

## **Exploring Human Enhancement Technology Through Bioethics and Humanity Lenses**



UNIVERSITAS GADJAH MADA

CENTER FOR BIOETHICS AND MEDICAL HUMANITIES  
FACULTY OF MEDICINE, PUBLIC HEALTH AND NURSING

REPUBLIC INDONESIA  
KEMENTERIAN HUKUM DAN HAK ASASI MANUSIA

# SURAT PENCATATAN CIPTAAN

Dalam rangka perlindungan ciptaan di bidang ilmu pengetahuan, seni dan sastra berdasarkan Undang-Undang Nomor 28 Tahun 2014 tentang Hak Cipta, dengan ini menerangkan:

Nomor dan tanggal permohonan : EC00202177567, 11 Desember 2021

## Pencipta

Nama : **dr. Wika Hartanti, MIH, dr. Nur Azid Mahardinata dkk**  
Alamat : Minggiran Baru MJ 2/930 RT 048/RW 014 Suryodiningratan,  
Mantrijeron, Yogyakarta, Yogyakarta, DI YOGYAKARTA, 55143  
Kewarganegaraan : Indonesia

## Pemegang Hak Cipta

Nama : **Direktorat Penelitian UGM**  
Alamat : Gedung Pusat UGM, Lantai 3 Sayap Selatan, Bulaksumur, Sleman, DI  
YOGYAKARTA, 55281  
Kewarganegaraan : Indonesia  
Jenis Ciptaan : **Modul**  
Judul Ciptaan : **Exploring Human Enhancement Technology Through Bioethics And  
Humanity Lenses**  
Tanggal dan tempat diumumkan untuk pertama kali : 30 November 2021, di Yogyakarta  
di wilayah Indonesia atau di luar wilayah Indonesia  
Jangka waktu perlindungan : Berlaku selama 50 (lima puluh) tahun sejak Ciptaan tersebut pertama kali  
dilakukan Pengumuman.  
Nomor pencatatan : 000311142

adalah benar berdasarkan keterangan yang diberikan oleh Pemohon.

Surat Pencatatan Hak Cipta atau produk Hak terkait ini sesuai dengan Pasal 72 Undang-Undang Nomor 28 Tahun 2014 tentang Hak Cipta.



a.n Menteri Hukum dan Hak Asasi Manusia  
Direktur Jenderal Kekayaan Intelektual  
u.b.  
Direktur Hak Cipta dan Desain Industri

Dr. Syarifuddin, S.T., M.H.  
NIP.197112182002121001

## Disclaimer:

Dalam hal pemohon memberikan keterangan tidak sesuai dengan surat pernyataan, Menteri berwenang untuk mencabut surat pencatatan permohonan.

## LAMPIRAN PENCIPTA

No	Nama	Alamat
1	dr. Wika Hartanti, MIH	Minggiran Baru MJ 2/930 RT 048/RW 014 Suryodiningratan, Mantrijeron, Yogyakarta
2	dr. Nur Azid Mahardinata	Kampung Sewu RT 002/RW 009 Sewu Jebres Surakarta, Kartasura
3	dr. Galuh Dyah Fatmala	Tegowanu Kulon RT 002/RW 002 Tegowanu, Grobogan
4	Nabila Puspakesuma, SPsi, MSc	Gang Jembatan Merah V/72 Prayan Wetan Kaliwaru RT 005/RW 035 Condongcatur, Depok, Sleman



## **Exploring Human Enhancement Technology Through Bioethics and Humanity Lenses**



UNIVERSITAS GADJAH MADA

CENTER FOR BIOETHICS AND MEDICAL HUMANITIES  
FACULTY OF MEDICINE, PUBLIC HEALTH AND NURSING

## TITLE PAGE

BIOETHICS CRASH COURSE SERIES:

# EXPLORING HUMAN ENHANCEMENT TECHNOLOGY THROUGH BIOETHICS AND HUMANITY LENSES

**COURSE GUIDES**  
**1<sup>ST</sup> Edition 2021**

Reformulated from the pilot elective module FMPHN UGM  
“Exploring The Human Enhancement Technology”



UNIVERSITAS  
GADJAH MADA

CENTER FOR BIOETHICS AND MEDICAL HUMANITIES  
FACULTY OF MEDICINE, PUBLIC HEALTH AND NURSING

Address: Jl. Farmako Sekip Utara, Yogyakarta, 55281  
Phone/Fax.: 0274-547489  
Email: [cbmhfkugm@ugm.ac.id](mailto:cbmhfkugm@ugm.ac.id)

## TEAM OF AUTHORS

### COORDINATOR:

dr. Wika Hartanti, MIH

### MEMBERS:

dr. Nurazid Mahardinata

dr. Galuh Dyah Fatmala

Nabila Puspa Kesuma, S.Psi, M.Sc

## ACKNOWLEDGEMENT

### Expert Consultants:

Prof. dr. Moh. Hakimi, Sp.OG (K), PhD

Prof. Dr. Shafaatun Almirzanah, M.Th, M.A, PhD

Dr. CB Kusmaryanto, SCJ

Prof. dr. Sofia Mubarika, M.Med.Sc., PhD

Prof. dr. Yati Soenarto, Sp.A (K), PhD

Prof. Dr. dr. Soenarto Sastrowijoto, Sp.THT (K)

Center for Bioethics and Medical Humanities, FMPHN UGM

# TABLE OF CONTENTS

<b>TITLE PAGE</b> .....	<b>2</b>
<b>TEAM OF AUTHORS</b> .....	<b>3</b>
<b>ACKNOWLEDGEMENT</b> .....	<b>3</b>
<b>TABLE OF CONTENTS</b> .....	<b>4</b>
<b>FOREWORD</b> .....	<b>5</b>
<b>COURSE OVERVIEW</b> .....	<b>6</b>
<b>LEARNING OBJECTIVES</b> .....	<b>8</b>
<b>LEARNING APPROACHES</b> .....	<b>9</b>
<b>LEARNING ACTIVITIES</b> .....	<b>10</b>
<b>COURSE ASSESSMENT</b> .....	<b>12</b>
<b>SUMMARY COURSE OUTLINE</b> .....	<b>13</b>
<b>HET TOPIC TREE</b> .....	<b>14</b>
<b>UNIT 1: CONTEXTUAL EXPLORATION</b> .....	<b>15</b>
LEARNING OBJECTIVES .....	15
LECTURES .....	15
MOVIE DISCUSSIONS .....	18
TUTORIAL (FACILITATED GROUP DISCUSSIONS) .....	19
GROUP PROJECT .....	19
INDIVIDUAL ESSAY ASSIGNMENT .....	20
TIME ALLOCATION .....	20
<b>UNIT 2: ANALYTICAL DISCOURSE</b> .....	<b>21</b>
LEARNING OBJECTIVES .....	21
LECTURES .....	21
READING ANALYSIS .....	23
MINI SEMINAR .....	24
TIME ALLOCATION .....	24
<b>REFERENCES</b> .....	<b>25</b>
<b>APPENDIX</b> .....	<b>26</b>
LEARNING RESOURCES .....	26
<i>Assigned Readings</i> .....	26
<i>Optional Readings</i> .....	26
<i>Useful Websites</i> .....	27
HET GROUP PROJECT GUIDE .....	27

## FOREWORD

The advancement and innovation of science and technology has never cease to grow, in pursue of augmenting human life and daily experiences. These rapid progressions of human enhancement science and technology have created inevitable bioethics dilemmas for individuals, society, environment, and humanity in general. Consequently, the growing needs to prepare and equip our scientists, scholars, and practicing professionals, especially those working in health-medicine related field, with the sufficient knowledge and basic capacity to navigate and address the various ethical issues related to Human Enhancement Technology (HET) application.

