


**Extended Syllabus**  
**(2015-1 Spring Semester) v1.0**

<b>Course Title</b>	<b>Life and Environment</b> 생명과 환경 (Class #3)	<b>Course Number</b>	<b>STS2002-03</b>
<b>Credit</b>	3	<b>Enrollment Eligibility</b>	
<b>Class Time</b>	<b>Tue &amp; Thr 4:30PM</b>	<b>Classroom</b>	<b>TBA</b>

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	<hr style="width: 50%; margin: 0 auto;"/>	
	<b>Office: K233</b> <b>Office Hours: TBA</b> <b>TA: TBA</b>	

**I . Course Overview**

**1. Description**

The purpose of this class is to introduce **the biological sciences to non-science majors**. The field encompasses a broad variety of topics that can be sub-categorized into the following four areas:

1. **Life**  
Water, Carbon, Nutrient, Energy, Metabolism, Enzyme, Photosynthesis, Cellular Respiration
2. **Cell**  
Cell, DNA, RNA, Protein, Mutation, Cancer, Inheritance, Genetics, Biotechnology
3. **Human**  
Disease, Bacteria, Virus, Homeostasis, Organs, Organ Systems, Vaccine, Sex, Brain
4. **Environment**  
Evolution, Natural Selection, Biodiversity, Ecology, Conservation, Sustainability, Ethics

As an introductory course, it will not be possible nor beneficial to students to cover all topics in depth, however, each course offering of Life & Environment will cover the basics of all four areas with variable depth on specific areas based on the expertise of the particular professor.

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Among the areas above, this offering of the course will focus more on the **Cell** and **Human** areas with an emphasis on the understanding of current biotechnological advancements and their applications in our daily lives. For this purpose, we will also read **relevant newspaper articles** at the end of each chapter.

**2. Prerequisites**

This course is a 100% English-based class for both lecture and discussion.  
No previous exposure to the biology is necessary. The prerequisite for this class is your strong interest and enthusiasm for the biological sciences.

### 3. Course Format (%)

Lecture	Discussion	Experiment	Field study	Presentations	Other
80 %	10 %	0 %	0 %	%	10 %

### 4. Evaluation (%)

Mid-Term Exam	36 %	Presentations	-
Final Exam	37 %	Projects	-
Quizzes / IAL	7%	Participation	6 %
Assignments	14 %	Other	-

## II. Course Objectives

Goals of the course:

1. To provide a foundation of basic biology knowledge including the vocabulary necessary to communicate relevant topics.
2. To improve scientific literacy for the understanding and appreciation of future advances in biology as one may encounter in news for the general public.
3. To provide the tools to connect biology to real-life situations, whether this be choices to make affecting personal health, applications to other fields of study or policy decisions affecting us all.

## III. Course Format

(\* In detail)

### Specific class format

#### Within each week<sup>#</sup>

- The **First class** will be the lecture of the assigned chapter
- The **Second class** will be finishing the chapter as needed, review and discussion of the related current news (including news articles, TED talks and YouTube videos).

**# For the first two weeks of class**, the basic background of biological science in the "Life" area will be covered in lecture format without reviews and newspaper articles. Consider it as Boot camp for background science learning.

#### Within each class

- You must login to the Sogang Inter-Active Learning System "ial" (ial.sogang.ac.kr) using your student ID and password
- Using the "ial" system, you will answer questions from a previous class; the purpose of this in-class quiz is to encourage you to review the class material every time
- Performance on these quizzes will count towards the class participation grade (5 %)
- It is not competitive test to check your ability or knowledge. The main goal of this in-class test is to urge you to review after each class.

