



# Human Biology | 2017-2018 Assessment Report

1. Please give a brief overview of the assessment data you collected this year.

Two outcomes (12 and 13) were assessed during the 2017-2018 academic year. Outcome 12 was evaluated in Reproductive Biology and Anatomy and Physiology.

Outcome 12. Demonstrate an appreciation for the ethical and social dimensions of science, as well as weaknesses/limitations and assumptions of science as practiced in the United States.

## HUM BIOL 318 - Reproductive Biology

Reproductive Biology provides an in-depth study of the biological processes and social issues related to human reproduction. Topics include: gamete production, fertilization, fetal development, pregnancy, birth, lactation, fertility, and population growth. Primary literature and clinical scenarios are used to illustrate real world application of concepts covered in the course.

Evaluating the students' understanding of the ethical and social dimensions of reproduction occurs throughout the entire semester and was assessed through both qualitative (in class discussions and course feedback) and quantitative measures (exam questions). As with many ethical topics there is not always a clear right or wrong answer so I prefer to use reading assignments and classroom discussions to expose students to new ideas or opinions that may be different from their own. Below are samples of how I assessed this learning outcome:

## Qualitative Assessment

### Reading Assignments/Classroom Discussions

1. Gender
  - a. Literature - commentary written by a transgendered scientist comparing how he was treated as a female vs. male scientist.
  - b. Discussion - students discussed their own experiences as women in science.
  - c. Clinical scenario - How should an OB/GYN advise parents of a newborn with ambiguous genitalia?
2. Birth Control
  - a. Literature - clinical trial of male birth control.
  - b. Discussion - students discussed why they thought this trial was canceled and different societal roadblocks to the development of male birth control.
3. IVF
  - a. Literature - clinical trial comparing health outcomes of offspring from natural vs. IVF conception.

- b. Discussion - students discussed the biological reasons that IVF offspring may be more susceptible to health problems (i.e.: environmental factors, epigenetics, “unfit” egg or sperm, etc.)
4. Genetic Testing
- a. Discussion - students discussed preimplantation genetic testing and when they felt it would or would not be appropriate to use.
5. Abortion
- a. Literature - basic research in a mouse model looking at the effects of repeated abortion using RU-486.
  - b. Literature - commentary on when/if a fetus is able to feel pain
  - c. Discussion - students discussed varied topics in abortion ranging for reasons for abortion, the politics of abortion, and biological aspects in terms of different abortion techniques and fetal pain.

#### Student Course Feedback

1. “This course was very applicable to life and good ethical conversations occurred.”
2. “My favorite part about this course was learning about pregnancy and social issues.”
3. “My favorite part about this course were the discussions on debated topics such as birth control and abortion, as it gives an unbiased medical foundational understanding of these things.”
4. “I think your class was the only Human Biology course that I've taken where we discussed ethical and social dimensions of biology.”

#### Quantitative Assessment

##### Sample Exam Questions:

1. Explain the difference between sex and gender. Support your explanation with examples of sex characteristics and gender attributes. (6 pts)
  - a. Average score - 5/6 or 83.3% (N=16)
2. Hormonal birth control methods are common for women and may soon be available for men. For **both** male and female forms, describe what hormones are given, how they disrupt normal hormone signaling, and what reproductive function they block. (6 pts)
  - a. Average score - 4.75/6 or 79.2% (N=16)
3. Describe **three** different types of enhanced IVF and explain under what circumstances they would be used instead of conventional IVF. (4 pts)
  - a. Average score - 3.5/4 or 87.5% (N=16)
4. A couple visits the clinic due to problems with infertility. Tests reveal the man has normal sperm count and morphology. Identify **two** possible causes of infertility in this couple. Describe tests that could be run to determine the cause and identify possible treatment options. (6 pts)
  - a. Average score - 5/6 or 83.3% (N=16)

5. A couple would like to have children but know they are both heterozygous carriers for a recessive disorder that leads to death shortly after birth. Identify a prenatal diagnostic technique they could use to determine the genotype of the offspring during the first trimester. Describe **two** different abortion methods that could be used if the genetic tests reveal a homozygous recessive conceptus. (5 pts)
- Average score - 4.5/5 or 90% (N=16)

### Quantitative assessment as evaluated in Anatomy and Physiology (HUB 204)

Question (see below) on the factors used to categorize people by sex. 44 of 52 students answered correctly.

Which of the following is not one of the markers used in identifying a person's biological sex?

- chromosomes
- sexual orientation
- hormone levels
- internal genitalia
- gonads

Question on anomalous sexual states. 32 of 52 students answered correctly.

An individual who has a Y chromosome but no testosterone receptors will NOT have...

- high levels of testosterone like a typical male.
- testes.
- secondary sex features such as a deep voice and facial hair.
- a penis.
- C and D

### Outcome 13: Demonstrate and understanding of cultural competence/sensitivity as evaluated in the fall offering of NUT SCI 421 (Community Nutrition) course.

Over the assessment period, 75% of students will earn a B or better on the assignment to educate community members who are of a diverse cultural background.

This semester **24/24 (100%)** of students met this goal.

2. How will you use what you've learned from the data that was collected?

Performance in individual courses suggests that the vast majority of students are doing very well in terms of this outcome. To continue this level of success, Human Biology plans to continue to build on the knowledge and skills of the students. To do so, professional development opportunities for faculty/staff and retaining/hiring quality staff/faculty are critical to continue and build upon the success of the program outlined in this report. Human Biology is an overwhelmed program with 12 faculty to support approximately 500 majors. Additional faculty lines are imperative at minimum to support an appropriate level of advising and professional development for students and faculty, respectively, to continue.