The Center for Bioethics and Medical Humanities (CBMH) at Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada (FMPHN UGM), views this as an opportunity to provide assistance and facilitation in the building of bioethics capacity required for addressing complexity HET issues. One of the strategies to initiate the capacity building is through this bioethics crash course series, specifying on HET topic. This HET crash course is also expected to foster a continuous open dialogue, as well as encouraging the birth of new discourses regarding the advancement and innovation of science and technology from bioethics and humanity perspectives. The multi and even transdisciplinary dialogue among scholars and practicing professionals hopefully could promote sustainable and humane future HET development.

This particular Bioethics Crash Course Series is re-formulated from the CBMH experiences in conducting the pilot elective bioethics course titled “Exploring The Human Enhancement Technology” delivered for medical students at FMPHN in December 2015 and 2016. Learning from the positive appreciations and feedbacks for that elective module, we believe a much broader audience of health professionals, and even other interested scholars or general participants, would need and benefit from such course. Hence the we presented this formulation of Course Guides on “Exploring Human Enhancement Technology through Bioethics and Humanity Lenses”.

## COURSE OVERVIEW

Medical technology has long done wonders to human life, from providing cures and treatments for illnesses, to restoring quality of life after a disease. But the rapid advancement of knowledge and technology in this area has gone beyond just that of combating diseases and sicknesses. In its development, this technology has proven its ability to augment human form and function to achieve specific goals or desired condition in certain aspect of human's life. The topic human enhancement technology has now become one of the most attractive aspect of medicine, with extensive research and development in various areas, beyond the scope biomedical, but also involving nanotechnology, information technology, and cognitive science.<sup>1,2,3</sup>

Example of issues raised with human enhancement technologies range from parents worried about the rearing obligations following biomedical interventions on their offspring, to the case of competitive institutions, like sports, threatened with cheating cases. Common questions had been raised regarding the practice of HET in various contexts, such as whether using enhancement would be considered cheating (referring to sports and cognitive enhancement), whether enhancement would equal to fake and compromise human authenticity, whether enhancement would lead to dehumanization, and how should limit be placed for enhancement practice in health care services.<sup>2,3</sup>

Understanding the human enhancement technology issues has become imperative for health professionals, including doctors, because the issues following this advanced technology will not get simpler, it will be more complicated.<sup>4,5</sup> Students, especially those in health related field of study, as the future generation of health professionals, will be challenged with lots of dilemmatic situation and complexity in decision making process. Such problems of dilemmatic options will not only be faced by those practicing medicine in clinical setting, but also those in public health and policy domain.

To deal with dilemmas and solve problems, one needs to first have proper knowledge and understanding on the landscape of issues and contexts. Before then delve deeper into the analysis and problem solving. Building this knowledge and analytical skills on HET issues can be initiated through courses which provide exploration of HET, tailored with introduction to basic concepts/ approaches for analysis.<sup>6,7</sup> Such course had been piloted at Universitas Gadjah Mada, which received great appreciation from medical students. Exploring the HET issues from bioethics and humanities perspectives had provided medical students with mind-opening learning experiences, which facilitated students' sensitivity to humanity, and the exercise of ethical and critical thinking.<sup>8</sup>

This bioethics crash course on HET has been initiated and reformulated with consideration to the importance of facilitating the HET discourses for professionals and students in health related science and technology. The course will be divided into 2 units, with the first part of unit focuses on exploring the technologies CONTEXTUAL FEATURES, comprising topics such as basics and scope of discussion on HET; current biotechnology development; and dynamic and impacts of technologies in human life. On this part of module, students are provided with empirical data on how technology in general have developed and opportunities to closely

examine various forms of Human Enhancement Technology (HET). Course participants are expected to explore and nurture curiosity, while at the same time also starting their critical thinking process on HET.

The second unit of the course focuses on ANALYTICAL DISCOURSE, which comprises topics such as the complex dimensions surrounding HET; critical thinking and ethics discussion on HET; and balancing the scale for future projections. On this unit, course participants are expected to examine the extensive discourse concerning HET, through understanding the complex dimensions of HET and supported with the conceptual arsenals provided in the course. Building on that, participants are then expected to exercise their knowledge to further develop skills in delivering and advocating their moral/ethical stance.

## LEARNING OBJECTIVES

### General Objectives:

Participants to have basic understanding and awareness on important issues surrounding HET, also develop basic skills to critically analyze and evaluate problems and dilemmas raised by HET advancement.

### Specific Objectives:

1. Participants to understand scientific facts and data related to HET:
  - a. Definition, characteristics and range of variation related to the development of HET.
  - b. Roles of technology in daily human life and experiences
  - c. Impacts and influences of HET in various aspects of humanity
  - d. Projection of potential HET implications for human future
2. Participants to recognize/ identify contexts and problems related to HET:
  - a. The underlying/ driving factors of HET advancement: socioeconomic and political aspects
  - b. The dilemmas and discourses surrounding HET: humanity, ethical, philosophical and political debates
  - c. The fundamental concerns/ questions raised by the progression of HET: philosophical (dehumanization, demoralization, eugenics, normalcy) and anthropological (shifting paradigm, disruption of society constructs and beliefs) aspects.
3. Participants to exercise critical skills necessary for analyzing/ evaluating problems related to HET:
  - a. Gathering valid data/ facts related to HET case/ problem
  - b. Choosing and applying the relevant conceptual arsenals to approach a HET problem/ case
  - c. Analyzing with bioethics perspective/ framework
  - d. Articulating the ethical position statement and recommendation, supported with justification/ arguments.

## LEARNING APPROACHES

The topic human enhancement technology will be mainly discussed and approached from the bioethics and medical humanities perspectives. Other relevant disciplines and knowledge will be incorporated to support better comprehension.

The gradual and facilitative learning process are the emphasis in this course. Exchange of ideas and different opinions are encouraged and will be moderated to support comprehension of contexts and landscape of discourses. Course participants are expected and required to have active engagement/discussion in order to gain maximum benefit of knowledge and exercise skills in opportunities provided throughout the course.

