
<b>Course Title:</b>	Principles of Taxonomy
<b>Course Code:</b>	Biol3063
<b>Course Credit point:</b>	3ECTS
<b>Course Credit</b>	2 lecture/week
<b>Pre-requisite</b>	Principles of Genetics (Biol3061)
<b>Target group</b>	3 <sup>rd</sup> year Biology major students
<b>Course status</b>	Compulsory
<b>Academic Year</b>	
<b>Semester</b>	
<b><u>Instructors contact information</u></b>	
Instructors Name	
E-mail	
Phone	
Office Number	
Office Hour	
Class schedule	
Venue	

### 1. Course Description

The course deals with the historical development of taxonomy as a science, principles, procedures and rules of taxonomy, rules of botanical and zoological nomenclatures and the hierarchy of classification, with examples from both plant and animal kingdoms. Classification systems, taxonomic structures, taxonomic evidences, code of nomenclature and purpose of giving names to organisms and nomenclatural codes, taxonomic techniques and the application of taxonomic result in different disciplines are discussed in details

### 2. Course Objectives

After attending this course, each student will be able to:

- Review how the science of taxonomy grew through time
- Discuss the rules and procedures in taxonomic classification
- Enumerate the types and sources of characters used in taxonomic classification
- Describe how species are hierarchically arranged into different taxonomic groups
- Explain various species concepts
- Employ herbarium and museum techniques in taxonomy

### 3. Student Workload

Since the course has 3 ECTS, it accounts for 81 hours of student workload. The distribution of this time for different activities is shown below.

Activities	Hours
Lecture	20
Group discussion and presentation	10
Field and laboratory works	8
Private study	37
Assessment	6

### 4. Teaching-learning Methods

There will be a mixture of traditional lecture, group discussion and presentation in the class. There are questions (often prepared on small pieces of paper and distributed to each group for discussion) that the students will work on with a group of 4-5 students. Finally, each group will present the main points of the discussion.

During the course offering, several non-graded assignments, a graded individual reading assignment term paper (**on classification systems**) and a group reading assignment term paper on **Biological nomenclature and Operative principles of nomenclature** will be given.

A four day field trip to forest area will be prepared to enable the students to observe the diversities of plant and animal that lives in the forest. Being in groups of 5, the students will collect 10 different specimens for both plants and animals, respectively and process them for preservation in the laboratory following the field technique they have learned in class. After one week of return from the field, the students will submit the report, and labeled and preserved specimens depending on the procedures given in the field guide.

## 5. Tentative Course Schedule

Week	Date	Topic	Textbook
1		<ul style="list-style-type: none"> <li><b>Introduction to taxonomy</b> <ul style="list-style-type: none"> <li>-The scope of taxonomy</li> <li>-Narrow and broad meanings of taxonomy</li> <li>-The objectives of taxonomy</li> </ul> </li> </ul>	Stace, C. A. (1980)  Section I  Unit1, pp. 1-16
2		<ul style="list-style-type: none"> <li><b>The development of taxonomy</b> <ul style="list-style-type: none"> <li>-The Origin of Taxonomy</li> <li>-The Historical Development of Taxonomy</li> </ul> </li> </ul> <p><b>Quiz I = 5%</b></p>	Stace, C. A. (1980).  Section I  Unit 2, pp. 17-52
3		<ul style="list-style-type: none"> <li><b>Classification systems</b> <ul style="list-style-type: none"> <li>-Different methods of classification:</li> <li>-Artificial class</li> </ul> </li> </ul> <p>ification and Natural classification</p>	Stace, C. A. (1980).  Section I  Unit 2, pp. 17-52

		-Phyletic, Phenetics and cladistics classifications	
4		<ul style="list-style-type: none"> <li>• <b>The Taxonomic structure</b></li> <li>-The hierarchy in classification</li> <li>-The categories of classification in different groups of organisms</li> <li>- The concept of the species</li> </ul>	Stace, C. A. (1980)  Section I  Unit1, pp . 7-9
5		<b>Test I = (10%)</b> <ul style="list-style-type: none"> <li>• <b>Presentation of assignment I (5%)</b></li> </ul>	
6		<ul style="list-style-type: none"> <li>• <b>Taxonomic Characters</b></li> <li>-The nature of taxonomic characters</li> <li>-Continuous and discontinuous characters</li> <li>-Diagnostic characters</li> </ul>	Stace, C. A. (1980)  Section 3  Unit1, pp. 211-219  Simpson, M. G. (2006)  pp. 502-510
7		<ul style="list-style-type: none"> <li>• <b>Biological nomenclature</b></li> <li>-The purpose of giving names to organisms</li> <li>-The codes of nomenclature and purpose of nomenclatural codes</li> </ul> <b>Quiz II = 5%</b>	Stace, C. A. (1980)  Section 3  Unit1, pp. 211-219  Simpson, M. G. (2006)  pp. 502-510
8		<ul style="list-style-type: none"> <li>• <b>Biological nomenclature</b></li> <li>-ICBN and ICZN</li> <li>-Operative principles of nomenclature</li> <li>- Nomenclatural types</li> </ul>	Stace, C. A. (1980)  Section 3  Unit1, pp. 211-219

			Simpson, M. G. (2006) pp. 502-510
9		<b>Biological nomenclature</b> -Authorities and their citations -Priority of publication - Name changes, Synonyms <b>❖ Assignment II</b>	Simpson, M. G. (2006) pp. 502-510
10		<b>• Taxonomic techniques</b> -Botanical techniques (Field and herbarium techniques) -Zoological techniques (Field techniques and museum techniques)	Stace, C. A. (1980) Section 3 Unit1, pp. 196—205
11		<b>Test II = 10%</b> <b>• Presentation of assignment I (5%)</b>	
12		<b>• The applications of taxonomic results</b> -Dependence of taxonomy on other fields	Stace, C. A. (1980) Section 3 Unit1, pp. 196—205
13		<b>• Field trip week</b>	
14		<b>• Preparation field report and specimen processing</b>	
15		<b>• Submission of field report and specimens (15%)</b>	
16		<b>Final exam= 50%</b>	

## 6. Assessment Methods

Quizzes & Tests .....	30 %	
Assignements and présentation.....	10%	Field
report and presentation.....	10%	
Final exam .....	50%	

Total .....100%

## 7. Course Policies

Regular attendance and punctuality of the students are expected for both lecture and during the field trip. Students are responsible for the assigned readings in the text and will be expected to have read the assignments for the current lecture period. If a student is absent from a class, he/she is accountable for all what is missed. The instructor is under no obligation to make special arrangements for students who have been absent. The field trip is will be arranged only once throughout the course and by no means a student absent fro the field will be excused.

Students will not be allowed to retake exams in order to improve their grades. Makeup exams will be arranged in cases of legitimate absence (illness of student, death in the family or a university sponsored function for which you have a university excuse) from regularly scheduled exams only when prior notice has been given and supporting proof is provided. Exams will not be rescheduled for the convenience of individual students.

## 8. Reference Materials

1. Stace, C. A. (1980). *Plant Taxonomy and Biosystematics: Contemporary Biology*. Edward Arnold, London.
2. Simpson, M. G. (2006). *Plant Systematic*. Elsevier Academic Press, UK.
3. Jeffrey, C. (1978). *Biological Nomenclature* (2<sup>nd</sup> ed.). Edward Arnold, Londo

Checked by

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