Course Information

- **Course Code**: 8310503
- **Course Section**: 1
- **Course Title**: ECONOMICS OF SCIENCE, TECHNOLOGY AND INNOVATION
- **Course Credit**: 3
- **Course ECTS**: 8.0
- **Course Catalog Description**: An introduction to political economy of science, technology, and policy. Basic concepts, alternative theories, and recent developments in the economics of technology and innovation. Characteristics of technological activity: patterns of technological activity and markets for technology. Comparative analyses of science and technology policies in industrial and developing countries, and the experience of NICs. Interactions between technology (policy) and society.
- **Prerequisites**: No prerequisites
- **Schedule**: Not available

Instructor Information

- **Name/Title**: Assoc.Prof.Dr. İBRAHİM SEMİH AKÇOMAK
- **Office Address**: MM Binası Kat:2 No:220
- **Email**: akcomak@metu.edu.tr
- **Personal Website**: http://users.metu.edu.tr/akcomak/
- **Social Media**: @semihakcomak
- **Office Phone**: 
- **Office Hours**: Mondays 14:00-17:00

Course Objectives

By the end of this course the students

- will be able to understand the complex as well as basic terminology and concepts in economics of science, technology and innovation
- will be able to critically analyse any reading material (to a certain extent journal articles as well) on STI
- will be able to understand and connect different perspectives when analysing STI related policy

Course Learning Outcomes

By the end of this course the students

- will understand the theoretical setting of main science, technology and policy concept
- will be able to analyse STI related documents under neo-classical and evolutionary perspectives
- will have a knowledge of STI terminology

Tentative Weekly Outline

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Relevant Reading</th>
<th>Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Concepts of Science, Technology and Innovation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Science, Technology and Knowledge</td>
<td></td>
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<tr>
<td>4</td>
<td>Lock-in and path-dependence</td>
<td></td>
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<tr>
<td>5</td>
<td>Schumpeter, entrepreneur and evolutionary economics</td>
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## Course Material(s) and Reading(s)

**Material(s)**

Reading list according to topics. The full list and more will be provided to students via google drive.

**Reading(s)**

**Introduction**


**Concepts of STI**


**Science, Technology and Knowledge**


**Lock-in and path-dependence**


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### PART II: INNOVATION AND GROWTH

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Relevant Reading</th>
<th>Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Diffusion of technology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Long-waves, Kondratieff waves, Technological Paradigms</td>
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</tr>
<tr>
<td>8</td>
<td>Midterm break</td>
<td>See the grading policy</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Mainstream: Solow and neo-classical growth</td>
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<tr>
<td>10</td>
<td>Technology and growth: endogenous technology</td>
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<tr>
<td>11</td>
<td>STI Policy Theory and Practice</td>
<td></td>
<td></td>
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<tr>
<td>12</td>
<td>Ethics</td>
<td></td>
<td></td>
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<tr>
<td>13</td>
<td>Ethics</td>
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<tr>
<td>14</td>
<td>Ethics</td>
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</tbody>
</table>
Schumpeter, entrepreneur and evolutionary economics


Diffusion of technology


Long-waves, Kondratieff waves

http://faculty.washington.edu/krumme/207/development/longwaves.html

MIDTERM BREAK

continued from other below.....

Other

Main stream: Solow and neo-classical growth


Technology and Growth: Endogenous growth?


PART III: SPECIAL TOPICS

System approaches to innovation


**Policy: Neo-classical versus evolutionary perspectives - theory and practice**

This session will be a brief introduction to two theories. The students are expect to bring policy tool examples to class and we will try to merge two taxonomies in to one in an interactive way.


### Assessment of Student Learning

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Dates or deadlines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midterm</td>
<td>8th week</td>
</tr>
<tr>
<td>Final</td>
<td>Final week</td>
</tr>
<tr>
<td>Homework</td>
<td>There could be 1 or 2 10-15 pts assignments</td>
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### Course Grading

<table>
<thead>
<tr>
<th>Deliverable</th>
<th>Grade Points</th>
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<tbody>
<tr>
<td>Midterm</td>
<td>40</td>
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<tr>
<td>Homework</td>
<td>10</td>
</tr>
<tr>
<td>Final</td>
<td>40</td>
</tr>
<tr>
<td>Participation</td>
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</tr>
<tr>
<td>Total</td>
<td>100</td>
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