

HS 312 – Introduction to Science and Technology Studies

Lecture 1
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Outline

- General Introduction to STS
- What is Science and Technology Studies (STS)?
- Understanding the Relationship Between Science, Technology, and Society
- Course Logistics and policies

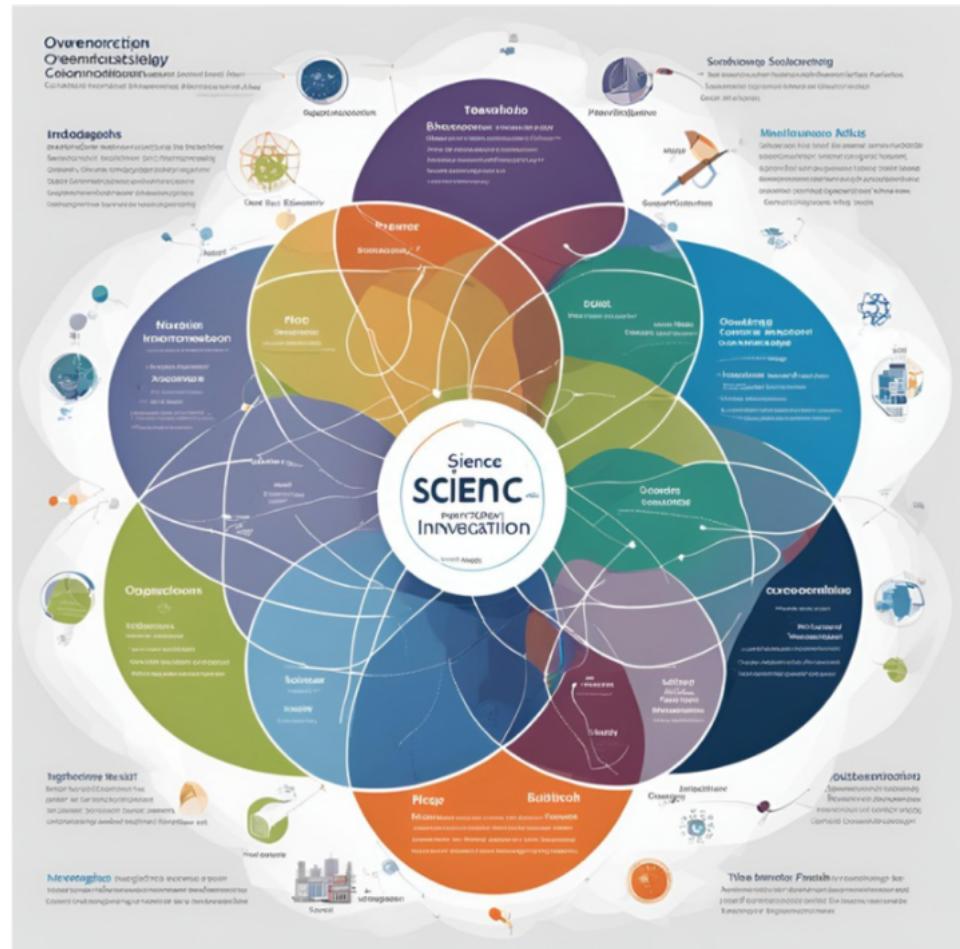


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Introduction to STS

- Science and Technology Studies (STS) is an interdisciplinary field
 - Examines how science and technology shape and are shaped by society
 - Explores the ethical, social, political, and cultural dimensions of science and technology



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Key Questions in STS

1. How is scientific knowledge produced?
2. How do technologies impact society?
3. What ethical and social issues arise from new technologies?
4. How do politics and culture influence science and technology?



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Key Features of STS

- Interdisciplinary Approach: Combines insights from sociology, history, philosophy, and more
 - Social Construction: Science and technology are shaped by human values and social contexts
 - Mutual Shaping: Society and technology influence each other
 - Ethics and Responsibility: Focuses on ethical implications and societal impact



