How to develop UNISEC Student Organization (UNISON) in the Philippines?
Philippines
1. Adelaida C. Duran -- Kyushu Institute of Technology
2. Kim M. Herrera -- International Space University, University of Strasbourg France

Japan
1. Masahiro Furumuto -- Kyushu University
2. Shota Yamada -- Nihon University
3. Arifumi Koinuma -- University of Tokyo Metropolitan College of Industrial Technology
How to develop UNISEC Student Organization (UNISON) in the Philippines?

CURRENT Situation:

1. Space Education/Engineering/Science/Technology?
2. Weaknesses → Challenges
2. Strengths → Opportunities
   - Human Resource?
   - Technical Capability?
   - System and Facilities?
   - Existing National Plans and Program?
Do you have Space Agency in the Philippines?

Weakness : NO Space Agency
Strength : Department of Science and Technology (DOST), NAMRIA, NDRRMC and several agencies doing operational and applied space science and technology.

Current status : Bill has already been drafted and submitted to the Congress (2012) for the creation of Philippine Space Agency (PSA)
Do you have Space Education in the Philippines?

Weakness: NO official Space Engineering Course
Strength: Implicitly included in the curriculum of Science and other Engineering Education

Current status: -- Strong human resource in the field of Research and Engineering (both academic & industry)
-- Academe is moving towards the establishment of Space Engineering Education
Engineering Research and Development Technology (ERDT) Consortium

ERDT CONSORTIUM

University of the Philippines Diliman
Ateneo de Manila University
Central Luzon State University
De La Salle University
Mapua Institute of Technology
Mindanao State University-Iligan Institute of Technology
University of San Carlos
University of the Philippines Los Baños

Source: Joel S. Marciano Jr., Professor, UP EEE Institute
Human Resource and Technical Capability?

Weakness : NO Space Engineers
Strength : Strong human resource in the field of Aeronautics and Engineering

Current status : Enough resources and teaching faculties.
Increasing numbers in graduate students
Increasing outputs resulted from university-based research and study
## University of the Philippines – Diliman
### College of Engineering
#### Departments and Institutes

<table>
<thead>
<tr>
<th>Chemical Engineering</th>
<th>Geodetic Engineering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civil Engineering</td>
<td>Industrial Engineering &amp; Operations Research</td>
</tr>
<tr>
<td>Computer Science</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>Electrical &amp; Electronics Engineering</td>
<td>Mining, Metallurgy &amp; Materials Engineering</td>
</tr>
<tr>
<td>Energy Engineering</td>
<td>Environmental Engineering</td>
</tr>
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</table>

Source: Joel S. Marciano Jr., Professor, UP EEE Institute
# University of the Philippines – Diliman College of Engineering Faculty Profile

<table>
<thead>
<tr>
<th>Departments/Institutes</th>
<th>As of 2nd Semester 2012</th>
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<tbody>
<tr>
<td></td>
<td>PhD</td>
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<td>Chemical Engineering</td>
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<tr>
<td>Civil Engineering</td>
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<td>Computer Science</td>
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<td>Geodetic Engineering</td>
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<td>Mechanical Engineering</td>
<td>3</td>
</tr>
<tr>
<td>Mining, Metallurgical and Materials Engineering</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>66</strong></td>
</tr>
<tr>
<td><strong>Percentage</strong></td>
<td><strong>28%</strong></td>
</tr>
</tbody>
</table>

**Faculty Profile**

The UP-EEEI has the largest number and concentration of advanced degree holders in electrical, electronics and computer engineering in any institution – academic, industry or government – in the Philippines.

We have embarked on an aggressive faculty development plan that will enable us to reach an “all-PhD” faculty by 2025.

Source: Joel S. Marciano Jr., Professor, UP EEE Institute
System and Facilities?

Weakness : NO Testing Facilities (vacuum chamber, etc.)
Strength : Numerous research laboratories in different universities
Research laboratories
http://www.eee.upd.edu.ph/research/

- Address a broad spectrum
  - Instrumentation
  - Robotics and automation
  - Microelectronics
  - Digital signal processing
  - Power electronics
  - Wireless
  - Electric power
  - Software applications
  - Renewable energy

Source: Joel S. Marciano Jr., Professor, UP EEE Institute
Existing National Plans and Programs?

Weakness: Early-age of research and development

Strength: The Philippines government is now moving into space development

Current Status: Department of Science and Technology (DOST)
PHL-MICROSAT Project

National Science and Technology Plan (NSTP)
Medium Term Philippine Development Plan (MTPDP)
Opportunities:

DOST’s PHL-MICROSAT Project

To build, launch and effectively utilize micro-satellite technology for multi-spectral, high precision earth observation – by Filipino engineers and scientists working with Japanese counterparts.

- MicroSat Research Facility
- Ground Receiving Station
Opportunities: National S&T Human Resource Development thru Engineering Research and Development for Technology (ERDT)

✓ Make Engineering Education accessible thru scholarships and training programmes.
• Can we develop UNISEC Student Organization (UNISON) in the Philippines?

→ YES!
Suggestions – based from Japan experience

1. Utilize existing university group or clubs in several universities
   → as entry point to promote space

2. Launch social media campaign
   → Kim Herrera in-charge

3. CLTP activities
   → thru UNISEC focal point - person attended such activities

4. Continuing capacity building
   → learn experience from others
1. Promote awareness about UNISEC and UNISON
   → To talk with the right people
   - academic engineering institutions and agencies working in space-related activities and programmes

2. Establish local chapter for UNISEC and UNISON Philippines
   → Encourage joining UNISEC
   → Promote and strengthen international collaborations
Thank you very much!