Login

### General guideline for the class.

- **Read** through the assigned chapter before class
- **Peruse** the required reading (news articles or video files) before class.
- **Print** the PowerPoint slides from Cyber-Campus and bring them with you to class.
- **Use** the slide print-outs as a template for taking notes (but not as a substitute).
- **Attend** the lecture & discussion lasting one hour and 15 minutes twice per week.
- **English** is the main language in the class for lecture and discussion.
- **Participate** in-class discussion. It contributes 15% of your grade in this class.
- **Review** your lecture notes in conjunction with the PowerPoint slides.
- **Review** new vocabulary. Practice the definitions and say them out loud until they come naturally.
- **Skip** temporarily when you bump into too technically challenging materials. Don't get bogged down. Return to it later.
- **Try to understand** the big picture of the subjects.
- **Come** to my office hours for extra help or other intriguing discussions.
- ***I appreciate all and any suggestions and comments!***
- **Attendance Policy:** I will strictly follow the FA system of Sogang University. No negotiation.

### IV. Course Requirements and Grading Criteria

Items	Percentage	Due Date
<b>Midterm Exam</b>	36 %	Week of April 20 - 24
<b>Final Exam</b>	37 %	Week of June 15 - 19
<b>Assignment 1:</b> Introduction of yourself	2 %	March 11
<b>Assignment 2:</b> Newspaper article analysis	4 %	April 10
<b>Assignment 3:</b> Midterm exam questions	2 %	April 17
<b>Assignment 4:</b> Newspaper article analysis	4 %	June 05
<b>Assignment 5:</b> Final exam questions	2 %	June 12
<b>Class Participation:</b> Absence & Attitude	2 %	<i>Every class</i>
<b>Class Participation:</b> Discussion & Questions	4 %	<i>Every class</i>
<b>Review Tests:</b> in-class quizzes ( <b>ial</b> )	7 %	<i>Every class</i>

#### Mid-Term Exam

Assigned date during the week of midterm exam

35 % of total grade. At the end of the 8<sup>th</sup> week of this semester.

Attendance is mandatory. No alternative exam will be given. Please plan ahead.

#### Final Exam

Assigned date during the week of final exam

35% of total grade. **Not a cumulative** examination, including only the chapters after the Midterm exam.

Attendance is mandatory. No alternative exam will be given. Please plan ahead.

## Assignments

Homework. 14% of total grade.

There will be **five short homework assignments** over the course.

All assignments will be turned in using Cyber-Campus, late assignments will not be accepted. The homework should be written preferably in English in Word file format (.docx).

If you write in Korean, there will be 10% deduction of the grade.

### **#1 (2%)**

- Introduction of yourself
- Why do you want to take this course? What are your goals from this course?
- How might you apply the knowledge from this course to your field of study?

### **#2 and #4 (4% each)**

- Short summary and analysis of a newspaper article relevant to the class work
- No more than 1 page in length.
- Must include an analysis of the article using knowledge learned from the class

### **#3 and #5 (2% each)**

- Write 5 multiple-choice questions and 1 short-answer question for midterm or final exams
- These will be graded primarily for completeness, but
- If your questions are good, I will post them in the real exam.

## Class Participation & Review Tests

***How much you learn is proportional to the effort you put into the class.***

**Total 11 points:**

**2 points** will be given for your overall attitude and attendance for the class

**4 points** will be given for your participation to the class discussion

**7 points** will be given for your in-class interactive quizzes using the “ial” system

**Class discussion (4pts)** will be graded by the impact of your inputs, divided by time. Please *be succinct!*

$$\text{Participation Grade} = \text{Impact Value} / \text{Time}$$

- The clarity, quality, originality, and relevance of your comments and questions
- Your ability to help to keep the class discussions lively, focused, and constructive

**In-Class review test (7 pts)** will be given if you correct at least 70% of the review questions.

- All answers will be collected and scored through Sogang **IAL** system (see section III above)
- **6 pts** = 61+%, **5** = 51+%, **4** = 41+%, **3** = 31+%, **2** = 21+%, **1** = 11+%, **0 pts** = 10% & below

## **V. Materials and References**

### **Required Text Book**

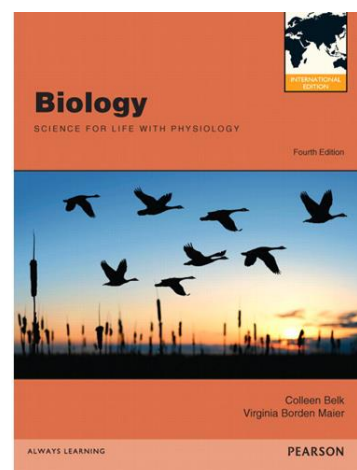
**Biology: Science for Life with Physiology** (Fourth Edition)

By Colleen Belk and Virginia Borden Maier. PEARSON 2013

***Only selected chapters.***

### **Supplementary Materials**

Several movies and extra reading materials will be prepared and posted in Cyber-Campus. My preferred sources are TED talk, New York Times, and National Geographic.



