Project summary

Title of Project: National University Reform Plan 2013
Program: Enhancement of Education, Research and Governance
Duration: Five years

Abstract

The aim of this plan is to reform Kyushu Institute of Technology [here after Kyutech], so as to maintain and improve competitiveness, thus distinguishing itself as a National University. Since 2012, Ministry of Education, Culture, Sports, Science and Technology [here after MEXT] initiated the National University Reform Plan with Kyutech being one of the seven universities to receive the grant. MEXT, in 2013, started implementing the plan (see reference) so as to enhance the quality of university education, specifically through developing the educational program for the 21st Century Skills, and improving the global-ready standards for our graduates. This project, ‘Global Competency for Engineers’ [GCE] is focused on setting up a new curriculum including global general education based on social and human sciences, as well as expanding the number of Kyutech-assured Study/Research/Work Abroad programs.

Objectives [GCE]

The overall objective for [GCE] is to begin and then improve the Kyutech Global Ready standard for graduating, both for undergraduate and for postgraduate programs. For GCE, a new curriculum with five main learning outcomes have been determined, not only for core courses but also for the Study/Research/Work Abroad program. These five learning outcomes are considered as the 21st Century Skills, along with the OECD key competencies and JABEE (a member of the Washington Accord) standard.

Acceptance of diverse cultures
Communicative skills
Skills for autonomous learning
Problem-setting and solving skills
Design skills
## Specific objectives

1. Building realistic and relevant Global Ready standards for Kyutech Students for graduating.

### Global Competency for Engineers

<table>
<thead>
<tr>
<th>Level</th>
<th>Key competency</th>
<th>BASIC (JABEE international standard level)</th>
<th>SEMI-ADVANCED (JABEE international standard level + α)</th>
<th>ADVANCED</th>
<th>MASTERLY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Can display competence as a member in multicultural or multinational/ transnational projects</td>
<td>Can display competence as a core member in multicultural or multinational/ transnational projects</td>
<td>Can display competence thoroughly as a leader in multicultural or multinational/ transnational projects</td>
<td>Can play a role in coordination and negotiation in international negotiations related to global projects</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acquire through a four-year undergraduate course</td>
<td>Acquire through undergraduate and graduate courses</td>
<td>Acquire through the GE Programs in undergraduate and graduate courses</td>
<td>Acquire through gaining high marks in every outcome of GCE</td>
</tr>
</tbody>
</table>

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Acceptance of diverse cultures</td>
<td>Respect and accept the identities of members of multicultural or transnational projects</td>
<td>Accept identities of members by understanding the diverse backgrounds of culture</td>
<td>Promote the vision of a project team consisting of diverse cultures</td>
<td>Understands the political, economic, and social conditions of the international community and target countries, and can understand the interests and opinions among various nationalities.</td>
</tr>
<tr>
<td>2</td>
<td>Communicative skills</td>
<td>Use effectively relevant technical terms and skills needed for engineers in English, and communicate through a translator or coordinator</td>
<td>Can communicate on her/his own with dictionaries</td>
<td>Promote the vision and decision making of team members by using Japanese, English, or various languages</td>
<td>Actively engages in negotiation and coordination in international negotiations, and is able to respond effectively to both pragmatic and sociolinguistic issues</td>
</tr>
<tr>
<td>3</td>
<td>Skills for autonomous learning</td>
<td>Learns additional knowledge autonomously apart from basic engineering knowledge</td>
<td>Can search, learn, and utilize necessary information, in addition, to knowledge about engineering</td>
<td>Lead international projects by searching and learning appropriate technology and information as necessary</td>
<td>Propose and implement the best measures for the global benefit from the viewpoint of engineers</td>
</tr>
<tr>
<td>4</td>
<td>Problem-setting and solving skills</td>
<td>Find problems and solutions with team members in given sets of international circumstances</td>
<td>Understand the given circumstances and attempt to build consensus for solutions</td>
<td>Assess the limiting factors in international projects and discover the best directions</td>
<td>Discover the problems in negotiations between countries with different legal systems or cultures and find points of compromise</td>
</tr>
<tr>
<td>5</td>
<td>Design skills</td>
<td>Develop products or systems as a member of multinational/transnational teams seeing the conditions surrounding projects</td>
<td>Develop products or systems as a member of multinational/transnational teams with the comprehension of the conditions surrounding projects</td>
<td>Develop innovative products or systems by incorporating the opinions of multinational/transnational team members</td>
<td>Develop the products or systems that have universal values for human society and promote global expansion of such products or systems</td>
</tr>
</tbody>
</table>
### Specific objectives

