




TU Delft	Responsible Innovation: Ethics, Safety and Technology (UD9007)		
Course description	1. How to deal with risks and ethical questions raised by development of new technologies.		
Domain	Technology Policy and Management		
Level	Bachelor.		
Language	English		
Number of credits and workload	Number of credits . 3	Number of hours:	Total number of hours 84 hours in total
Semester period and Start date course	September Semester	Start date: October 2018	
Application deadline	31 August 2018.		

<p>Full course description</p>	<p>There is no doubt that technological innovation is one of the key elements driving human progress.</p> <p>However, new technologies also raise ethical questions, have serious implications for society and the environment and pose new risks, often unknown and unknowable before the new technologies reach maturity. They may even lead to radical disruptions. Just think about robots, self-driving vehicles, medical engineering and the Internet of Things.</p> <p>They are strongly dependent on social acceptance and cannot escape public debates of regulation and ethics. If we want to innovate, we have to do that responsibly. We need to reflect on -and include- our societal values in this process. This course will give you a framework to do so.</p> <p>The first part of the course focuses on ethical questions/framework and concerns with respect to new technologies.</p> <p>The second part deals with (unknown) risks and safety of new technologies including a number of qualitative and quantitative risk assessment methods.</p> <p>The last part of the course is about the new, value driven, design process which take into account our societal concerns and conflicting values.</p> <p>Case studies (ethical concerns, risks) for reflection and discussions during the course include - among others- nanotechnology, self-driving vehicles, robots, AI smart meters for electricity, autonomous weapons, nuclear energy and CO2capture and coolants. Affordable (frugal) innovations for low-income groups and emerging markets are also covered in the course. You can test and discuss your viewpoint.</p> <p>The course is for all engineering students who are looking for a methodical approach to judge responsible innovations from a broader - societal- perspective.</p>	
<p>Platform and link to course description</p>	<p>EdX</p>	<p>https://www.edx.org/course/responsible-innovation-ethics-safety-delftx-ri101x-</p>
<p>Course description in study guide</p>	<p>http://studiegids.tudelft.nl/a101_displayCourse.do?course_id=48478</p>	
<p>Lecturer(s)</p>	<p>Prof.dr. M.J. van den Hoven, Prof.dr.ir. I.R. van de Poel</p>	

Virtual Exchange Global Alliance

Extra Course information	What you'll learn <ul style="list-style-type: none"> • Understand the urgent need to include ethical questions with respect to (new) technology. • Know various ways/instruments to analyze risks of new technologies, both forward looking as backward looking (causes of accidents) • Understand various types of innovation (like radical, niche, incremental, frugal) and the conditions for success • Know how to deal with unknown risks (deep uncertainty) when it comes to new technologies • Are able to critically reflect on new technologies from an ethical and risk perspective (case studies). • Understand the concept of responsible innovation and Value Sensitive Design (VSD) and the implications for the design process 		
Picture of course			
Final examination date and time /period	TBA		
Examination registration deadline or drop-out deadline	Examination registration before: TBA There is no drop-out deadline.		
Type of examination	Paper + 10-15 minute (Skype) interview.		
Midterm examination?	<input type="checkbox"/> no	n.a.	
Previous exam papers available	<input type="checkbox"/> yes <input type="checkbox"/> no		
Resit? and date	<input type="checkbox"/> yes	TBA	
Grade release and transcript release	TBA		