



UNIVERSITI TEKNOLOGI MARA

BMS671: ETHICAL & LEGAL ISSUES IN BIOTECHNOLOGY

Course Name (English)	ETHICAL & LEGAL ISSUES IN BIOTECHNOLOGY APPROVED
Course Code	BMS671
MQF Credit	2
Course Description	In this syllabus, the topics include moral and ethical issues of biotechnology, disadvantages and disadvantages of using biotechnology, legal issues pertaining to biotechnology, issues of concern in biotechnology and scope of work of a plant biotechnologist. Students are taught on a self learning basis using a combination of distance learning, self study, group interactions and tutorials.
Transferable Skills	Searching for literature and extracting data on bioethics case studies Scientific communication skills Debating on bioethical issues Skills will be developed by assignment and case studies and assessed by presentation and written reports
Teaching Methodologies	Blended Learning, Case Study, Tutorial, Discussion
CLO	CLO1 Explain the moral and ethical issues that arises due to the use of biotechnology CLO2 Identify ethical and social responsibility issues related to the use of specific biotechnology and molecular biology applications and discuss their impact to the receiving communities. CLO3 Explain basic legal issues relating to work in biotechnology e.g patents and intellectual property, and argue the ethical vs commercial benefits of these issues using specific case studies . CLO4 Evaluate the ethical issues regarding ownership of biotechnological product and resources, using specific examples. CLO5 Provide opinion and debate ethical issues related to biotechnology of major public concern e.g. GMO as food, stem cell research, human cloning etc from the point-of-view of commercial entities and the public consumer
Pre-Requisite Courses	No course recommendations
Topics	
1. Moral and Ethical Issues in Biotechnology 1.1) Moral Concerns 1.2) Ethical Concerns 1.3) Necessity of Moral and Ethical Concerns in Science 1.4) Evaluation of Moral and Ethical Concerns	
2. Practicalities and responsibilities of Biotechnology 2.1) Overview of Advantages of Biotechnology 2.2) Overview of Disadvantages of Biotechnology	
3. Patents and intellectual properties 3.1) Animal cloning 3.2) Embryonic stem cell research 3.3) Genetically modified organisms as food 3.4) Gene therapy 3.5) Designer babies	

4. Commercialisation of biotechnology

4.1) Patenting and Intellectual Property

4.2) Safety and environmental issues

4.3) Commercialization issues

5. Group discussion on ethical issues raised on biotechnology

5.1) n/a

6. Public consultation

6.1) Genetically modified organisms as food.

Assessment Breakdown		%	
Continuous Assessment		100.00%	

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Case Study	Modul 1 and 2 for CLO 2	15%	CLO2
	Case Study	Modul 1 and 2 for CLO 1	15%	CLO1
	Case Study	Modul 3 and 4	30%	CLO3
	Discussion	Group discussion	10%	CLO4
	Presentation	Role-play, Public consultation	30%	CLO5

Reading List	Recommended Text	<ul style="list-style-type: none"> R. Twine 2010, <i>Animals as Biotechnology: Ethics, Sustainability and Critical Animal Studies</i>, Earthscan Lewis Vaughn 2009, <i>Bioethics: Principles, Issues and Cases</i>, Oxford University Press [ISBN: 978-01997962] Bohrer RA 2007, <i>A Guide to Biotechnology Law and Business.</i>, Carolina Academic Press, Durham, NC [ISBN: 978-159460087] Veatch RM 2011, <i>Basics in Bioethics</i>, 3 edition Ed., Pearson [ISBN: 978-020576562]
	Reference Book Resources	<ul style="list-style-type: none"> Jonathan Morris 2005, <i>The Ethics of Biotechnology</i>, Chelsea House Publishers [ISBN: 978-07910852]
Article/Paper List	Recommended Article/Paper Resources	<ul style="list-style-type: none"> I. Moosa 2015, Muslim Ethics and Biotechnology, <i>The Routledge Companion to Religion and Science</i> http://dukespace.lib.duke.edu/dspace/handle/10161/5941 J. Harris 2015, Germline Manipulation and Our Future Worlds, <i>The American Journal of Bioethics</i>, vol. 15, 30
Other References	<ul style="list-style-type: none"> Website <i>Actionbioscience</i> http://www.actionbioscience.org/biotechn ology/glenn.html 	