

**BELMONT HIGH SCHOOL**  
**COURSE PROPOSAL FORM**

**Course Title:** Science Ethics and Controversies

**Credits:** 5

**Department:** Science

**Course Description:**

What are stem cells? When is it okay to perform experiments on humans? What's global warming, and is it our responsibility to stop it? This course will focus on the current issues and dilemmas that scientists face, allowing students to apply what they've learned in core science classes. Through discussions, debates, research, projects, and writing, students will critically examine the science that affects our daily lives and decide their moral and ethical responsibilities as a citizen. Participation and independent motivation will be crucial.

**Rationale:**

In core science classes, teachers feel obligated to rush through state curriculum standards - a feat which is often not possible in the available time. Accordingly, it is difficult to spend time delving into current events, ethical issues, and the philosophy behind science. I thus propose the creation of a class called Science Ethics and Controversies. The course will allow seniors to apply material they've learned in these core sciences to critically evaluate real world science and become educated consumers, voters, and citizens.

The objective of this course is not only to help students connect with relevant topics in science, but to help empower them to be active researchers and critical thinkers when new topics arise in the outside world. The role of the instructor will be to guide students in their efforts to gather and analyze information on science topics. The course will allow for numerous interdisciplinary connections as outlined below. The class could serve as a supplement to science-oriented students, or as a unique way of absorbing the subject for students who are normally more inclined toward social studies or English classes.

**Anticipated Audience:**

This course will be open to 12<sup>th</sup> grade students who have passed physics, chemistry, and biology. It will be a college prep level course.

**Staffing/Budget Implications:** None.

**Possible Topics:**

- Performance enhancing drugs / blood-doping
- Conservation of endangered species protection/re-introduction, population control
- Human experimentation (Tuskegee, Eugenics, etc.)
- Cloning, genetically-modified organisms (GMO)
- Human population control
- Scientific literacy - evaluating media claims
- Distribution of wealth & health
- Medical ethics - health care, end of life issues
- Vaccines
- Additives to water (Fluoride, antibiotics, etc.)
- Pharmaceuticals - FDA approval process
- Nutrition - personal responsibility vs. restaurants providing dangerous food
- Media portrayal of health issues (schizophrenia in Beautiful Mind vs. reality)
- Nuclear power – is it worth the risks?
- Alternative energy pros & cons
- Stem cell research

**Methods:**

- Research projects (individual, group, and class-wide)
- Case studies
- Role play activities
- Discussions
- Mini-lessons on science background
- Reflection papers, persuasive essays, position papers
- Group and individual presentations
- Debates
- Letters to legislators
- Online discussion posts, blogging, website creation
- Student agency to decide which topics we pursue
- Experiments (Clay Pit Pond)

**Interdisciplinary Connections:**

- History
- Psychology
- Philosophy
- Statistics
- Literature
- Film
- Journalism
- Biology
- Chemistry
- Physics
- Environmental Science
- Sociology
- Advocacy/Policy
- Public Health

Director: Deborah Darlington (electronic signature)

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