

College: McAnulty College and Graduate School of Liberal Arts. Revised, 11/10/19.
Syllabus: HCE-653/753, Genetics & Ethics (& Digital/Bio-Technology), Spring 2020.
Course: Thursday 3:05-5:45pm, Fisher Hall 300 Suite, Fisher Hall 715.
Office Hours: Indicated on Blackboard for the course.
Fisher 300 [e-mail: magillg@duq.edu]; Tel. (412) 396-1596

Course Instructor:

Gerard Magill, Ph.D.

Vernon F. Gallagher Chair for the Integration of Science,
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COURSE OBJECTIVES.

a) **Course Description.**

This course is presented in seminar format that dedicates most of class time to conference-style presentation and discussion of the assigned readings as well as to the development and presentation of course research essays. The goal is to provide a systematic overview of major topics in the field to inspire excellence in student conference style presentations and essay research writing.

b) **Specific Competencies to be expected.**

Upon completion of the course students should master the following major competences, as should be demonstrated both in class participation and in the course essay:

- a. an understanding of major ethical issues that address recent developments in the science of the human genome & digital/bio-technology, integrating pluralistic/philosophical and secular/religious perspectives;
- b. the skill of conference-style presentations of complex ethical and scientific debates on selected topics in the field;
- c. a capacity for argument formation, literature integration, and critical analysis when writing a research essay in the field.

c) **General Program Learning Outcomes.**

a. **Fundamental Knowledge.**

Students can understand and analyze the major ethical and scientific debates around the human genome & digital/bio-technology.

b. **Multi-disciplinary Study via Conference-Style Presentations.**

Students can critically relate discourse on genetics, digital bio-technology, ethics with multi-disciplinary fields in health care as a diverse and global enterprise (science, empirical research, law, medicine, philosophy, religion, etc.) via conference-style presentations.

c. **Scholarship.**

Students can write scholarly research essays, teach and communicate effectively, and present academic papers that:

- present cogent argument(s),
 - engage scholarly literature, and
 - demonstrate critical thinking and analysis.
- d. **Professionalism.**
Students can integrate academic learning with experiential learning by applying discourse on genetics, digital/bio-technology and ethics to practical and professional issues in health care.
- e. **Ethical Leadership.**
Students can provide ethical leadership in the field of genetics, digital/bio-technology and ethics.
- f. **Co-Curricular Practices for Life-long Learning.**
Students can foster co-curricular practices for life-long learning to personally value and engage discourse on genetics, digital/bio-technology, and ethics in a global context. Practices include: accessing journals and literature for developments in HCE; conference-style presentation skills; networking with colleagues in professional associations; fostering a community of scholars in the HCE program, for example, participating in seminars/colloquia/speaker events, preparing for comprehensive exams, writing doctoral projects.

COURSE STUDENTS.

There are two sets of students in the course: Biomedical Engineering (BME) Master's Program students, and HCE Graduate Students (MA & Doctoral Programs).

- **Weekly Class.** All students must attend every class (on site, or streaming, or media-site video).
- **Class Presentations.** All students must give a conference-style presentation in class on the weekly assigned readings (see schedule of dates and topics).
- **Course Essays.**
 - BME students will submit three 5-page course essays throughout the semester (see schedule).
 - HCE students will submit two 7-page Research Projects and a 25-page Course Research Essay (see schedule).

COURSE STRUCTURE: RESEARCH PROJECTS & COURSE ESSAY.

The Course Structure has 4 general sections. Each week there is an assigned text for the topic. In each class, 2 students separately will present on the assigned book (addressing different chapters in the book): each student presentation will be 30 minutes followed by 15 minutes of class discussion. The use of PowerPoint Slides is required (as the standard for HCE conference-style presentations)

1. **SECTION I: GENETICS.** Weeks 1-4.
Research Essay 1-page title, outline, & brief bibliography.
 Due in week 3 (Jan.21).
BME students: select 3 essay topics. Due in week 3 (Jan.21).