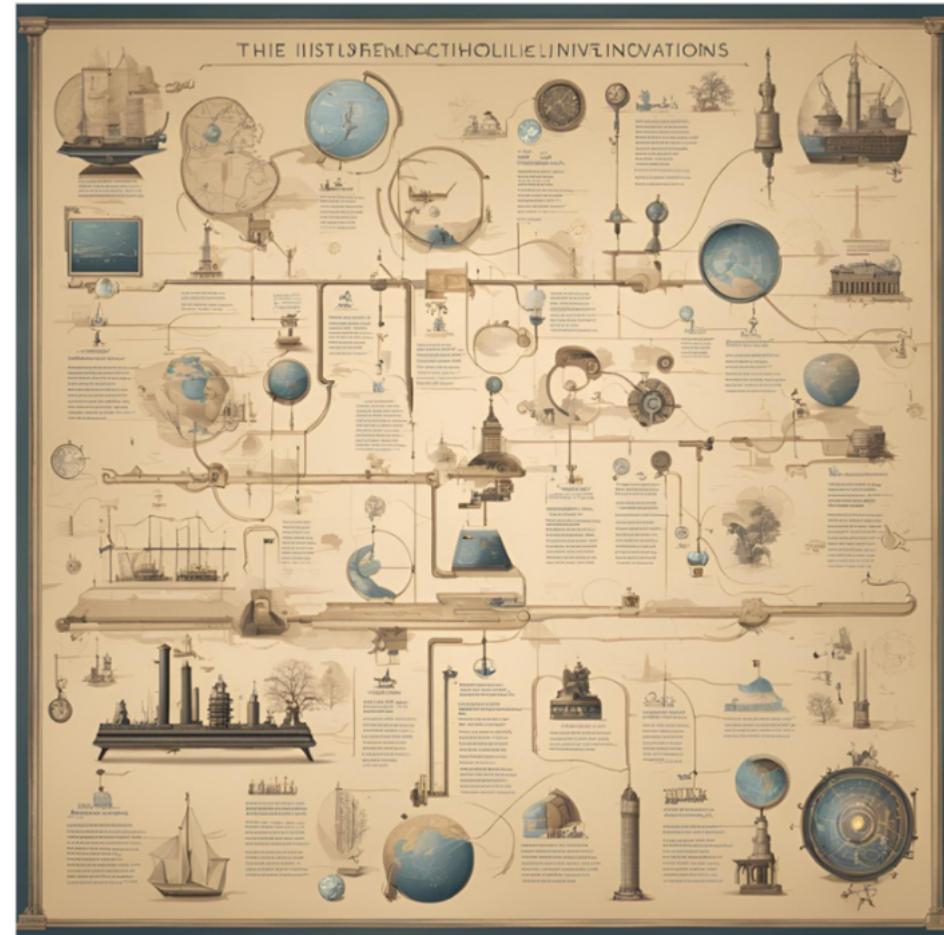
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Topics in STS

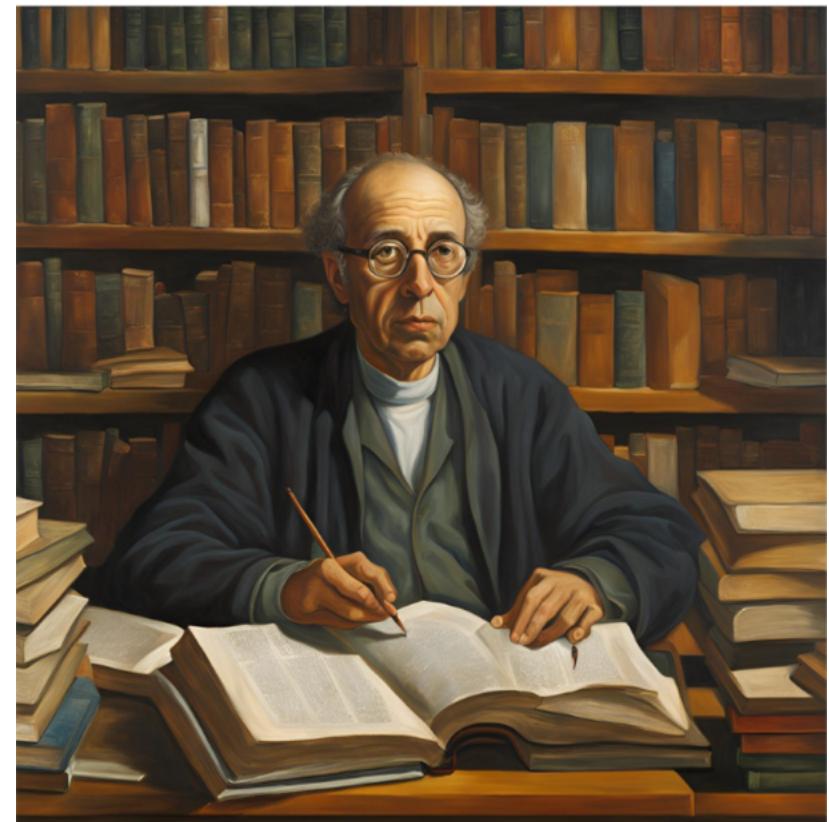
- History and philosophy of science
- Public understanding of science and technology
- Ethics of artificial intelligence and biotechnology
- Power dynamics in scientific research and innovation
- Social implications of emerging technologies