As practical guides, the course appreciates the following attitudes, and participants are encouraged to put their effort in developing/improving these set of attitudes:

- active engagement and contributions
- honest opinion and critics
- creative ideas and or out of the box perspectives
- mindful-logical arguments
- respects for differences and diversity of ideas
- find interest, explore curiosity, build opinion/argument
- basic courtesy and manner in discussion

## LEARNING ACTIVITIES

The following learning activities are constructed to help participants achieve the learning objectives:

### 1. Lectures and Teleconference

This activity is constructed to provide data for participants, and not to be considered as the main learning process and source of knowledge. Participants are expected to gain as much information and explore the materials presented by lecturer, for the purpose of stimulating interest and curiosity, providing context for subsequent discussion, further analysis and discourses. The course may be inviting some guest lectures to give their talk (distant lecture) via teleconference. Most of the lectures will be followed by moderated discussion. Participants are encouraged to be active and engage in forum, as this is the actual and main learning process. Quizzes may be given, or commentaries may be asked, before or after one or several lecture sessions. Participants are encouraged to make preparation with independent reading or simple research for relevant lecture title.

### 2. Movie discussions

Movies and short clips are meant to provide participants with context illustration, to facilitate better visualization and portrait of the factual situation, complex dimensions involved, dynamic interaction between human, technology and their environment. During movie discussion, participants are encouraged to activate and exercise their senses and empathy, to identify any issues or potential problems related to humanity and ethics. While at the same time also starting the critical thinking process.

### 3. Group discussion with facilitators

Group discussions are constructed to provide participants opportunity to deepen and widen the HET exploration and discourse, as well as focusing in more specific topic/theme. In smaller groups, participants may be more comfortable and encouraged to exercise their skills in building, delivering and defending opinion, ideas or arguments.

#### Preparations before discussion:

Read relevant materials, and write personal opinion/comments.

#### During discussion:

Active engagement, contribute ideas and opinion, manner-mindful-logical in delivering arguments, basically speak up.

#### After discussion:

Write commentaries / documenting the take home message.

### 4. Group Project

Participants will be divided in to small groups of 5 – 8 members, and assigned to work on a short collaborative project. Project topic and instructions for assignment will be informed by course facilitators. The assignment is designed to be completed in the allocated group work session throughout the course. Extra working hours outside the course schedule should not be necessary.

Despite the nature of collaborative work, each participants as a member in the group must have significant contribution for the group work. The division of responsibility and form of contributions must be clearly documented.

Result of group work must be presented in mini seminar, and also written in a brief report paper.

**5. Individual Essay Assignment (Guided Self Study)**

During the course, there will be one individual assignment that must be completed. Each participants are required to select a reading from the provided reading list, and then write commentaries. This reading should help participants gain wider perspectives and stimulate critical thinking based on their personal interest. Most importantly, this independent learning must enable participants to exercise honest self-reflection on the selected topic.

## COURSE ASSESSMENT

### Components for course participants' evaluation:

1. Group project (written report on evaluation of a HET case)	30%
2. Mini seminar (presenting group project results)	10%
3. Individual essay (critical appraisal of article)	30%
4. Course examination (conceptual/ theoretical comprehension, MCQs)	30%

### 1. Group Project and Mini Seminar

Group project result will be graded according to the quality of written group report and group presentation in mini seminar. Group grade will apply equally to all participants member of the group. However, identified unequal distribution of work or contribution among participants in the group will affect the individual grade of underperforming participants.

### 2. Individual Essay

Every participant will need to complete individual assignments in the form of short essay, derived from their reading relevant for their group project topic. Participants are expected to write in their critical and reflective perspectives of their readings, supported with sound and logical arguments. This assignment will be graded individually as part of course assessment.

### 3. Course Examination

The conceptual/ theoretical comprehension exam will be in the form of MCQs, to be completed individually. Questions will require participants to answer with the newly acquired knowledge from the course. Emphasis will be on basic comprehension of concepts and theories discussed throughout the course.

### Specific Provision for Assessment:

#### a. Attendance and participation

Attendance is important to ensure full participation and contribution in any discussion forum and learning activities, hence a complete (100%) attendance is pre-requisite for final course evaluation. In case of certain condition of inevitable absence, provision for substitute assignments will be decided accordingly. Dishonesty in attendance record will not be tolerated.

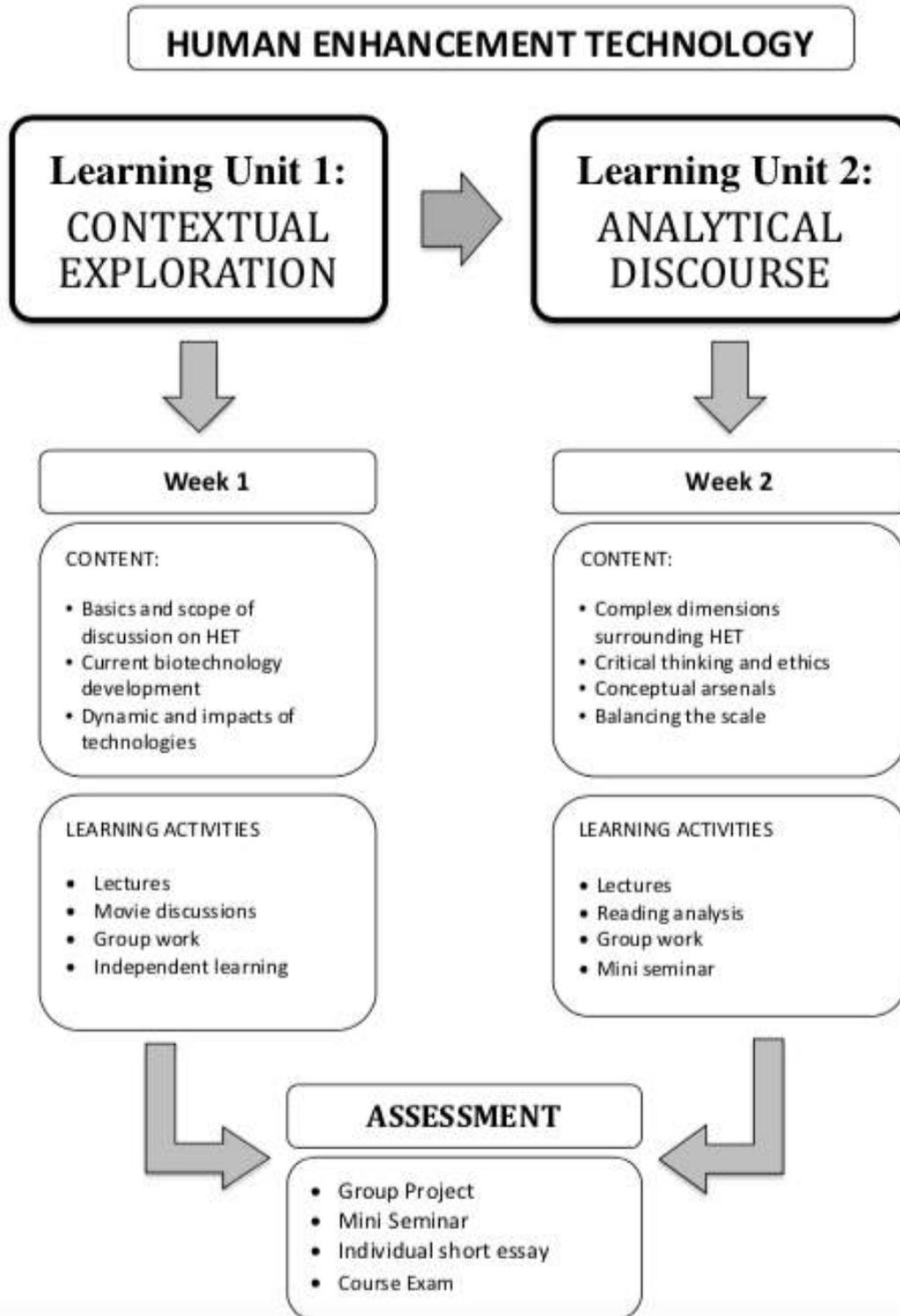
#### b. Log/ journal for group project involvement