2. Developing the tools for the assessment of GCE with an e-portfolio system with the specific learning outcomes.

#### Learning Outcomes

<table>
<thead>
<tr>
<th>Acceptance of diverse cultures</th>
<th>1</th>
<th>Can understand common challenges for a sustainable world</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding of sustainability</td>
<td>2</td>
<td>Can understand cultural diversity in the target area</td>
</tr>
<tr>
<td>Understanding of global relations</td>
<td>3</td>
<td>Can understand the relations between the dispatched area and Japan or the world</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Communicative skills</th>
<th>1</th>
<th>Can adapt to cross-cultural communication with an understanding of adequacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self awareness</td>
<td>2</td>
<td>Can have empathy with and respond to a different culture</td>
</tr>
<tr>
<td>Empathy</td>
<td>3</td>
<td>Can find a point of compromise by balancing other people's opinions and own opinions</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Problem setting and solving skills</th>
<th>1</th>
<th>Can collect and judge information through media and literature, and analyze them for solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information collection</td>
<td>2</td>
<td>Can jointly work with the people with diverse backgrounds on common challenges</td>
</tr>
<tr>
<td>Consensus building</td>
<td>3</td>
<td>Can express one's own and other people's views, so as to find optimum agreement</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Skills for autonomous learning</th>
<th>1</th>
<th>Can learn on one's own to acquire knowledge necessary for studying abroad</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voluntary learning</td>
<td>2</td>
<td>Can organize learning tasks after returning from studying abroad toward a future career, and life-long learning</td>
</tr>
<tr>
<td>Continuous learning</td>
<td>3</td>
<td>Can continue learning to objectively understand one's own language level and to develop language skills further</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Global orientation</th>
<th>1</th>
<th>Can look at oneself and improve one's own self image and self awareness in a globalized world</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self awareness and self understanding</td>
<td>2</td>
<td>Can have an open attitude for diverse cultures and opinions</td>
</tr>
<tr>
<td>Respect of and tolerance for diverse cultures</td>
<td>3</td>
<td>Can have a self awareness in a globalized environment and continue to learn to achieve relevant goals and dreams</td>
</tr>
</tbody>
</table>

3. Developing the global general education classes, specially the Liberal Arts (social sciences and humanities) and pre-session modules for study abroad programs.
Enhancing the current Study Abroad/Work Abroad/Research Abroad programs by clarifying and establishing a standard module for both pre-sessions and follow-up learning

**Study Abroad pre-session module**

**STEP 1**
First guidance
- Self Awareness
  - Adequacy test
  - Pre-questionnaire

**STEP 2**
Introductory lectures
- Global Cultures
  - Classes on global on various issues
  - Joint work with foreign students
  - Lectures from those who have studies abroad
  - Special lectures
  - Understanding of the culture of the targeted area
  - Seminars in English, etc.

**STEP 3**
Safety guidance

**STEP 4**
Follow-up learning
- Risk Management and Safety Measures
  - Lectures on risk management and safety measures

**STEP 5**
Achievement report
- Assessment of Learning Outcomes
  - Survey for learning outcomes
  - Follow-up questionnaire
- Report of Learning Outcomes
  - Presentations of accomplishments

Support the peer education between Japanese students and international students in and out of Kyutech
6 years course

Global Engineering Course (GE Course)

Cultivating a global mindset for students' future career as Global Engineers through the Global Engineering Course

4 years undergraduate course

2 years master's course

Classes
Global-Liberal Arts Language Curriculum Specialized GCE Lectures

Experience
Study Abroad Work Abroad Research Abroad

Certificate

STUDY ABROAD
(Long Period)

Application for GE course

Pre-laboratory assignment

STUDY ABROAD
(Short Period)

Guidance

Orientation

Quarter System

The 1st term
The 2nd term
The 3rd term
The 4th term

The 1st term
The 2nd term
The 3rd term
The 4th term

School of Engineering

School of Computer Science and Systems Engineering

Example

Malaysia

MSSC at UPM

(first year)

(second year)

(third year)
(fourth year)

The 1st term

The 2nd term

The 3rd term

The 4th term

(first year)

The 1st term

The 2nd term

The 3rd term

The 4th term

(second year)

Enter graduate course

Laboratory assignment

Entrance examination

Global Ready

Mastery

Graduate School of Engineering

Graduate School of Computer Science and Systems Engineering

Graduate School of Life Science and Systems Engineering

Global Competency for Engineers