## VI. Course Policies

### **Academic Integrity**

Academic integrity is the foundation of any university. All members of the class are expected to strictly follow the Sogang Policy on academic integrity.

### **Academic Honesty**

Integrity of scholarship is essential for an academic community. For students, this means that all academic work will be done by the individual to whom it is assigned, without unauthorized aid of any kind. Specifically, no student shall

- Knowingly procure, provide, or accept any unauthorized material that contains questions or answers to any examination or assignment to be given at a subsequent time.
- Complete, in part or in total, any examination or assignment for another person.
- Knowingly allow any examination or assignment to be completed, in part or in whole, for himself or herself by another person.
- Plagiarize or copy the work of another person and submit it as his or her own work.
- Employ aids excluded by the instructor in undertaking course work or in completing any exam or assignment.
- Alter graded class assignments or examinations and then resubmit them for re-grading.
- Submit substantially the same material in more than one course without prior authorization
- Any violation of Sogang Policy on Academic Integrity will be reported to the Academic Affair.
- If you do not understand these expectations and authorizations, please speak with the professor as soon as possible.

### **Assignment Submission**

- All assignments should be submitted to the Cyber-Campus. All assignments are due by 11:59 pm on the due date.
- It is the student's responsibility to submit assignments on time. Please familiarize yourself with the Cyber-Campus submission procedure.
- Please submit your report in Word file format, not Hangul or PDF.

### **Email Communication**

All emails to professors should include your first and last name in the body of the email, and put the class number in the subject line. Do not rely on email as a sure and immediate form of communication.

**No Audit policy:** This class requires active participation, so will not accept audit requests.

### **Laptop or Cell phone usage in class**

Irrelevant usage of laptop and cell phone is strictly banned in this class.

It is well known that surfing or texting during class is distracting to those who sit around you. Please turn your laptop and cell phone off during class and respect your professor and classmates.

I acknowledge that some of the students take lecture notes using their laptops, but please ask my permission for the usage of the computer.

## VII. Special Accommodations

Students requesting accommodations and services due to a disability for this course should contact me as soon as possible. The students also need to contact SCSD (Sogang Center for Students with Disabilities) and/or OIA (Office of International Affairs) to plan ahead for the provision of reasonable accommodations. The relevant contact information is;

**SCSD** (장애학생 지원센터 02-705-7800, BW205) or **OIA** (02-705-8118, BW206)

## VII. Course Schedule

(\* Subject to change)

This is lecture-based class with power-point slides with many pictures, movies, and lots of discussion

<b>Wk 01</b>	Area	<b>Introduction and LIFE</b>
	Topics	Background knowledge and concepts of biological sciences
	Class 1 (T, 03/03)	Syllabus and Introduction
	Class 2 (TH, 03/05)	<b>Chapter 1 &amp; 2: Scientific Methods, Biochemistry of water &amp; Carbon</b>
	Assignment	Read the chapter, print hand-outs, and prepare for the class discussion

<b>Wk 02</b>	Area	<b>LIFE</b>
	Topics	Cell, Nutrients, Membrane, Enzyme, Body Fats,
	Class 3 (T, 03/10)	<b>Chapter 3: Nutrients and Membrane Transport</b>
	Class 4 (TH, 03/12)	<b>Chapter 4: Enzymes, Metabolism, &amp; Cellular Respiration</b>
	Assignment	Read the chapter, print hand-outs, and prepare for the class discussion <b>HW#1 Due (03/11):</b> Introduction, Purpose, & Application for your study