Every participants must write log/journal to document their contribution on group project development. This log/journal will be marked, but no graded, as pre-requisite for entitlement of group project grade.

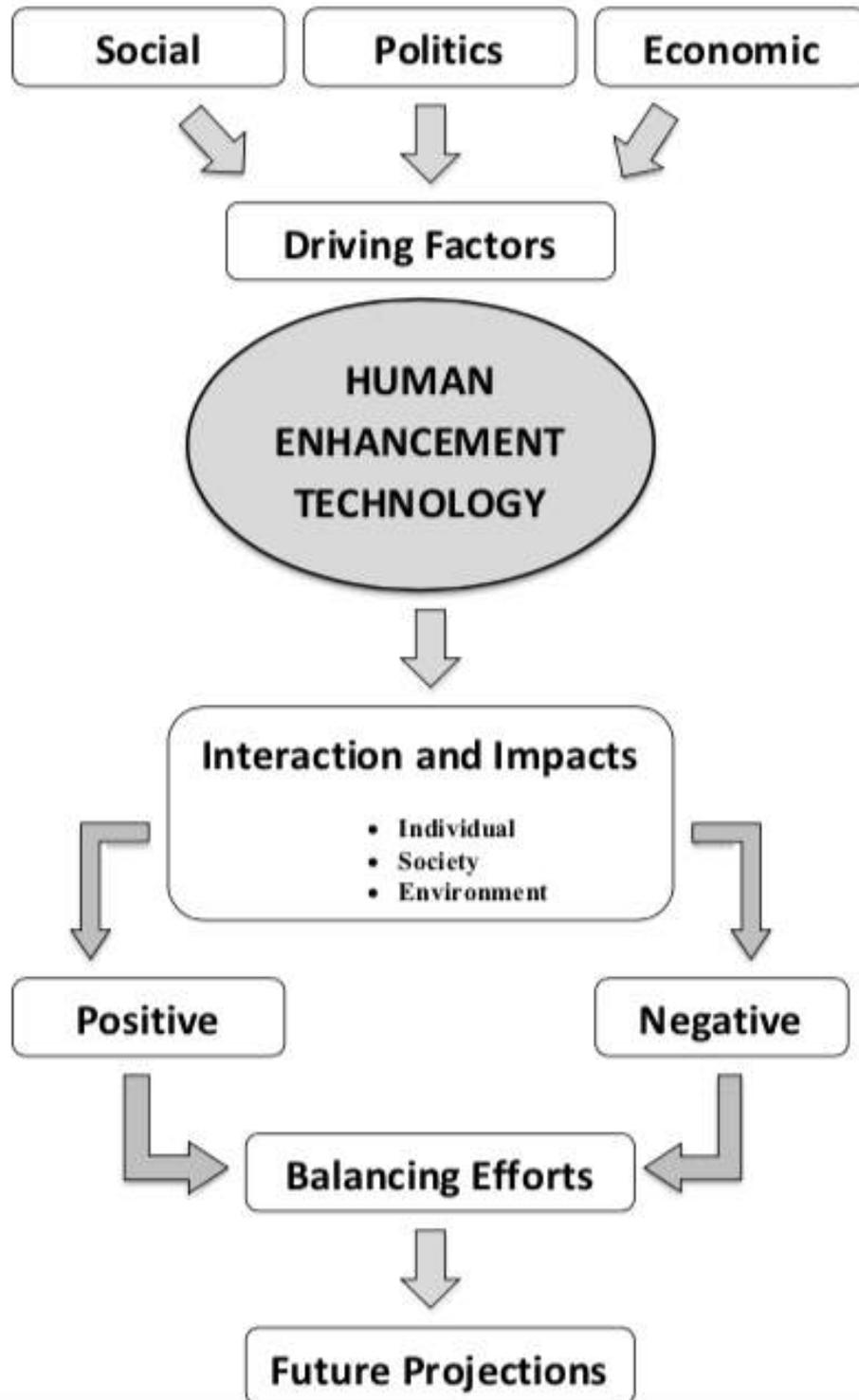
### Course's Final Grades:

A (>81)	: High Distinction
B (71-80)	: Distinction
C (55.5-70)	: Competent
D (45.5-55.5)	: Pass the minimum standard
E (0-45.5)	: Fail the minimum standard

## SUMMARY COURSE OUTLINE



## HET TOPIC TREE



## UNIT 1: CONTEXTUAL EXPLORATION

---

### Learning Objectives

Participants are expected to:	Learning Activities				
	Lectures	Tutorials	Movie Discussions	Group Project	Individual Assignment
1. Understand the definition, characteristics and range of variation related to the development of HET.	v	v			
2. Understand the roles of technology in daily human life and experiences.	v	v	v		
3. Understand the impacts and influences of HET in various aspects of humanity.	v	v	v	v	v
4. Understand the projection of potential HET implications for human future.	v		v	v	v
5. Initiate exercising the skills to recognize and gather relevant valid data/ facts related to HET case/ problem.				v	v
6. Initiate exercising the skills in choosing and applying the relevant conceptual arsenals to approach a HET problem/ case.				v	v

### Lectures

No.	Topics	Contents
1	HET Course Introduction	<ul style="list-style-type: none"> <li>- Course overview and guides</li> <li>- Getting to know HET: Scope and boundaries, Operational definition, Stimulating initial questions</li> <li>- Relevance, importance, and rationales of HET course topics for humanizing professionals</li> </ul>
2	Culture of biotechnology development in human enhancement	<ul style="list-style-type: none"> <li>- History of biotechnology development: important milestones of technology development for human life</li> <li>- Update and current trend on biotechnology advancement, and examples related to human enhancement</li> <li>- Importance of and or rationale behind rapid biotechnology development</li> </ul> <p>Discussion:</p>