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Key Figures and Concepts

- **Thomas Kuhn:** Paradigm shifts in science
- **Bruno Latour:** Actor-Network Theory
- **Sheila Jasanoff:** Co-production of science and society
- **Donna Haraway:** Feminist perspectives on technology



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Why STS Matters

- Helps us critically evaluate scientific and technological advancements
- Informs ethical and sustainable innovation
- Promotes equitable access to technology
- Guides policy-making for societal benefit



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Conclusion

- STS bridges the gap between science, technology, and society
- Encourages critical thinking about the role of innovation in shaping the future
- Prepares us to address global challenges responsibly



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Questions?

- Thank you for your attention!
- Feel free to ask any questions



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Evaluation Policy?

✗ Undergrad Course Evaluation

Evaluation Components

The final grade for this course will be based on the following components:

1. Participation (10-15%)

- Includes attendance, engagement in class discussions, and group activities.
- Rubric: Quality of contributions, frequency of participation, and respect for peers.

2. Assignments (20-30%)

- A series of individual or group tasks that assess understanding of course material.
- Rubric: Relevance, accuracy, creativity, and adherence to submission guidelines.

3. Quizzes (10-20%)

- Short, periodic quizzes to assess comprehension of key concepts.
- May include multiple-choice, short-answer, or problem-solving questions.

4. Midterm Examination (20-30%)

- A comprehensive assessment covering material from the first half of the course.
- Rubric: Correctness, clarity, and depth of answers.

✗ Undergrad Course Evaluation

5. Final Project or Exam (25-40%)

- Option A: A cumulative final exam testing overall knowledge of the course.
- Option B: A capstone project or research paper demonstrating critical thinking and application.
- Rubric: Depth of analysis, originality, presentation, and relevance to course objectives.

Grading Scale

Grades will be assigned as follows:

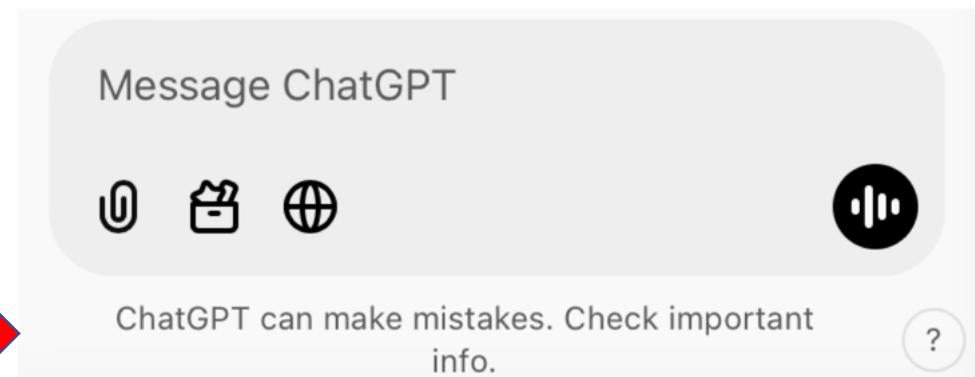
Grade	Percentage Range
A	90-100%
B	80-89%
C	70-79%
D	60-69%
F	Below 60%

Evaluation Policy?

Undergrad Course Evaluation

Attendance Policy

- Attendance is expected at all class sessions.
 - Missing more than **20% of classes** without valid justification may result in a failing grade.
-



Does STS Matter?

- So what do you think @ this ChatGPT+Canva experiment?

Artificial intelligence
(AI)

'Godfather of AI' shortens odds of the technology wiping out humanity over next 30 years

Geoffrey Hinton says there is 10% to 20% chance AI will lead to human extinction in three decades, as change moves fast

• 'We need dramatic changes': is societal collapse inevitable?



