

**MIDDLE EAST TECHNICAL UNIVERSITY**  
**Graduate School of Social Sciences**  
**Science and Technology Policy Studies**

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**Course Title:** STPS 545-Knowledge and Technology Transfer in Innovation Systems

**Description:** The transfer of technology and knowledge (KTT) between different stakeholders of innovation systems is an important policy issue, which requires public intervention. The main rationale behind this intervention is to address market failures dealing with incomplete markets for knowledge, technology and IP transfer, as well as systemic failures at regional, national and global systems of innovation which may be related not only to the institutional problems but also weak networking and linkages between different actors involved in the supply and demand of knowledge and technology. Policy instruments in this context aims to facilitate the KTT and their commercialization through a number of means such as supporting research and private sector interactions, developing innovative clusters, improving regulations to support IPR commercialization, promoting innovative public procurement, and funding start-ups and spin-offs.

The concept of KTT has become a central focal point in the enterprise system as well with the rise of the concept of open innovation. Open innovation is a new paradigm that assumes that firms can and should use external ideas as well as internal ideas and internal and external paths to market, as the firms look to advance their technology (Chesbrough, 2003). Although initially promoted as a business-driven phenomenon, open innovation is now a central point in KTT policies, as it requires firms to search and acquire know-how and IPR from universities, research institutions and other firms.

Increasingly there is a policy shift to promote KTT in innovation systems through public policy measures both at national and international levels. A large number of countries both in the developed and developing World now sees such measures as an important means to tackle the problems of underinvestment in R&D and innovation in the private sector and low levels of commercialization of research results at universities and public research institutions. It is also used as one of the most important tools to promote inclusive innovation, a concept has recently been brought into public policy focus.

Therefore, this course focuses on the concepts, history, approaches, challenges and recent trends around the topic of KTT within and between innovation systems, and aims to develop the knowledge and capabilities of the students around these issues. Topics to be considered include the theory and practice of KTT, new concepts around this area (such as open innovation, inclusive innovation, innovative procurement, third mission, etc.), its role within a national innovation system and S&TI policies, and design, implementation and evaluation of KTT programs.

**Outline:**

Week 1- Introduction and overview

Week 2- Knowledge and technology transfer as a policy issue

Week 3- Knowledge and technology transfer as a public intervention

Week 4- Theory and practice of knowledge and technology transfer

Week 5- Tools and methods in knowledge and technology transfer

Week 6- The process of knowledge and technology transfer

Week 7- The process of knowledge and technology transfer

Week 8- The third mission and university-based knowledge and technology transfer

Week 9- Open innovation and innovative procurement as facilitators of knowledge and technology transfer

Week 10- Inclusive innovation and its relation with knowledge and technology transfer

Week 15- Policies and programs promoting knowledge and technology transfer

Week 11- Program design for knowledge and technology transfer

Week 12- Implementing public programs

Week 13- Monitoring and evaluation aspects

Week 15- Designing an evaluation framework

Week 16- Future trends in knowledge and technology transfer