<b>Wk 03</b>	Area	<b>Cell</b>
	Topics	DNA and Cancer
	Class 5 (T, 03/17)	<b>Chapter 6: DNA Synthesis, Mitosis, and Meiosis</b>
	Class 6 (Th, 03/19)	Finish up Chapter 6, Review, and Connection to Real-Life (newspaper article)
	Assignment	Read the chapter & article, print hand-outs, and prepare for the discussion

<b>Wk 04</b>	Area	<b>Cell</b>
	Topics	Inheritance and Genetics
	Class 7 (T, 03/24)	<b>Chapter 7: Mendelian &amp; Quantitative Genetics</b>
	Class 8 (Th, 03/26)	Finish up Chapter 7, Review, and Connection to Real-Life (newspaper article)
	Assignment	Read the chapter & article, print hand-outs, and prepare for the discussion

<b>Wk 05</b>	Area	<b>Cell</b>
	Topics	Inheritance and DNA fingerprinting
	Class 9 (T, 03/31)	<b>Chapter 8: Patterns of Inheritance &amp; DNA fingerprinting</b>
	<del>Class 11 (Th, 04/02)</del>	<b>** Easter Break **</b>
	Assignment	Read the chapter & article, print hand-outs, and prepare for the discussion

<b>Wk 06</b>	Area	<b>Cell</b>
	Topics	Inheritance and DNA fingerprinting
	Class 10 (T, 04/07)	Finish up Chapter 8, Review, and Connection to Real-Life (newspaper article)
	Class 11 (Th, 04/09)	<b>Chapter 9: Gene Expression, Mutation, &amp; Cloning</b>
	Assignment	Read the chapter & article, print hand-outs, and prepare for the discussion <b>HW#2 Due (04/10):</b> Analysis of a newspaper article relevant to the class work

<b>Wk 07</b>	Area	<b>Cell</b>
	Topics	Biotechnology
	Class 12 (T, 04/14)	Finish up Chapter 9, Review, and Connection to Real-Life (newspaper article)
	Class 13 (Th, 04/16)	<b>** Make-Ups, Supplementary, or Review for midterm **</b>
	Assignment	Read the chapter & article, print hand-outs, and prepare for the discussion <b>HW#3 Due (04/17):</b> 5 multiple-choice & 1 short-answer question for midterm

### Week 08: Midterm Exam

<b>Wk 09</b>	Area	<b>Human</b>
	Topics	<b>Organ Donation:</b> Tissues, Organs, Organ Systems
	Class 14 (T, 04/28)	<b>Midterm Review &amp; Chapter 17:</b> Tissues, Organs, & Organ Systems
	Class 15 (Th, 04/30)	<b>Chapter 17:</b> Tissues, Organs, & Organ Systems, No Paper article.
	Assignment	Read the chapter & article, print hand-outs, and prepare for the discussion

<b>Wk 10</b>	Area	<b>Human</b>
	Topics	<b>No Smoking:</b> Lung, Heart, Blood, and Kidney
	<del>Class 16 (T, 05/05)</del>	<b>** Children's Day **</b>
	Class 17 (Th, 05/07)	<b>Chapter 18:</b> Respiratory, Cardiovascular, and Urinary Systems
	Assignment	Read the chapter & article, print hand-outs, and prepare for the discussion

<b>Wk 11</b>	Area	<b>Human</b>
	Topics	<b>Disease:</b> Bacteria, Virus, Vaccine, Antibody, Antigens, T-Cells, B-Cells
	Class 18 (T, 05/12)	Finish up Chapter 18, Review, and Connection to Real-Life (Newspaper article)
	Class 19 (Th, 05/14)	<b>Chapter 19:</b> Immune System and Pathogens
	Assignment	Read the chapter & article, print hand-outs, and prepare for the discussion

<b>Wk 12</b>	Area	<b>Human</b>
	Topics	<b>Sex:</b> SperT, Egg, Menstruation, Pregnancy, Development
	Class 20 (T, 05/19)	Finish up Chapter 19, Review, and Connection to Real-Life (Newspaper article)
	Class 21 (Th, 05/21)	<b>Chapter 21:</b> Reproduction and Development
	Assignment	Read the chapter & article, print hand-outs, and prepare for the discussion