Dan Milmo Global technology editor

Fri 27 Dec 2024 15.50 GMT

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Source: <https://www.theguardian.com/>

The British-Canadian computer scientist often touted as a “godfather” of artificial intelligence has shortened the odds of AI wiping out humanity over the next three decades, warning the pace of change in the technology is “much faster” than expected.

Prof Geoffrey Hinton, who this year was awarded the Nobel prize in physics for his work in AI, said there was a “10% to 20%” chance that AI would lead to human extinction within the next three decades.

Previously Hinton had said there was a 10% chance of the technology triggering a catastrophic outcome for humanity.

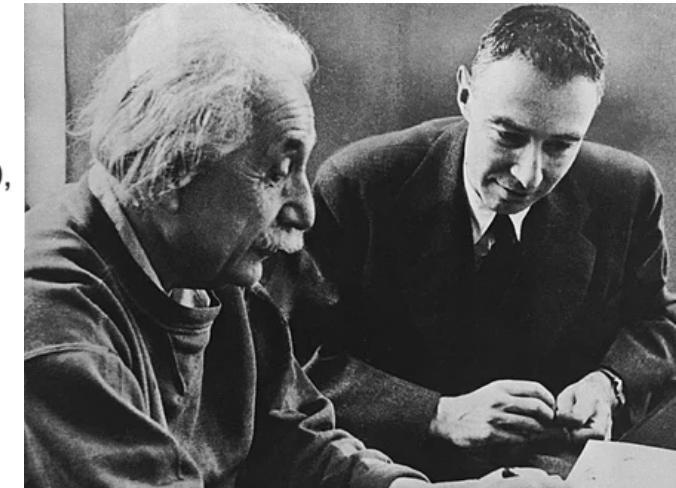
Asked on BBC Radio 4’s Today programme if he had changed his analysis of a potential AI apocalypse and the one in 10 chance of it happening, he said: “Not really, 10% to 20.”

Hinton’s estimate prompted Today’s guest editor, the former chancellor Sajid Javid, to say “you’re going up”, to which Hinton replied: “If anything. You see, we’ve never had to deal with things more intelligent than ourselves before.”

Einstein and Oppenheimer - Does STS Matter?

against his pacifist principles.^[157] In 1954, a year before his death, Einstein said to his old friend, [Linus Pauling](#), "I made one great mistake in my life—when I signed the letter to President Roosevelt recommending that atom bombs be made; but there was some justification—the danger that the Germans would make them ..."^[158] In 1955, Einstein and ten other intellectuals and scientists, including British philosopher [Bertrand Russell](#), signed a manifesto highlighting the danger of nuclear weapons.^[159] In 1960 Einstein was included posthumously as a charter member of the [World Academy of Art and Science](#) (WAAS),^[160] an organization founded by distinguished scientists and intellectuals who committed themselves to the responsible and ethical advances of science, particularly in light of the development of nuclear weapons.

Oppenheimer was increasingly concerned about the danger that scientific inventions could pose to humanity. He joined with [Albert Einstein](#), [Bertrand Russell](#), [Joseph Rotblat](#), and other eminent scientists and academics to establish what would eventually, in 1960, become the [World Academy of Art and Science](#). Significantly, after his public humiliation, he did not sign the major open protests



Course Logistics & Evaluation Policy

- Refer to the course note (Moodle)
- DX grade will be enforced. Bonus marks for above avg. attendance.
- Evaluation - Individual presentations (8 marks); group project presentation & report (12 marks); mid-semester examination (30 marks); end-semester examination (50 marks).
- The grading would be relative, subject to moderation. Below 40 is a clear fail (FR).
- Potential project topics – gender and ideology of merit, democracy and expertise, biotechnology and agriculture, big data and society, AI and society/democracy, medical genomics and ethics etc.

Course Logistics & Evaluation Policy

- Refer to the course note (Moodle)
- Students will be awarded up to 5 bonus marks over and above course total (100 marks) for above average attendance (5 marks for > 95%, 3marks for > 90%, 2 mark for >85%, 1 mark for >80%).
- Students with less than 80% attendance will not be permitted to write the end-semester exam and would be awarded DX grade. In exceptional case, at the instructor's discretion, you might be permitted to write the exam but with grade down penalty.
- If you find the evaluation policy as strict and unjust, please read an IITB Insight article here (<https://insightiitb.org/volume-10-3-whats-wrong-with-us/>) and drop down for a chat during my office hours.

Thank you