TECHNOLOGY

Contents

[Introduction: 2](#_Toc169305696)

[Philosophy: 2](#_Toc169305697)

[1. Technological determinism 2](#_Toc169305698)

[2. Social constructivists 2](#_Toc169305699)

[Ethics: 2](#_Toc169305700)

[1. Bioethics 2](#_Toc169305701)

[2. Computer ethics 2](#_Toc169305702)

[3. Cyber ethics 2](#_Toc169305703)

[4. Nano ethics 2](#_Toc169305704)

[5. Ethics of Artificial Intelligence 2](#_Toc169305705)

[a) Robot ethics 2](#_Toc169305706)

[b) Machine ethics 3](#_Toc169305707)

[Types: 3](#_Toc169305708)

[1. Communication technology 3](#_Toc169305709)

[a) Television 3](#_Toc169305710)

[b) Internet 3](#_Toc169305711)

[c) Cell phones 3](#_Toc169305712)

[2. Electrical technology 3](#_Toc169305713)

[a) Computers 3](#_Toc169305714)

[b) Artificial 3](#_Toc169305715)

[c) Software 3](#_Toc169305716)

[3. Energy technology 3](#_Toc169305717)

[a) Solar panels 3](#_Toc169305718)

[b) Wind turbines 3](#_Toc169305719)

[4. Mechanical technology 4](#_Toc169305720)

[a) Manufacturing technology 4](#_Toc169305721)

[b) Heavy engineering technology 4](#_Toc169305722)

[5. Transportation technology 4](#_Toc169305723)

[a) Global Positioning System(GPS) 4](#_Toc169305724)

[b) Flight technology 4](#_Toc169305725)

# Introduction:

**Technology** is the application of [conceptual knowledge](https://en.wikipedia.org/wiki/Conceptual_model) for achieving practical [goals](https://en.wikipedia.org/wiki/Goal), especially in a [reproducible](https://en.wikipedia.org/wiki/Reproducibility) way. Technology plays a critical role in [science](https://en.wikipedia.org/wiki/Science), [engineering](https://en.wikipedia.org/wiki/Engineering), and [everyday life](https://en.wikipedia.org/wiki/Everyday_life). While it contributes to [economic development](https://en.wikipedia.org/wiki/Economic_development) and improves human [prosperity](https://en.wikipedia.org/wiki/Prosperity), it can also have negative impacts like [pollution](https://en.wikipedia.org/wiki/Pollution) and [resource depletion](https://en.wikipedia.org/wiki/Resource_depletion), and can cause social harms like [technological unemployment](https://en.wikipedia.org/wiki/Technological_unemployment) resulting from [automation](https://en.wikipedia.org/wiki/Automation).

# Philosophy:

**Philosophy** oftechnology is a branch of philosophy that studies the "practice of designing and creating artifacts", and the "nature of the things so created." It emerged as a discipline over the past two centuries, and has grown considerably since the 1970s. The *humanities philosophy of technology* is concerned with the "meaning of technology for, and its impact on, society and culture".

Early scholarship on technology was split between two arguments:

1. Technological determinism is the idea that technologies cause unavoidable social changes. It usually encompasses a related argument, technological autonomy, which asserts that technological progress follows a natural progression and cannot be prevented.
2. Social constructivists argue that technologies follow no natural progression, and are shaped by cultural values, laws, politics, and economic incentives. Modern scholarship has shifted towards an analysis of [sociotechnical systems](https://en.wikipedia.org/wiki/Sociotechnical_system), "assemblages of things, people, practices, and meanings", looking at the value judgments that shape technology.

# Ethics:

The **ethics**oftechnology is an interdisciplinary subfield of ethics that analyses technology's ethical implications and explores ways to mitigate the potential negative impacts of new technologies. There is a broad range of ethical issues revolving around technology, from specific areas of focus affecting professionals working with technology to broader social, ethical, and legal issues concerning the role of technology in society and everyday life.

Technology ethics encompasses several key fields.