		<ul style="list-style-type: none"> <li>- Potential implications of the new technology in human life (positive and negative aspects)</li> <li>- Humanity and ethical issues raised surrounding the technology implementation</li> <li>- Application in specific context: Indonesian setting (society construct, norm, culture, values)</li> </ul>
3	Current advancement in reproductive science and technology: ART and the surplus embryos	<ul style="list-style-type: none"> <li>- Update and trend on current reproductive technology development in general</li> <li>- Importance of and or rationale behind reproductive technology development</li> <li>- Examples on reproductive technology related to Human Enhancement (i.e. embryo selection in assisted reproductive technology)</li> <li>- Factual case example on the consequence of ART practice in Hospital</li> </ul> <p>Discussion:</p> <ul style="list-style-type: none"> <li>- Potential implications of the new technology in human life (positive and negative aspects)</li> <li>- Humanity and ethical issues raised surrounding the technology implementation</li> <li>- Application in specific context: Indonesian setting (society construct, norm, culture, values)</li> <li>- Possible solution to manage problems arising from the dilemmatic situation</li> </ul>
4	Cosmetic enhancement in medicine: Anti aging technology	<ul style="list-style-type: none"> <li>- Update and trend on current science and technology development in aesthetic medicine</li> <li>- Importance of and or rationale behind advancement of cosmetic enhancement in medicine</li> <li>- Specific examples on cosmetic enhancement: Anti Aging Technology</li> </ul> <p>Discussion:</p> <ul style="list-style-type: none"> <li>- Potential implications of the new technology in human life (positive and negative aspects)</li> <li>- Humanity and ethical issues raised surrounding the technology implementation</li> <li>- Application in specific context: Indonesian setting (society construct, norm, culture, values)</li> </ul>
5	Overview and advancement in Nanotechnology Dr. Harini Sosiati	<ul style="list-style-type: none"> <li>- General introduction and overview of Nanotechnology</li> <li>- Update and trend on current development in nanotechnology</li> <li>- Importance of and or rationale behind nanotechnology development</li> <li>- Specific examples on nanotechnology application in health/medicine/human life in general</li> </ul> <p>Discussion:</p>

		<ul style="list-style-type: none"> <li>- Potential implications of the new technology in human life (positive and negative aspects)</li> <li>- Humanity and ethical issues raised surrounding the technology implementation</li> <li>- Application in specific context: Indonesian setting (society construct, norm, culture, values)</li> </ul>
6	Human Enhancement Technology: On Gender and Sexuality	<ul style="list-style-type: none"> <li>- Update and trend on current science and technology development related to gender and sexuality</li> <li>- Importance of and or rationale behind science and technology advancement in this area</li> <li>- Specific examples on gender replacement technology</li> </ul> <p>Discussion:</p> <ul style="list-style-type: none"> <li>- Potential implications of the new technology in human life (positive and negative aspects)</li> <li>- Humanity and ethical issues raised surrounding the technology implementation</li> <li>- Application in specific context: Indonesian setting (society construct, norm, culture, values)</li> </ul>
7	Precision Medicine and Its Ethical Dilemma	<ul style="list-style-type: none"> <li>- General introduction and overview of Precision Medicine</li> <li>- Update and trend on current development in Precision Medicine</li> <li>- Importance of and or rationale behind Precision Medicine development</li> <li>- Specific examples on Precision Medicine application in health/medicine/human life in general</li> </ul> <p>Discussion:</p> <ul style="list-style-type: none"> <li>- Potential implications of the new technology in human life (positive and negative aspects)</li> <li>- Humanity and ethical issues raised surrounding the technology implementation</li> <li>- Application in specific context: Indonesian setting (society construct, norm, culture, values)</li> </ul>
8	HET in Neurology	<ul style="list-style-type: none"> <li>- Update and trend on current science and technology development in neurology</li> <li>- Importance of and or rationale behind advancement of neuroscience</li> <li>- Specific examples on neuroscience advancement to enhance human life/function</li> </ul> <p>Discussion:</p> <ul style="list-style-type: none"> <li>- Potential implications of the new technology in human life (positive and negative aspects)</li> <li>- Humanity and ethical issues raised surrounding the technology implementation</li> <li>- Application in specific context: Indonesian setting (society construct, norm, culture, values)</li> </ul>

9	New Drugs Development for Human Enhancement	<ul style="list-style-type: none"> <li>- Update and trend on current drugs development in general</li> <li>- Importance of and or rationale behind advancement in drugs development and pharmaceutical research</li> <li>- Examples of drugs development for human enhancement purpose (i.e. hormone therapy for transgender, performance enhancement drugs for athletes, etc)</li> <li>- Potential ethical issues raised by the current drugs development</li> </ul>
10	The impact of advanced technology on future health systems (the Future Hospitals)	<ul style="list-style-type: none"> <li>- Current trend on advanced technology development and application in health care services</li> <li>- Potential ethical problems/dilemma in health care systems as consequences to the application of advanced science and technology</li> <li>- Projection and necessary provision to the ideal future health care systems</li> </ul>

Most of lecture sessions are designed to consist 2 parts:

The 1<sup>st</sup> half: providing data from experts in the field.

The 2<sup>nd</sup> half: providing opportunity for elaborate discussion on the topic.

The following are basic stimulating questions for discussions:

- Potential implications of the new technology in human life (positive and negative aspects)
- Humanity and ethical issues raised surrounding the technology implementation
- Application in specific context: Indonesian setting (society construct, norm, culture, values)

## Movie Discussions

Title:	Cost of Beauty
Source/Link:	Al Jazeera English – Official Youtube Channel <a href="https://www.youtube.com/watch?v=wp4YZdSz2aA">https://www.youtube.com/watch?v=wp4YZdSz2aA</a>
Overview:	Documentary on Korean trend in plastic surgery. Illustration of how technology development interact with human as member of society, and vice versa.
Learning objectives:	<ul style="list-style-type: none"> <li>• Understand the sociopolitical construction of the normal</li> <li>• The dystopia pop culture produces</li> </ul>

Title:	How To Survive A Plague
Source/Link:	<a href="http://surviveaplague.com">http://surviveaplague.com</a>
Overview:	Documentary on HIV/AIDS drugs development, which is influenced by society movement in the USA.
Learning objectives:	<ul style="list-style-type: none"> <li>• Understand that technology is political shaped and motivated</li> <li>• Role of physicians in bringing technology for the poor</li> </ul>

## Tutorial (Facilitated Group Discussions)

1 <sup>st</sup> Session	
Topic	Getting to know Human Enhancement Technology
Illustrating context/Source	Movie: Overview/Introduction to HET Reading: Ethics of Human Enhancement: 25 Questions and Answers
Stimulating questions	<ul style="list-style-type: none"> <li>• What is enhancement?</li> <li>• What is the difference between enhancement and therapy?</li> <li>• What are the examples of human enhancement technology in our daily life?</li> </ul>
Familiarizing terms	<ul style="list-style-type: none"> <li>• Enhancement, augmentation</li> <li>• NBIC: nanotechnology, biotechnology, information technology, cognitive science</li> </ul>
Activities	<ul style="list-style-type: none"> <li>• Brainstorming, exchange of ideas and perceptions on HET</li> <li>• Exploring and identifying area of interests in HET</li> <li>• Initiating discussion for group work assignment</li> </ul>
2 <sup>nd</sup> Session	
Topic	How Technology Have Affected Human Life?
Illustrating context/Source	Individual reflection from Independent learning Personal take on the 1 <sup>st</sup> week lectures
Stimulating questions	<ul style="list-style-type: none"> <li>• How has technology changed human life positively?</li> <li>• How has technology caused harm to human?</li> </ul>
Activities	<ul style="list-style-type: none"> <li>• Exchange of perspectives and perceptions on the various forms of HET and its implications for human</li> <li>• Group work: discussion on agreed theme/topic, setting framework/outline, work plan and distribution among group members</li> </ul>

