

The Hong Kong University of Science and Technology

PPOL 5230: Technology, Innovation and Public Policy

Tuesdays, 9:30am – 12:20pm

Room 2, 30/F, Millenium Tower (Kwun Tong)

3 credits

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Course Description

In recent years, the “innovation capacity” of nations has become akin to a competitive sport. Nations invest significant resources in supporting science, technology, and innovation, with the argument that these investments will improve the well-being of citizens. Traditionally, the need for “innovation policy” has been linked to economic development and growth goals, often at a national or regional level – and something that requires some amount of public sector involvement to realize. However, in recent years, the perspective has broadened, to consider innovation that is both highly localized and transnational, with goals that include a broader array of social benefits.

At the heart of the entire discussion of innovation is a set of ideas about “technology,” its evolution and its management. Just as conceptions of the innovation process have evolved in the world of policy, so have our ways of thinking about technology, its role in society, its benefits, and its costs. Additionally, technology and innovation as concepts, practices, and tangible artefacts in our world are closely tied into a broader discussion of science, and its role in society.

In this course, we will work through these concepts, in the abstract and practically. In Part 1, the course will start with an introduction to the ways that we understand, define and measure technology and innovation. This includes looking back historically at how specific technologies, and the innovation systems that produce and distribute them, have been entwined with public policy. In Part 2 of the course, we will look more closely at the policy problems faced by governments – including how to “get more of the good stuff, and also manage the bad stuff.” We will look specifically at two different policy goals – economic development, and social development – and how policy tools may (or may not) differ. Finally, in Part 3 we will bring our focus to our own region, and analyse Hong Kong’s approach, within the context of the GBA – including goals, and policy approaches.

Throughout the course, we will take a comparative perspective, drawing on lessons both close to Hong Kong and far away (geographically, culturally and temporally). This is a rich field of study, and we will draw on both cutting edge scholarship, but also many of the foundational works in the field that still inform both theory and practice (because, as we will learn, we tend to bias new, but that is not always a warranted perspective). We will also take a critical lens on the very activity of our focus – throughout the course, we will ask ourselves to what degree a focus on innovation is warranted, and the costs and trade-offs that are sometimes easy to miss.

Intended Learning Outcomes (ILOs)

On successful completion of the course, students will be able to:

1. Describe the history of technology and innovation policy (post-war to the present) and the 'science-technology-innovation society settlement'.
2. Compare systems for promoting innovation and the impacts of science and technology on society's development.
3. Evaluate how science impacts on policy and how research is utilized.
4. Assess how knowledge systems and policies as system interventions.
5. Appraise the complex relationship between science, technology, innovation and public policy.

Topics and Schedule

Week	Date	Topic
1	1-Sep	Introduction: Innovation, Technology and Development
2	8-Sep	The Technology Lifecycle (bottom up, firms, micro); architecture/modularity; process and use
3	15-Sep	<i>Poster Working Session</i>
4	22-Sep	The Innovation System (Top Down, Institutions); Triple helix; Science Policy
5	29-Sep	Historical Perspectives 1: UK, Germany, the US
6	6-Oct	Historical Perspectives 2: East Asian Miracles; Hong Kong; China
7	13-Oct	Getting more innovation! Barriers to Innovation: Policy Tools; Measuring Innovation
8	20-Oct	Measuring Innovation (ctd)
9	27-Oct	Wait, not that! Technology, Innovation and Society: Policy Problems and Social Issues Pt 1
10	3-Nov	Wait, not that! Technology, Innovation and Society: Policy Problems and Social Issues Pt 2
11	10-Nov	Contemporary Innovation Strategies: Mission Innovation and Social Goals
12	17-Nov	The Future of Innovation in Hong Kong
13	24-Nov	Policy Design Competition

Assessment and Grading

This course will be assessed using criterion-referencing and grades will not be assigned using a curve. Detailed rubrics for each assignment will be provided on Canvas, outlining the criteria used for evaluation. A general description is provided below.

Assessments:

Assessment Task	Contribution to Overall Course grade (%)	Due date
Discussion Posts	15%	Throughout (choose 5)
In-class Participation	10%	Throughout
Technology evolution poster	15%	27/09/2026
Innovation strategy group presentation	10%	Throughout
Comparative Innovation System Memo	15%	01/11/2026
Policy Design Competition (group)	10%	24/11/2026
Innovation Policy "Brief" (group)	25%	13/12/2026**

* Assessment marks for individual assessed tasks will be released within two weeks of the due date.

