



Course Descriptors  
2019 - 2020  
Semester 1

Biology  
Mathayom 4



## EIP Mathayom Biology Course Description First Year

Subject: Core Biology  
Grade: Mathayom 4  
Periods: 4

Department: Science  
Course Code: SC31141  
Credit: 1.5

### Course Material:

Modern Biology, *Holt, Rinehart and Winston*

### Course Description:

The first semester will focus on an introduction to Life Sciences and all its components. Special attention will be paid to fundamental biological concepts and through investigative processes, the learners will become acquainted with the scientific method and the correct ways of communicating their findings. This course will also include the basic units of life starting from atoms and working up the organizational levels to modern organisms. Focus will be given to biochemical structure, cell structure and the relationship between cells and their functions. By doing course labs, projects and assignments, the learners will gain a deeper understanding of the topics studied.



EIP Mathayom Course Outline  
First Semester

**Unit 1:**

*Chapter 1 – The Science of Life*

- The World of Biology p 5
- Themes in Biology p 10
- The Study of Biology p 13
- Tools and Techniques p 21

*Chapter 2 – Chemistry of Life*

- Composition of Matter p 31
- Energy p 35
- Water and Solutions p 39

*Chapter 3 – Biochemistry*

- Carbon compounds p 51
- Molecules of Life p 55

**Unit 2**

*Chapter 4 – Cell Biology*

- Introduction to Cells p 72
- Cell Organelles and Features p 77
- Unique Features in Plant Cells p 87

*Chapter 5 – Homeostasis and Cell Transport*

- Passive Transport p 97
- Active Transport p 103

*Chapter 6 – Photosynthesis*

- The Light Reactions p 113
- The Calvin Cycle p 120

*Chapter 7 – Cellular Respiration*

- Glycolysis and Fermentation p 131
- Aerobic Respiration p 137



EIP Mathayom Evaluation and Grading  
First Semester

**Breakdown of Grades**

Criteria	1 <sup>st</sup> quarter	2 <sup>nd</sup> quarter	Total
Homework	5%	5%	10%
Participation	5%	5%	10%
Behavior	5%	5%	10%
Labs/Group Work	5%	5%	10%
Tests/Quizzes	20%	20%	40%
Midterm Examination			
Final Examination		20%	20%
Total	40%	60%	100%