## Group Project

Participants will be assigned into small groups of 5-8 members to work on a project evaluating HET. Each groups are required to decide on a specific area of interest, can be a case or a phenomena related to any HET context. The group project will aim for demonstrating critical analysis on the selected case of interest, and formulate a position statement of how the group would advocate for the technology. Support the group position with moral and ethical arguments/ justification. Suggest a recommendation for improvement/ future development if any.

The result of group project should be documented in a written report, and also be presented in mini seminar session as the final assignment and assessment of the course. Detailed information about the group project guide will be explained by the course director in class

session, and written guide of group project provided in the appendix. In general, group work should include the following basic components:

- Background and Context
- Problems identification
- Critical analysis on factors involved
- Proposed solution/recommendation
- Conclusion
- References

### Individual Essay Assignment

Participants are assigned to do at least one scholarly article according to personal interests related to Human Enhancement Technology, and then write 700 – 1000 words of individual commentaries. It is suggested and encouraged that participants pick their reading which directly relates to the topic for group work, so as to support their contribution in respective groups.

Participants are free to find their reading from any scholarly article or journal publishers. If preferred, participants may select reading provided/offered in the course. Participants are welcome to consult the course coordinator and facilitators for further assistance in finding the reading.

Technical provision on written commentaries for independent learning, this should not be a mere summary of the article. The written commentaries should consist participants' personal reflection on the matter, as well as demonstrates the process of critical thinking.

### Time Allocation

Lectures	20 hours
Movie Discussions	4 hours
Tutorial (Facilitated Group Discussion)	4 hours
Individual Essay Assignment (initiation)	3 hours
Group Project (initiation)	3 hours
<b>TOTAL</b>	<b>34 hours</b>

## UNIT 2: ANALYTICAL DISCOURSE

---

### Learning Objectives

Participants are expected to:	Learning Activities				
	Lectures	Reading Analysis	Individual Assignment	Group Project	Mini Seminar
1. Understand the underlying/ driving factors of HET advancement: socioeconomic and political aspects.	v	v			
2. Recognize the dilemmas and discourses surrounding HET: humanity, ethical, philosophical and political debates.	v	v	v	v	
3. Recognize the fundamental concerns/ questions raised by the progression of HET: philosophical (dehumanization, demoralization, eugenics, normalcy) and anthropological (shifting paradigm, disruption of society constructs and beliefs) aspects.	v	v	v	v	
4. Exercise the skills in choosing and applying the relevant conceptual arsenals to approach a HET problem/ case.			v	v	v
5. Exercise the skills to analyze and evaluate HET case with bioethics perspective/ framework.				v	v
6. Exercise the skills to articulate the ethical position statement and recommendation, supported with justification/ arguments.			v	v	v

### Lectures

No.	Topics	Contents
1	Human enhancement in medicine: therapy vs eugenics	<ul style="list-style-type: none"> <li>- Definition and boundaries of therapy and eugenics</li> <li>- What makes HET therapy and what makes it eugenics?</li> </ul>
2	The idiom of normalcy: what is normal and what is not?	<ul style="list-style-type: none"> <li>- How normal is defined</li> </ul>

		<ul style="list-style-type: none"> <li>- What influence the categorization of normal and not normal?</li> <li>- How the concept influence human life and values</li> </ul>
3	HET and human identity: dehumanizing?	<ul style="list-style-type: none"> <li>- The impact of HET in defining human identity</li> <li>- The dynamic of technological citizenship</li> </ul>
4	How human enhancement technology affects ethics?	<ul style="list-style-type: none"> <li>- Brief history and development of ethics</li> <li>- How the shaping of morality/ethics takes influence and differs form one another depending on the context</li> <li>- How application of ethics changes/affected by the growth of technolgy</li> </ul>
5	The ethics of intervention: technology for the poor	<ul style="list-style-type: none"> <li>- Overview of research in pediatric context: identifying the vulnerable (i.e. children, parents, etc)</li> <li>- Importance of ethics to govern science and technology development to benefit vulnerable population</li> <li>- Sharing experience and example of cases on technology development for the poor/vulnerable</li> </ul>
6	What drives development of biotechnology for human enhancement: politico – economic and biopolitical dimensions	<ul style="list-style-type: none"> <li>- Multifactors influencing development of biotechnology</li> <li>- The dynamic play and interaction between each dimensions (politic – economic – biopolitic), and example of case for illustration</li> <li>- Sharing experience on how to manage and balance the tensions from each dimensions</li> </ul>
7	The Politics of Pharmaceutical Research	<ul style="list-style-type: none"> <li>- Brief history of important pharmaceutical research milestones</li> <li>- Multiple factors driving drug research development</li> <li>- The role and politics surrounding funding pharmaceutical research</li> <li>- Efforts made to balance/manage conflict of interests in pharmaceutical research (regulations of research practice)</li> </ul>
8	How health technology affect the community from anthropological perspective	<ul style="list-style-type: none"> <li>- Anthropological perspective on the current development of health technology</li> <li>- Observation on how health technology influence the values, norms and culture in community, and vice versa</li> <li>- Example of case to illustrate the change in society attributed to health technology application</li> </ul>
9	Human Enhancement Technology through the lens of structural violence framework	<ul style="list-style-type: none"> <li>- Defining and recognizing structural violence in health care system</li> <li>- Analyzing the impact of advanced health technology on vulnerable population accessing health care services</li> </ul>

10	Health Technology Assessment on Human Enhancement Technology	<ul style="list-style-type: none"> <li>- Introduction and overview of Health Technology Assessment (HTA)</li> <li>- Rationale behind HTA</li> <li>- Values and principles incorporated in HTA</li> <li>- How has HTA influence the development of human enhancement technology?</li> <li>- How effective HTA to promote social justice?</li> </ul>
11	Bioethics for balance: Setting the limits to preserve humanities	<ul style="list-style-type: none"> <li>- What should limits HET development?</li> <li>- How ethics and politics interact and play critical role in determining the direction of HET development</li> <li>- Importance of Bioethics to promote transdisciplinary dialogue and attitude between scientists and professionals in health/medical system</li> </ul>
12	The utopic and dystopic projections of HET	<ul style="list-style-type: none"> <li>- Panel of experts, exchange of perspectives, sharing of experiences and wisdom on HET</li> <li>- Commentaries on the future projections of HET development</li> <li>- Concluding remark and course finale</li> </ul>