2. **SECTION II: BIOTECHNOLOGY.** Weeks 5-8.
Research Project #1 (7 pages, 20 notes). Part 1 of the course research essay.
 Due in week 5 (Feb. 4).
BME students: essay #1. Due in week 6 (Feb. 11).

3. **SECTION III. EVOLUTION.** Weeks 9-12 (after Spring Break).
Research Project #2 (7 pages, 20 notes). Part 2 of the course research essay.
 Due in week 9 (Mar. 10).
BME students: essay #2. Due in week 10 (Mar. 17).

4. **SECTION IV.** Weeks 13-15.
Student presentations of course essays.
Research Essay (25 pages, 100 notes).
 Due in week 15 (April 23).
BME students: essay #3. Due in week 15 (April 23).

CONFERENCE-STYLE CLASS PRESENTATIONS.

All students will be assigned to give a conference-style presentation in class using the assigned weekly readings. Each week, the other students are **not** required to read the text. Copies of the books are on hold in Gumberg Library and in the HCE Kelly Library.

RESEARCH PROJECTS: HCE GRADUATE STUDENTS.

1. **HCE Research Requirements.**
 - a. The Research Projects will be integrated with the Course Research Essay. HCE students must present the Research Essay topic, outline, and brief bibliography by week 3 (due Jan.21). Ideally, the two Research Projects should be major sections of the Research Essay.
 - b. **Reading Requirements.** Each Research Project must engage at least one book on the selected topic (not necessarily related to course readings), or the equivalent in journal essays.
 - c. **Literature Integration.** Students should include minimally 20 notes in each 7-page research project referring to the selected research texts.
2. **BME Student Essays.** These can be separate 5-page essays, or integrated sections of an overall 15-page essay. Students may focus each essay on class texts or other ethics/science texts.

ALL ESSAYS (BME Students and HCE Students).

Essay Titles.

All students should submit titles for their proposed essay work in week 3 (due Jan.21, see schedule).

Standards for all Essays.

There are three standards adopted for evaluating all Essays, as follows:

- Argument Formation.
- Literature Integration.
- Critical Organization and Analysis.

HCE Students: Course 25-page Research Essay. Technical Requirements.

1. Start research from the beginning of the course.
2. Submit Essay Thesis and 1-page outline with basic bibliography.
3. Progress will be reported in the Seminars.
4. Focus on Research Essay progress during the final Seminar.
5. Submit a copy of the essay by date assigned.
6. The essay length should be **25 pages**, double-spacing.
7. Adopt the format of the *Chicago Manual of Style*, as required by the College for dissertation submissions.
8. Provide a Cover Page (name and essay title) plus an Essay Outline.
9. Present a brief Introduction and Conclusion.
10. Include an Outline of sections and sub-sections after the Title Page.
11. Notes to the references made in the essay.
 - a. Use end notes (as opposed to foot notes at the bottom of the page).
 - b. Do not use notes for narrative explanations – they belong in the text.
 - c. There should be approx. 100 end notes in the essay.
 - d. Avoid repeat references to pages from the same resource.
12. Bibliography. List all the references in alphabetical order by author. Only list items referred to in the essay.
13. Online references are **not** permitted.
14. **ALL BME & HCE Essays.** Divisions and subdivisions. Use major divisions and subdivisions, evenly distributed throughout the essay, for example:

Title: The ethical justification of mandating patient safety programs in health care organizations.

 - I. Introduction.
 - II. The organizational ethics problem of medical error.
 - a. The range of medical problems.
 - b. The range of organizational problems.
 - III. The ethical principles that guide systems for patient safety.
 - a. Principle 1: Protection of Patients from Medical Error.
 - b. Principle 2. Systems to Enhance Quality Improvement.
 - IV. The policy options for stem cell research.
 - a. Federal Oversight: an independent board.
 - b. Joint Commission Accreditation Policy.
 - V. The ethical justification of practical policy options for stem cell research.
 - a. Justifying oversight proposal A.
 - b. Justifying accreditation policy B.
 - VI. Conclusion.
 - VII. End Notes & Bibliography of references cited.