<b>Wk 13</b>	Area	<b>Human</b>
	Topics	<b>Brain:</b> Neurons, Glia, Brains, Spinal Cord, Alzheimer's, Depression
	Class 22 (T, 05/26)	Finish up Chapter 21, Review, and Connection to Real-Life (Newspaper article)
	Class 23 (Th, 05/28)	<b>Chapter 22:</b> Brain Structure and Function
	Assignment	Read the chapter & article, print hand-outs, and prepare for the discussion

<b>Wk 14</b>	Area	<b>Environment</b>
	Topics	<b>Evolution:</b>
	Class 24 (T, 06/02)	Finish up Chapter 22, Review, and Connection to Real-Life (Newspaper article)
	Class 25 (Th, 06/04)	<b>Chapter 10 &amp; 11:</b> The Evidence of evolution & Natural Selection
	Assignment	Read the chapter & article, print hand-outs, and prepare for the discussion <b>HW#4 Due (06/05):</b> Analysis of a newspaper article relevant to the class work

<b>Wk 15</b>	Area	<b>Environment</b>
	Topics	<b>Ecology:</b>
	Class 26 (T, 06/09)	<b>Chapter 14 &amp; 15:</b> Population & Conservation
	Class 27 (Th, 06/11)	<b>** Make-Ups, Supplementary, or Review for midterm **</b>
	Assignment	Read the chapter & article, print hand-outs, and prepare for the discussion <b>HW#5 Due (12/12):</b> 5 multiple-choice & 1 short-answer question for midterm

## Week 16: Final Exam

## Quick Glance of the Semester Schedule

Sun	Mon	Tue	Wed	Thr	Fri	Sat
Wk #1 Life	03/02	3 Intro	4	5 Ch 1-2	6	7
Wk #2 Life	9	10 Ch3	11 <i>HW Due</i>	12 Ch4	13	14
Wk #3 Cell	16	17 Ch6a	18	19 Ch6b	20	21
Wk #4 Cell	23	24 Ch7a	25	26 Ch7b	27 Last Cancel	28
Wk #5 Cell	30	31 Ch8a	04/01	2 <i>Easter</i>	3	4
Wk #6 Cell	6	7 Ch8b	8	9 <i>HW Due</i> Ch9a	10	11
Wk #7 Cell	13	14 Ch9b	15	16 <i>HW Due</i> Makeups/Review	17	18
<b>Midterm</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	25
Wk #9 Human	27	28 Mid Rv & Ch17a	29	30 Ch17b	05/01	2
Wk #10 Human	4	5 <i>Children</i>	6	7 Ch18a	8	9
Wk #11 Human	11	12 Ch18b	13	14 Ch19a	15 <i>fest</i>	16
Wk #12 Human	18	19 Ch19b	20	21 Ch21a	22	23
Wk #13 Human	25 <i>Buddha</i>	26 Ch21b	27	28 Ch22a	29	30
Wk #14 Environm	06/01	2 Ch22b	3	4 <i>HW Due</i> Ch10-11	5	6 memo
Wk #15 Environm	8	9 Ch14-15	10	11 <i>HW Due</i> Makeups/Review	12	13
<b>Final</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	20



## Testimonials from last class of 2014-I & II

*I asked all A+ students from midterm exam, these are some of the helpful tips from them.*

1. You name and major
2. Have you taken any "Biology" class before? If yes, how many years and when was it?
3. What is your preferred language?
4. How many hours do you usually invest for this class?
5. General tip for someone who would like to take this class.

### Student 1

1. KYP & Political Science
2. Yes and it is a make-up class
3. English
4. A few hours each week
5. General tip: When I don't understand something, I search on Google and YouTube for more information

### Student #2

1. YJL & English Literature and American Culture
2. Yes and when I was a first semester in high school
3. Korean, but English major
4. On average I spend about an hour or two everyday
5. My advice would be to concentrate in class and take notes. Just seeing the ppt file may not be so easy to understand the class material so it is important to listen to the professor's explanations for better understanding.