** The Final Policy Brief deadline is tentative, depending on PPOL exam schedule

Grading Rubrics

Detailed rubrics for each assignment will be provided. These rubrics clearly outline the criteria used for evaluation. Students can refer to these rubrics to understand how their work will be assessed.

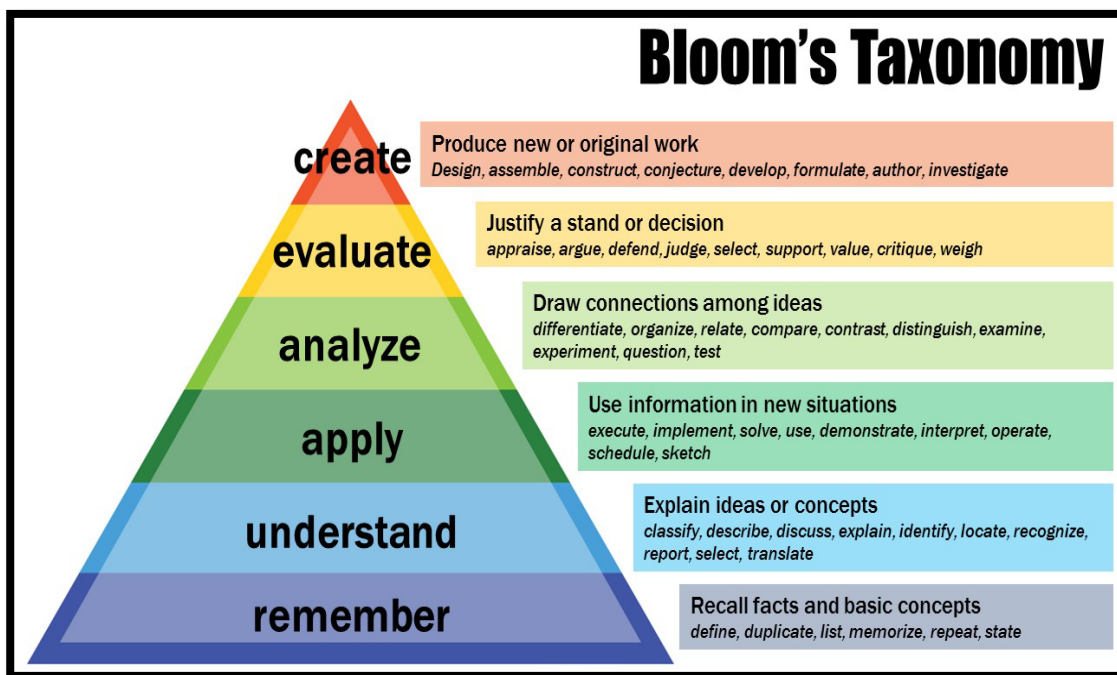
LATE HOMEWORK POLICY

Note: Late assignments will incur a penalty for each day they are late, except in cases where extensions have been granted by the instructor. Except for emergencies, extensions are much more likely to be granted when they are requested well in advance, with strong justification. If you are struggling to complete your coursework, please come discuss with us sooner rather than later, as it is always easier to adjust things before there is a crisis.

Final Grade Descriptors:

Grades	Short Description	Elaboration on subject grading description
A	Excellent Performance	Demonstrates a comprehensive grasp of subject matter, expertise in problem-solving, and significant creativity in thinking. In group work, exhibits a high capacity for scholarship and collaboration, going beyond core requirements to achieve learning goals. Working consistently at the top of Bloom's taxonomy: create, evaluate, analyze, apply...
B	Good Performance	Shows good knowledge and understanding of the main subject matter, competence in problem-solving, and the ability to analyze and evaluate issues. In group work, displays high motivation to learn and the ability to work effectively with others. Working upwards in Bloom's taxonomy: understand, apply, evaluate, analyze; may show creativity on occasion but not

		consistently; may have some minor issues with understanding or application of concepts
C	Satisfactory Performance	Possesses adequate knowledge of core subject matter, competence in dealing with familiar problems, and some capacity for analysis and critical thinking. Shows persistence and effort to achieve broadly defined learning goals. Working at the foundation of Bloom's taxonomy: remember, understand, apply; can have some errors of understanding and trouble with application or analysis.
F	Fail	Demonstrates insufficient understanding of the subject matter and lacks the necessary problem-solving skills. Shows limited ability to think critically or analytically and exhibits minimal effort towards achieving learning goals. Does not meet the threshold requirements for professional practice or development in the discipline. Unable to move beyond basics of Bloom's taxonomy without significant errors: remember, understand.