* [Bioethics](https://en.wikipedia.org/wiki/Bioethics) looks at ethical issues surrounding biotechnologies and modern medicine, including cloning, human genetic engineering, and stem cell research.
* [Computer ethics](https://en.wikipedia.org/wiki/Computer_ethics) focuses on issues related to computing.
* [Cyber ethics](https://en.wikipedia.org/wiki/Cyberethics) explores internet-related issues like [intellectual property rights](https://en.wikipedia.org/wiki/Intellectual_property), [privacy](https://en.wikipedia.org/wiki/Internet_privacy), and [censorship](https://en.wikipedia.org/wiki/Internet_censorship).
* [Nano ethics](https://en.wikipedia.org/wiki/Ethics_of_nanotechnologies) examines issues surrounding the alteration of matter at the atomic and molecular level in various disciplines including computer science, engineering, and biology. And [engineering ethics](https://en.wikipedia.org/wiki/Engineering_ethics) deals with the professional standards of engineers, including [software engineers](https://en.wikipedia.org/wiki/Software_engineering) and their moral responsibilities to the public.
* [Ethics of Artificial Intelligence](https://en.wikipedia.org/wiki/Ethics_of_artificial_intelligence):

1. [Robot ethics](https://en.wikipedia.org/wiki/Robot_ethics): It deals with ethical issues involved in the design, construction, use, and treatment of robots
2. M[achine ethics](https://en.wikipedia.org/wiki/Machine_ethics): It is concerned with ensuring the ethical behaviour of [artificially intelligent agents](https://en.wikipedia.org/wiki/Intelligent_agent).

# Types:

While a single piece of technology often overlaps into different areas, there are generally six different categories of technology: communication, electrical, energy, manufacturing, medical and transportation. Here are the six different categories of technology with examples for each:

1. Communication technology consists of any technology people use to communicate with one another. Some early examples of communication technology include Morse code and the telegraph.

a) Television sets transmit signals we can listen to and view audio and visual content. People use television for entertainment, information and news, advertisements and marketing, and educational purposes, among other activities.

b) Internet is a powerful tool for businesses, charities, governments and individuals to use for marketing, communication and outreach, information broadcasting, social interactions and information sharing.

c) Cell phones are a modern improvement over the telephone, enabling the transfer of text, audio, and video content over the internet. With a cell phone, people can call other phones and converse with people worldwide. Cell phones are also equipped with applications that allow individuals to easily access information from anywhere in the world, take pictures and videos, communicate globally over social media and perform their professional duties.

1. Electrical technology: Many pieces of modern technology use electricity in some form.

a) Computers operate through a rapid pulsing of electrical currents. The core foundation of computers is binary code, which determines whether there is an electrical current.

b) Artificial Intelligence is a computer system designed to make decisions and perform actions autonomously. Many of our daily tasks have varying degrees of artificial intelligence sophistication.

c) Software contains a set of instructions and code that instructs the computer to function as intended. Developers build and deploy software to enhance user experience, automate processes, and make tasks more efficient.

1. Energy technology aims to help generate, store and transmit energy for various purposes.

a) Solar panels harness sunlight to generate electricity. People use these panels to power buildings, homes, outdoor lighting systems, water heating systems and more. Solar panels are a form of renewable energy, which is becoming a more popular form of energy generation due to its lack of carbon emissions. [X2/X2]

b) Wind turbines use the kinetic energy of the wind to generate electricity. Wind turbines are typically tall pillars located in open plains or within the ocean where winds are the strongest. As propellers spin, they generate energy, which the turbine stores in a battery or transmits directly to a desired source.

1. Mechanical technology is the application of engineering principles to achieve tasks more efficiently. People use this technology in a wide variety of machinery.

a) Manufacturing technology aims to produce goods faster and in a more cost-effective manner. Its benefits also include product quality improvements, better tracking and systems analysis, faster shipping speeds and enhanced employee safety.

b) Heavy engineering technology helps professionals perform tasks such as building bridges or digging tunnels and other construction activities more precisely, accurately and easily while improving safety.

1. Transportation technology is the application of engineering principles to achieve tasks more efficiently. People use this technology in a wide variety of machinery.

a) Global Positioning System (GPS), is a technology that can pinpoint locations on Earth from satellites in Earth's orbit. The satellites emit signals that are received by GPS receivers in devices on the ground. GPS can accurately determine a device's location by triangulating signals from multiple satellites. Using this technology, we can now receive real-time directions, monitor the transit of different objects or record precise time measurements.

b) Flight technology has become safer and more efficient over time due to innovations in materials, aerodynamics and engineering. We use flight technology in several ways—from the construction of planes to navigation equipment on an aircraft. Due to improvements in flight technology, such as advancements in GPS, navigation systems, and radar systems, there is increased precision in flight routes and safe take-offs and landings.