COURSE SCHEDULE, TOPICS, & READINGS. BME essays; HCE RPs/Essay.

Dates	Weeks	Weekly Topics & Discussions	Readings & Student Presentations
Section I			
1/9	Week 1	Introduction: Genetics & Ethics	Book: Farrelly, 2018.
1/16	Week 2	Gene Editing: crispr	Book: Parens, 2019. National Academies, 2017a. Student Presentations: tba.
1/23 *due 1/21 BME due 1/21	Week 3 1p, Essay 1p, 3 topics	Genetics & Stem Cell Research	Books: Devolder, 2015. Student Presentations: tba.
1/30	Week 4	Genetic Testing & Counseling	Book: National Academies, 2017b. (Bartels, Caplan, 2017). Student Presentations: tba.
Section II			
2/6 *due 2/4	Week 5 RP-1	Biotechnology & Digital / Data Science	Book: Agar, 2019. Student Presentations: tba.
2/13 BME #1 essay *due 2/11	Week 6	Biotechnology & Disability	Book: Estreich, 2019. Student Presentations: tba.
2/20	Week 7	Biotechnology & Eugenics	Book: Wilson, 2018. Student Presentations: tba.
2/27	Week 8	Biotechnology & Neuroscience	Book: Hirstein, 2018. Student Presentations: tba.
3/2 – 3/6		Spring Break	
Section III			
3/12 *due 3/10	Week 9 RP-2	Evolution & Reproduction	Book: Klitzman, 2020. Student Presentations: tba.
3/19 BME #2 essay *due 3/17	Week 10	Evolution & Enhancement	Book: Anomaly, 2019. Student Presentations: tba.
3/26	Week 11	Evolution & Transhumanism	Book: Pietrzykowski, 2018. Student Presentations: tba.
4/2	Week 12	Course Research Essays	Student Essay Presentations
Section IV			
4/9	Week 13	Easter Break, No Class	
4/16	Week 14	Course Research Essays	Student Essay Presentations
4/23 *all due 4/23 BME #3 essay	Week 15 Cr Essay	Course Research Essays	Student Essay Presentations

NOTES:

1. It is recommended that students purchase just 1 book: Colin Farrelly. *Genetic Ethics: An Introduction*. Polity, 2018 (\$35). The two books by the National Academies (2017a, 2017b) are in pdf form on Blackboard.
2. Because of the expense of the books, there are two copies of all books available for weekly student presentations (HCE Kelly Library; on hold in the Gumberg Library). Students will present on the assigned readings each week. The roster will be identified in the first class.
3. Students will compile a bibliography for their course research essays. Students will work on their research essays from the start of the course contributing to each week's discussion based on their research focus.

COURSE BIBLIOGRAPHY.

- Nicholas Agar. *How to be Human in the Digital Economy*. MIT Press, 2019.
- Jonathon Anomaly. *Creating Future People. The Ethics of Genetic Enhancement*. Routledge. 2019.
- Dianne M. Bartels, Bonnie S. LeRoy, Arthur L. Caplan, eds. *Genetic Counseling: Ethical Challenges and Consequences*. Routledge, 2017.
- Katrien Devolder. *The Ethics of Embryonic Stem Cell Research*. Oxford University Press, 2015.
- George Estreich. *Fables and the Future. Biotechnology, Disability, and the Stories We Tell Ourselves*. MIT Press, 2019.
- Colin Farrelly. *Genetic Ethics: An Introduction*. Polity, 2018.
- William Hirstein, Katrina L. Sifferd, Tyler K. Fagan. *Responsible Brains. Neuroscience, Law, and Human Culpability*. MIT Press, 2018.
- Robert Klitzman. *Designing Babies. How Technology is Changing the Way We Create Children*. Oxford University Press, 2020.
- Erik Parens, Josephine Johnston, eds. *Human Flourishing in an Age of Gene Editing*. Oxford University Press, 2019.
- Tomasz Pietrzykowski. *Personhood Beyond Humanism: Animals, Chimeras, Autonomous Agents and the Law*. SpringerBriefs. 2018.
- Robert A. Wilson. *The Eugenic Mind Project*. MIT Press, 2018.