EXPECTATIONS:

This is an elective course for MPM and MPP students. By this point in your university career, I expect that you are responsible, independent students. At the same time, the topic matter (or most of it) will be new to the majority of you. This can mean a heavy load at times. Attendance is mandatory, and the expectation is that you will do the readings for each session before the class. Be ready to discuss – this is supposed to be fun!

The reason that it is so important to do the readings and class assignments is that this course is only as good as what you each are willing to put into it. Our sessions will consist of some lecture to start, followed by a variety of interactive activities and/or cases. These activities will only work well if students are prepared, and

come to class willing to engage in fruitful discussions. This is not a brain-transfer from the instructor to the classroom. Public policy is a cooperative, interdisciplinary endeavour, and working through the material together is as much an element of the course as the subject matter itself. The structure of the course gives multiple ways for students to contribute, orally and in writing. But working on oral skills is an important element of the class, and the expectation is that all students will contribute to the discussions.

At HKUST, we have a wonderful diversity of students. They bring with them a wealth of perspectives and experiences. So while vigorous discussion is encouraged, disrespect, inside of the classroom or out, will not be tolerated. We will work under Chatham House rules- what is said in the classroom stays in the classroom. Furthermore, under no circumstances will any student resort to personal attacks, however dry or witty. Any disrespectful or disruptive students will be asked to leave the class.

Course AI Policy

In general, the use of generative AI in this class should be limited to programs to help you improve your grammar/writing (i.e. Grammarly). For specific assignments, we will clarify the policy and procedures and uses of generative AI for aiding you in brainstorming or creating initial drafts of work, or use in graphic design. **We also ask that you to NOT use translation software to generate your work** (even with recent advances in accuracy, these often undermine the quality of your organization and argument).

Use of AI for live translation and transcription; recording of class: This is strictly forbidden, unless you have specific permission from your Prof Matus. There are a number of privacy issues, and not only does it negatively impact your own language learning, but it undermines free discussion and exchange of ideas. If you need recording or transcription for DOCUMENTED SEN needs, please discuss with Prof Matus, who will direct you to the appropriate channels to make arrangements.

Discussion posts: We expect these to be purely **your* own thoughts*, and they are not meant to be highly polished. I do not care what Chat-GPT (or any other LLMs) think about the questions – I am looking for your thoughts, questions, ideas, and challenges. These are starting points for class discussions, so we expect that you would be able to expand on what you write in discussions with your colleagues.

Use of AI for Producing Readings Summaries/Notes: We are aware that there are programs out there that will help to create a summary of a document, including course readings. This can be a very useful addition to your study routine. However, the reality is that while these programs can often capture many of the major points, they also omit many more subtle points, or can miss elements that are specifically important to our course. Even if you do choose to use these aids as a supplement, we expect that you have also been doing the readings yourself, and are able to pick up on subtle but important points.

Communication and Feedback

Assessment marks for individual assessed tasks will be communicated via Canvas within two weeks of submission. Feedback on assignments will include specific details, e.g., strengths, and areas for improvement. Please note, our comments are meant to be informative, and demonstrate why your work fell into a certain range in the rubric (as opposed to a list of places where you “lost points.”) Students who have further questions about the feedback including marks should consult the instructor within five working days after the feedback is received.

Required Texts and Materials

There are no required readings for this course. Weekly readings will be posted on Canvas well in advance.

Required vs Supplementary Readings

There are many many more fabulous articles than I can expect you to read in a week. I will indicate on canvas which readings are required, which are strongly recommended, and which are there for those who are interested in reading more. When I teach, I may reference some works that were not required (i.e. from the supplemental/optional list), so that you have access to the key ideas or findings. Don't panic when this happens! I will not hold you responsible for things that were not clearly required.

Reading Strategies

This course has no exams. What does that mean? It means you are reading to support our in-class discussions and activities – not to memorize. So when you approach a reading, try not to get stuck trying to memorize everything. If you get stuck – make a note on what you find confusing – and then move on.

Take notes! For any reading, try to synthesize what you have read. What were the key ideas or concepts? What examples were used, or what evidence supports this? Does it make sense? Are there any shortcomings? Does it link to any other examples or experiences that you can think of? Does it support or contradict other things we have read or discussed in the class?

Academic Integrity

Students are expected to adhere to the university's academic integrity policy. Students are expected to uphold HKUST's Academic Honor Code and to maintain the highest standards of academic integrity. The University has zero tolerance of academic misconduct. Please refer to [Academic Integrity | HKUST – Academic Registry](#) for the University's definition of plagiarism and ways to avoid cheating and plagiarism.