South Forsyth High School
International Baccalaureate HL Biology
A. Piszczek

TWO-YEAR COURSE OUTLINE

Scope of the Course: The study of biology should lead students to appreciate the interconnectedness of life within the biosphere. With a focus on understanding the nature of science, IB biology will allow you to develop a level of scientific literacy that will better prepare you to act on issues of local and global concern, with a full understanding of the scientific point of view. The international baccalaureate program allows for the integration of understanding, applying, and using skills that are integral to the field of science.

Course Objectives

Students should develop abilities to:

- Appreciate scientific study and creativity within a global context through stimulating and challenging opportunities
- Acquire a body knowledge, methods and techniques that characterize science and technology
- Develop an ability to analyze, evaluate and synthesize scientific information
- Develop a critical awareness of the need for, and the value of, effective collaboration and communication during scientific activities
- Develop experimental and investigative scientific skills including the use of current technologies
- Develop and apply 21st century communication skill in the study of science
- Become critically aware as a global citizens, of the ethical implication of using science and technology
- Develop an understanding of the relationships between scientific disciplines and their influence on other areas of knowledge

The IB Learner profile

The IB program aims to develop internationally minded people who work to create a better and more peaceful world. The aim of the program is to develop this person through the tem learner attributes, Inquiry, knowledge, thinking, communicating, being open minded, principled, caring, a risk taker, balanced and reflective.

Theory Of Knowledge (TOK)

Theory of knowledge asks students to reflect on what we know and what we claim to know. In biology theory of knowledge uses societal issues, medicinal practices, animal experimentation, and a number of other pertinent topics to ensure that students can maintain an open mind in order to discuss and create a fully informed opinion.

Grades

IB Biology HL is a two-year course and students will be expected to sit for several cumulative exams for all material covered in their studies up to the time when each assessment is administered. These examinations usually are administered at the end or beginning of each semester. The final exam at the end of year 1 is not eligible for exemption. **This is a two-year cumulative course that builds on pervious content, therefore all students must take the final at the end of year 1.**

South Forsyth

Makeup Work: *Make up work is defined as work assigned during a student's absence, not work assigned prior to an absence. The student has five (5) school days upon returning to school to complete make-up work. The teacher has the discretion to grant a longer period to make up work, if there are extenuating circumstances.*

Grading Calculations:
Non-EOC Course Average = 50% (1st Sem. Course Work) + 50% (2nd Sem. Course Work)
1st and 2nd Semester Course Work = 75% Summative + 25% Formative
Concept of formative assessment: http://pareonline.net/getvn.asp?v=8&n=9
Grading Policy:
A = 90 – 100
B = 80 – 89
C = 70 – 79
Failing = Below 70

**Formative Assessments include, but are not limited to homework, class work, practice tests, rough drafts, and sections of projects/ research papers/presentations.*

**Summative Assessments include, but are not limited to unit tests, final projects, final essays, final research papers, and final presentations.*

IB grading scale
The internal assessment, an experiment that is designed and implemented by the student counts as 20% of the IB grade, the external assessment, consisting of three different exams, given at the end of the senior year counts as 80% of the IB awarded grade.

The group 4 project
The group 4 project is an IB required collective project between all science classes. The aim of the project is "To encourage an understanding of the relationships between scientific disciplines and the overarching nature of the scientific method." ALL students are required to complete the group 4 project once in order to earn their IB diploma. Additional information will be provided as it is available.

Late Work Policy
Work is due on the given date and time. Late assignments are unacceptable. All Late assignments will accrue a 10-point penalty per day.

Attendance and Assignments
Owing to the nature of the content covered in IB Biology HL, it is essential that students come to class on a regular basis. Content subtleties usually cannot be conveyed by studying alone, and skills essential to success in the course, and laboratory work must be performed. Missing a class deprives students of much more than simply participating in a laboratory, or activity.

It is the student's responsibility to make up missed assignments: See the SFHS student agenda for policies. Assignments are posted on itslearning. Failure to make up work within five days after an absence will result in a zero grade. Students must be ready to submit work, make presentations, or take quizzes/tests that are announced ahead of time on the day of return. Students are expected to make arrangements with teachers to make up tests or quizzes before or after school as necessary.

Academic Honesty
Academic dishonesty will not be tolerated. Examples of cheating include copying another student's work on a quiz, exchanging answers for a homework assignment, or using information directly from a website without properly citing the source—whether in a written paper or presentation. Students who falsify content will receive zero credit for that assignment. A parent conference may also be scheduled. The consequences for acting less than honorably in IB are particularly serious: your diploma can be revoked. Additionally, your IB teachers often will not write university recommendations or sign to release your IB assessments for college credit or the IB diploma.

Honor Code Statement: ***"This work is completely my own, and is neither the work of someone else, nor an unacknowledged, outside source. I will not share my work, or the contents of any assessment, with others."***

Expectations
Students are expected to treat themselves, their classmates, teachers, staff, and SFHS in general with respect.

Each student is expected to be fully prepared when class begins.

Each student is expected to participate in all activities and laboratories, all safety guidelines will be adhered to at all times.

Students are expected to think critically, and analyze information scientifically.

Assistance
Teacher assistance is available nearly every day before school. If you are planning to come by for extra help to ask questions, please inform me that you are coming so that I can be sure to be present. Further assistance is available via email communication. Students are strongly encouraged to avail themselves of their peers through study groups. Meaningful learning often comes from small gatherings where students can share ideas.

Reminders
- Each student is required to bring required materials to class *every day*.
- Work is due at the beginning of the class period.
- Class participation grades reflect the degree to which the student is engaged in activities. Answering questions only partially fulfills this grade.
- Each student is ultimately responsible for his or her success.

Required Materials
- Three-ring binder dedicated only to this course

TWO-YEAR COURSE OF STUDY

Core and additional higher level objectives are covered in conjunction with each other over the two year course.

Unit One
Molecular biology- the study of metabolism, water and macromolecules. Practical 1, enzyme activity.

Unit Two
Cell biology- the study of the ultra structure of cell, membrane structure and transport, and the origin of cells. Practical 2, calculation of magnification and Practical 3, estimation of osmolarity in tissues.

Unit three
Cell division- mitosis and meiosis

Unit Four
Metabolism, Cellular respiration and photosynthesis. Practical 4, chromatography of photosynthetic pigments.

Unit Five
Plant biology- transport of xylem and phloem in plants, plant growth and reproduction. Practical 7, measuring transpiration rates using photometers.

Internal assessment-factors affecting plant growth or germination

Unit Six
DNA-structure, transcription, translation, and gene expression.

Unit seven
Genetics- genes, chromosomes, and inheritance patterns.

Unit eight
Genetic modification and biotechnology.

Unit Nine
Human physiology- digestion and absorption, the blood system, defense against infectious disease, gas exchange and antibody production and vaccination. Practical 6 monitoring ventilation rates at rest and after mild or vigorous exercise.

Unit Ten
Human Physiology- Neurons and systems, hormones, homeostasis and reproduction, sexual reproduction, movement, the kidney and osmoregulation.

Internal Assessment-Physiology of the circulatory system

Unit Eleven
Evolution and biodiversity- gene pools and speciation, evidence for evolution, natural selection, classification of biodiversity and cladistics.

The next two units include information from our option Ecology.

Unit Twelve
Ecology-species, communities and ecosystems, carbon recycling, as well as the nitrogen and phosphorus cycles. Practical 5- attempting to create a sealed mesocosm.

Unit Thirteen
Ecology- Impacts of humans on ecosystems, conservation of biodiversity, climate change, population ecology.