### Student #3

1. DHC & English and Philosophy
2. Yes and Neurobiology before Army service
3. English as well as Korean
4. 6~9 hours a week depending on the content
5. We learn who we are "spiritually" by studying Philosophy, Literature, History, Psychology, Sociology, and Theology. On the other hand, we learn who we are "materially" by studying Biology. You, sitting there, may have the following thoughts on your minds: "Another required course...Nothing to do with my life" or "Is this going to help me get a job in any way?". Well, this course may not help you get a job; yet, it may give you an idea about your life - how you, as an organism, function. Enjoy the course - the grades will follow. Enjoy learning about yourselves - you are the most perfect machine of all machines. Think of this course as your embarking on a new journey - a journey to within, or a stroll along a road which has been paved for you by thousands of intellects who dedicated their entire lives on what you are about to study. If you want to get the best out of this course - including the grades - don't force yourself to study; rather, try to enjoy what you are studying. Certainly, Biology is, I, whose major is in English Literature, guarantee you, incredible interesting.

### Student #4

1. HSJ, English Literature major 영문학과
2. 고등학교 2학년, 과학시간에 1학기 동안 집중이수제로 잠깐 생물을 배운 적이 있습니다.
3. 제 first language는 한국어입니다. 영어보다 한국어 읽는 것이 더 편하긴 하지만, 해외에서 생활한 경험이 있기에 영어를 어렵게 느끼는 편은 아니었습니다.
4. 평소처럼 중간고사 2주전부터 몰아서 공부하려고 했는데, 교수님께서 IAL 퀴즈를 매 수업시간마다 내주셔서 매 퀴즈마다 당황하거나 프린트물을 뒤적거리는 것을 막기 위해 학기 중반부터 잠깐이나마 매 수업 전에 배운 내용을 복습해 갔습니다. 길게 투자한 건

아니었고 지하철에서나 시간 날 때 한 10-20분 정도 읽고 갔습니다. 확실히 조금이나마 복습했던 단원들은 중간고사 공부할 때 훨씬 수월하고 시간도 덜 걸렸습니다. 본격적으로 공부했을 때는 정확히 몇 시간을 투자했는지는 기억이 안 나지만, 모든 단원을 3회독을 했습니다. 아마 한 단원당 3-4시간은 넘게 투자한 듯 합니다.....

5. 저는 일단 고등학교 2학년 때 다른 어떤 과학 과목보다도 생물에 훨씬 흥미를 느꼈었기 때문에 일부러 생명과환경을 선택했습니다. 다른 과학 분야보다 아무래도 우리 삶과 직접적으로 연관되는 (ex. nutrients, 세포, 대사, 질병들, 유전 등등) 흥미로운 주제들을 많이 다루니까 더 공부가 수월했던 것 같아요. 수업시간에 열심히 듣고 흥미를 가지려고 노력해보시는 걸 추천해요... 다 잊어버려서 거의 처음 배우는 것과 같았지만 수업시간에 열심히 들으니 그렇게 어렵지는 않았어요. 교양 과목이지만 얻어갈 게 많아요 특히 교수님께서 현실과 밀접한 관련이 많은 부분 중점적으로 다뤄주시고(ex. 에볼라 바이러스) 그런 이슈거리에 관한 newspaper article도 많이 접하게 해주시니.. 본인이 열심히 기사도 읽어가고 하면 영어실력에도 도움이 되고, 상식도 느는 것 같아요. 공부에 관해서는, 그냥 열심히 시간 투자 하면 정직하게 성적이 나오는 것 같아요. 교수님이 가르쳐주신 부분에서 모두 문제들이 출제되니까요.. 그리고 ~~궁금한 거 있으면 공부할 때 한꺼번에 적어놨다가 교수님께 메일을 드리면 정말 친절하게 답변해주세요 항상 질문하시길!~~ 생명과 환경이 필수교양 중 하나인 이유가 있겠죠? 수업 후 그레이 아나토미를 볼 때 훨씬 이해가 잘 되는 것을 제외하고도, 정말 얻어갈 수 있는 게 많은데, 그 중 얼마가 본인의 몫이 되는지는 평소에 얼마나 흥미롭게 듣고 공부하는지에 달렸다고 생각합니다.