Free pdf copies on Blackboard.

- National Academies Press. 2017a. *Human Genome Editing: Science, Ethics, and Governance*. National Academies Press, 2017.
- National Academies Press. 2017b. *National Academies of Science, Engineering, and Medicine. An Evidence Framework for Genetic Testing*. National Academies Press, 2017.

BLACKBOARD.

Blackboard will be used for course communications and access to PowerPoint presentations. Streaming of weekly classes is available for distance students. Video of each class is available to students via Mediasite.

PRIVACY.

To provide distance access to HCE courses, all classes are videotaped and available for later use. The videos are stored on MediaSite in the secure cloud. Duquesne University has a non-disclosure agreement with the MediaSite vendor that protects the privacy and security of the data and students. Videos stored in the MediaSite cloud are not available to anyone without defined access. The HCE Faculty (i.e., the course Instructor) is the only one who may authorize access to the videos, typically only to students in the class.

ACADEMIC INTEGRITY.

This syllabus incorporates the “Expectations of Academic Integrity.” Cheating and plagiarism cannot be tolerated. All relevant policies of the McAnulty College and Graduate School of Liberal Arts apply.

Students must be attentive to avoiding plagiarism. There is a form of plagiarism that needs special attention, as follows. When a text, e.g. 5 lines, is taken from a resource and used verbatim (with an accompanying reference), the result is plagiarism. Two general rules must be adopted to avoid plagiarism. First, any text from a resource that is three or more words should be in quotations with an accompanying reference. However, HCE faculty discourage an extensive use of quotations in essays insofar as they can detract from the student’s critical analysis. Second, to avoid extensive use of quotations and stimulate analytical interaction with textual resources, we recommend that when a text is adopted from a resource (e.g. 5 lines), flag the text in your essay with quotation marks and some form of colored highlight to remind you that you have adopted an exact quote. Then expand the 5 lines into a paragraph of your critical analysis (e.g. 10-15 lines) that integrates the points in the quote into your own argument, while avoiding use of exact words from the quote. Then remove the highlighted original quote but provide a reference to indicate the resource used. Please strictly comply with avoiding any form of plagiarism. If the faculty member suspects plagiarism, the student’s submission may be run through anti-plagiarism software, which detects various kinds of plagiarism. It is also recommendable to check your own text. Free downloadable software is available on the Internet.

Duquesne University has an Academic Integrity Policy (for Graduates) that pays special attention to the issue of plagiarism, see: <http://www.duq.edu/academics/university-catalogs/2016-2017-graduate/academic-policies/academic-integrity>. If plagiarism is confirmed there will be academic sanctions, varying from lowered grade to dismissal from the program.

COURSE GRADE.

There will be no examinations. The course grade will be assigned based on the quality of the course Research Essay and the Research Projects. The grade will be a combination of 15% for each of the two Research Projects and 70% for the final essay.

No midterm grades will be assigned. End of term grades will be assigned adopting grading policy in the McAnulty College and Graduate School of Liberal Arts, as follows:

A	4.0	distinguished scholarly work
A-	3.7	
B+	3.3	
B	3.0	normal progress towards degree
B-	2.7	

C+	2.3	
C	2.0	warning; student subject to departmental action
F	0.0	

HCE HANDBOOK.

The Center for Healthcare ethics has developed a *Handbook* of Policies, Procedures, and Guidelines to guide students in all curriculum related matters. See the HCE website.

REASONABLE ACCOMMODATIONS.

Students with documented disabilities are entitled to reasonable accommodations if needed. If you need accommodations, please contact the Office of Freshman Development and Special Student Services in 309 Duquesne Union (412-396-6657) as soon as possible. Accommodations cannot always be granted retrospectively.