## Reading Analysis

1 <sup>st</sup> Reading	
Title	Introduction to Vita
Objectives	Through reading students would be able to <ul style="list-style-type: none"> <li>• Understand how “governing” forces creates medicalized subjects</li> <li>• Pharamceuticalization of welfare</li> </ul>
Activities	<ul style="list-style-type: none"> <li>• Sharing perceptions on reading material (based on personal commentaries) and personal take/reflection on the reading messages</li> <li>• Discuss differences</li> <li>• Discuss how the knowledge from reading would affect personal values</li> <li>• Document learning process</li> </ul>
2 <sup>nd</sup> Reading	
Topic	Pathologies of Power (Chapter 1: Structural Violence)
Objectives	Through reading, participants are expected to understand <ul style="list-style-type: none"> <li>• How agency and autonomy is limited through structural factors</li> <li>• What are ethics and human rights in a global era</li> </ul>

Activities	<ul style="list-style-type: none"> <li>• Sharing perceptions on reading material (based on personal commentaries) and personal take/reflection on the reading messages</li> <li>• Discuss differences</li> <li>• Discuss how the knowledge from reading would affect personal values</li> <li>• Document learning process</li> </ul>
------------	--

### Mini Seminar

Each groups are required to present their group project result in the mini seminar. At least one presenter and one moderator should be appointed from each group. It is encouraged to be as creative and engaging as possible in delivering the group presentation. Participants and their groups are welcome to utilize relevant supporting media for presentation session (audio, visual, illustrating property etc). However, the grading for group work will depend on the overall quality of work presented.

On the other hand, other participants and their groups sitting as audience, are required to have active participation and contribution in the discussion. In order to ensure equal participation, for each presentation session, one other group will be assigned as discussant for presenting group. In this mechanism, every group will take turns to play the role as presenting group in one session and discussant group in other session.

Allocation for each presentation session are approximately 15 minutes, including the oral presentation (7 minutes) and discussion (8 minutes).

### Time Allocation

Lectures	12 hours
Reading Analysis	4 hours
Individual Essay Assignment (continuation and finishing)	5 hours
Group Project (continuation and finishing)	5 hours
Mini Seminar	4 hours
<b>TOTAL</b>	<b>30 hours</b>

## REFERENCES

1. Bostrom N, Roache R. Ethical issues in human enhancement. *New waves in applied ethics*. 2008:120-52.  
Accessed online: <http://www.nickbostrom.com/ethics/human-enhancement.pdf>
2. Juengst, Eric and Moseley, Daniel, "Human Enhancement", *The Stanford Encyclopedia of Philosophy* (Summer 2015 Edition), Edward N. Zalta (ed.).  
Accessed online: <http://plato.stanford.edu/archives/sum2015/entries/enhancement/>
3. Allhoff F, Lin P, Moor J, Weckert J. Ethics of human enhancement: 25 questions & answers. *Studies in Ethics, Law, and Technology*. 2010 Feb 10;4(1).  
Accessed online:  
[http://digitalcommons.calpoly.edu/cgi/viewcontent.cgi?article=1000&context=phil\\_fac](http://digitalcommons.calpoly.edu/cgi/viewcontent.cgi?article=1000&context=phil_fac)
4. Hotze TD, Shah K, Anderson EE, Wynia MK. "Doctor, would you prescribe a pill to help me...?" A national survey of physicians on using medicine for human enhancement. *The American Journal of Bioethics*. 2011 Jan 13;11(1):3-13.
5. Delaney JJ, Martin DP. The role of physician opinion in human enhancement. *The American Journal of Bioethics*. 2011 Jan 13;11(1):19-20.
6. Upgrading the Human? Ethical and Philosophical aspects of Human Enhancement. Philosophy courses, Prospectuses 2014-2015 Faculty of Science, Radboud University.  
Accessed online:  
<https://www.studiegids.science.ru.nl/2014/en/science/prospectus/FNWIPhilosophycourses/course/34603/>
7. Giubilini A. Teaching and Learning Guide for: the Ethics of Human Enhancement. *Philosophy Compass*. 2015 Jun;10(6):424-6.
8. Hartanti W, Mahardinata N, Sastrowijoto S. Reviving critical thinking and sense of ethics and humanity through "Exploring Human Enhancement Technology". *Review of Primary Care Practice and Education (Kajian Praktik dan Pendidikan Layanan Primer)*.;2(3):102-10.

## APPENDIX

### Learning Resources

#### Assigned Readings

Joao Biehl. Introduction: Dead alive, dead outside, alive inside. In *Vita: Life in a zone of social abandonment*. University of California Press. 2005. Berkeley and Los Angeles, California.

Paul Farmer. Chapter 1: Structural Violence. In *Pathologies of Power*. University of California Press. 2003. Berkeley and Los Angeles, California.

#### Optional Readings

Editor Good BJ, et al. *A reader in medical anthropology: Theoretical Trajectories, Emergent Realities*. Wiley-Blackwell Publishing Ltd. 2010.

Bostrom N, Sandberg A. The wisdom of nature: an evolutionary Heuristic for human enhancement. In *Philosophical Issues in Pharmaceutics 2017* (pp. 189-219). Springer, Dordrecht.  
<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.220.1961&rep=rep1&type=pdf>

Hamlett P, Cobb MD, Guston DH. National citizens' technology forum: Nanotechnologies and human enhancement. In *Nanotechnology, the Brain, and the Future 2013* (pp. 265-283). Springer, Dordrecht.  
[https://cspo.org/legacy/library/090428F8AJ\\_lib\\_HamlettPCobbMDan.pdf](https://cspo.org/legacy/library/090428F8AJ_lib_HamlettPCobbMDan.pdf)

Coeckelbergh M. *Human being@ risk: Enhancement, technology, and the evaluation of vulnerability transformations*. Springer Science & Business Media; 2013 Feb 15.

Gladden ME. Utopias and Dystopias as Cybernetic Information Systems: Envisioning the Posthuman Neuropolity. *Creatio Fantastica*. 2015(3 (50)).  
[http://www.researchgate.net/profile/Matthew\\_Gladden/publication/281036188\\_Utopias\\_and\\_Dystopias\\_as\\_Cybernetic\\_Information\\_Systems\\_Envisioning\\_the\\_Posthuman\\_Neuropolity/links/55d2693408ae0b8f3ef8e1bd.pdf](http://www.researchgate.net/profile/Matthew_Gladden/publication/281036188_Utopias_and_Dystopias_as_Cybernetic_Information_Systems_Envisioning_the_Posthuman_Neuropolity/links/55d2693408ae0b8f3ef8e1bd.pdf)

Hongladarom S. A Buddhist perspective on human enhancement and extension of human lifespan. *Prajñā Vihāra: Journal of Philosophy and Religion*. 2015;16(1).  
<http://www.assumptionjournal.au.edu/index.php/PrajnaVihara/article/view/1221/1074>

Vaccari A. Transhumanism and human enhancement: A postmortem.  
[http://www.bioethica-forum.ch/docs/15\\_1/06\\_Vaccari\\_BF8\\_1.pdf](http://www.bioethica-forum.ch/docs/15_1/06_Vaccari_BF8_1.pdf)

Dorfman, W. I., & Walker, L. E. (2007). Normal vs. Abnormal Behavior: A Continuum. *First Responder's Guide to Abnormal Psychology*, 13-18.

Hogle, L. F. (2005). Enhancement technologies and the body. *Annu. Rev. Anthropol.*, 34, 695-716.

Brey, P. (2009). Human enhancement and personal identity. In *New waves in philosophy of technology* (pp. 169-185). Palgrave Macmillan, London.

- Sparrow, R. (2012). Human enhancement and sexual dimorphism. *Bioethics*, 26(9), 464-475.
- Clarke, S., Savulescu, J., Coady, C. A. J., Giubilini, A., & Sanyal, S. (Eds.). (2016). *The ethics of human enhancement: understanding the debate*. Oxford University Press.
- Koch, T. (2005). The ideology of normalcy: The ethics of difference. *Journal of Disability Policy Studies*, 16(2), 123-129.
- Schermer, M. (2008). On the argument that enhancement is “cheating”. *Journal of medical ethics*, 34(2), 85-88.
- Drescher, J., & Pula, J. (2014). Ethical issues raised by the treatment of gender-variant prepubescent children. *Hastings Center Report*, 44(s4), S17-S22.
- McVeigh, J., Evans-Brown, M., & Bellis, M. A. (2012). Human enhancement drugs and the pursuit of perfection. *Adicciones*, 24(3), 185-190.
- Browne, T. K., & Clarke, S. (2019). Bioconservatism, bioenhancement and backfiring. *Journal of Moral Education*, 1-16.
- Thompson, J. (2017). Transhumanism: How Far Is Too Far?. *The New Bioethics*, 23(2), 165-182.
- Schermer, M. (2013). Health, happiness and human enhancement—dealing with unexpected effects of deep brain stimulation. *Neuroethics*, 6(3), 435-445.

#### [Useful Websites](#)

<http://somatosphere.net/>  
<http://www.bbc.com/future>  
<http://news.discovery.com/> → especially the Tech and Human tabs  
<https://www.foresight.org>  
<http://cognitivesciencesociety.org/index.html>  
<http://www.cogsci.ucsd.edu>  
<http://www.mhealthnews.com>  
<http://mhealthknowledge.org>

#### HET Group Project Guide

(attached)



# **Human Enhancement Technology**

**GROUP PROJECT GUIDE**  
**For Course Facilitators and Participants**

---

- Decide on a particular case of HET
- Work in group to perform critical analysis/ evaluation of the technology (recognize problems, gather scientific data, analyze and evaluate)
- Incorporate the bioethics and humanities concept/ perspectives in your analysis/ approach
- Document the analysis result in a structured report
- Present and discuss the project in the course mini seminar

# **Description of Project**

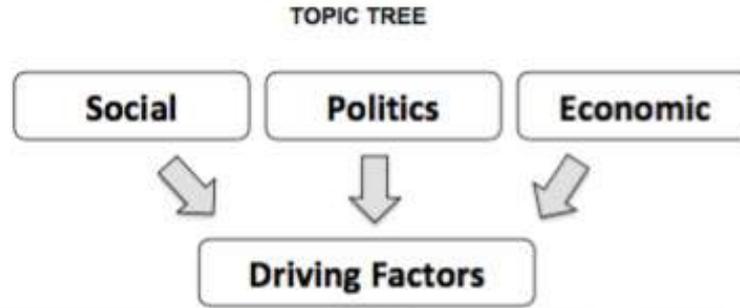
---

- Embryo selection
- Gene therapy for genetic modifications
- Performance enhancing drugs
- Neural implants
- Plastic surgery

**Example of  
HET cases**

---

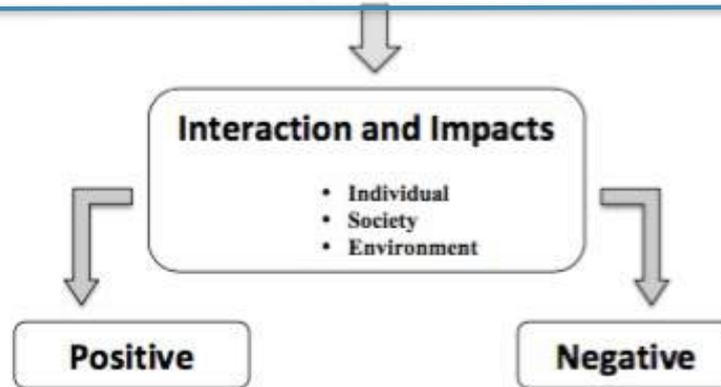
Critical Analysis  
on factors involved



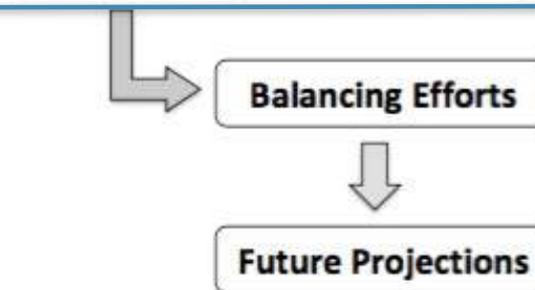
Background and context



Problems identification



Proposed solution/  
reccommendation



## Background context

- **Find a case of technology** related to health
- **Describe the technology**
  - what makes it an enhancement of human capacity – agreed definition of enhancement
  - Whose capacity is enhanced? And how?

## Problems identification

- **Identify (potential) impacts** – problems and benefit
- Multi level impacts – individuals, community, environment

## Critical analysis

- Rationale/background **why the technology is developed**
- Identify and explain what factors influence its development,

## Proposed solution/recommendation

- **Balancing** efforts
- **Regulation**, conditioning of context?

## Conclusion

- What is your **projection of the technology impact for humanity?**

# Project Report Components

---

- Identification of ethical issues/ problems in a HET case
- Application of concepts/ principles in analysis
- Articulation of arguments and justification
- Authenticity of ideas and recommendation
- Validity of scientific data to support analysis and arguments

## **Key Components of Project Assessment**

---

Tutorial (discussion with facilitators) (week 1)	4 hours
Group project initiation (week 1)	3 hours
Group project continuation (week 2)	5 hours
Mini Seminar (week 2)	4 hours
<b>TOTAL</b>	<b>16 hours</b>

## **Estimated time attributed for Group Project**

---

- **Guiding and facilitating one group project:**
  - Tutorial/ facilitated group discussion (fixed schedule)
  - Facilitation, consultation and progress monitoring (flexible schedule)
- **Evaluating/ assessing participants’:**
  - Group performance during Mini Seminar → Grading and feedback
  - Individual performance of each participants in the group → Written feedbacks
- **Moderating discussion sessions with expert lecturers**

# Facilitator’s Role

---