The Development of Quality Assurance Agencies and the Trends in QA

The Trends & Innovation in QA in Response to the Post-Pandemic Era

Prof. Liang-Jenq Leu
CEO, IEET
Professor, Civil Engineering Dept. National Taiwan University
President, Taiwan Construction Research Institute
President, Taiwan Society for Circular Economy
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Outlines

IEET, an Introduction

International Perspectives on QA in the Post Pandemic Era

Looking into the Future
Outlines

IEET, an Introduction

International Perspectives on QA in the Post Pandemic Era

Looking into the Future
IEET, a QA Agency
20 Years and Beyond~

2003 Establishment

2004 EAC Accreditation

2007 Washington Accord Signatory

2009 Seoul Accord Signatory

2011 CAC, TAC, AAC Accreditation

2014 Sydney Accord Signatory DAC Accreditation

2020 Canberra Accord Signatory
## 5 Accreditation Commissions

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Engineering Education</th>
<th>Computing Education</th>
<th>Technology Education</th>
<th>Architectural Education</th>
<th>Design Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree</td>
<td>Bachelor's Degree or above</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professional Title/ Licensure</td>
<td>Professional Engineer 4-year Degree Program</td>
<td>Computing or IT-related field Professional Engineer 4-year Degree Program</td>
<td>Engineering Technologist (TAC) 4-year Degree Program</td>
<td>Technologist (GTAC) 4-year Degree Program</td>
<td>Architect 5-year Degree Program</td>
</tr>
<tr>
<td>International Agreement</td>
<td>Washington Accord signatory Since 2007</td>
<td>Seoul Accord signatory Since 2009</td>
<td>Sydney Accord signatory Since 2014</td>
<td>N/A</td>
<td>Canberra Accord signatory Since 2020</td>
</tr>
</tbody>
</table>
OBE Accreditation

Student-centered
Outcomes-based
Evidence-oriented
COI-aimed

What to Learn and why?

Teach what and how?

Students learned? How do you know it?
No. of HEI Participate in IEET Accreditation
Taiwan (N=84)、Mainland China (N=79)
No. of Accredited Programs
Taiwan (N=593)、Mainland China (N=246)

- EAC 526 (62.7%)
- TAC 156 (18.6%)
- GTAC 43 (5.1%)
- CAC 67 (8.0%)
- AAC 12 (1.4%)
- DAC 35 (4.2%)

Total: 936
Graduates in Taiwan Recognized by IEET (About 652,000)

<table>
<thead>
<tr>
<th>Degree</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor's</td>
<td>471,822</td>
<td>72.3%</td>
</tr>
<tr>
<td>Master's</td>
<td>167,186</td>
<td>25.6%</td>
</tr>
<tr>
<td>PhD</td>
<td>12,683</td>
<td>1.9%</td>
</tr>
<tr>
<td>Associate Degree</td>
<td>694</td>
<td>0.1%</td>
</tr>
</tbody>
</table>
Serve on Intl Accord Executive Committee

- Washington Accord Chair (Prof. Andrew Wo)
- Sydney Accord Deputy Chair (Dr. Mandy Liu)

Recent Intl Accord Reviews

- 2022 Sydney Accord Review Team Chair (Prof. LJ Leu-Review of Australia)
- 2021 APEC Engineer Review Team Chair (Prof. LJ Leu-Review of Indonesia)
- 2018 Washington Accord Review Team Member (Dr. Mandy Liu-Review of Mexico)
- 2018 Sydney/Dublin Accord Review Team Chair (Prof. LJ Leu-Review of S. Africa)
- 2018 APEC Engineer Review Team Chair (Prof. LJ Leu-Review of Peru)
IEET is Mentoring…

Myanmar/
Myanmar Engineering Council
Washington Accord

Thailand/
Council of Engineers Thailand
Washington Accord

Saudi Arabia/
ETEC
Seoul Accord
IEET, an Introduction

International Perspectives on QA in the Post Pandemic Era

Looking into the Future

Maybe… the world we are in… needs not be defined just by pre or post pandemic, but by an array of challenges and opportunities, including the call for sustainability and new technologies… COVID simply expedites what eventually would be happening…
Engineering Education Must Transform in the Face of the UN SDGs

ACT NOW
Engineering Education MUST CHANGE
For tomorrow’s engineers to have the RIGHT knowledge and skills…

Establishing a society that copes efficiently with the unpredictability of complex systems, achieves zero-carbon targets, and is resilient to natural and human-made disruption will not happen by chance. It will require careful analysis, different priorities, an engaged population and, above all…

…a dramatically different engineering workforce – different not only in technical skills but also in creativity, interdisciplinarity, flexibility, and motivation…

Understanding complexity and the balance between resilience and efficiency will be essential skills.

[Royal Academy of Engineering
But How... And, any Standards? Benchmark?

A Historical Collaboration

IEA Benchmark for Graduate Attributes and Professional Competencies

(IEA GAPC)

Released: June 21, 2021
<table>
<thead>
<tr>
<th>Criteria</th>
<th>EAC2024 (GA)</th>
<th>EAC2016 (GA)</th>
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<tr>
<td>3.1</td>
<td>ability to apply knowledge of mathematics, science, and engineering</td>
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</tr>
<tr>
<td>3.2</td>
<td>ability to design and conduct experiments, as well as to analyze and interpret data</td>
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</tr>
<tr>
<td>3.3</td>
<td>ability to apply techniques, skills, and modern tools necessary for engineering practice</td>
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</tr>
<tr>
<td>3.4</td>
<td>ability to design an engineering system, component, or process</td>
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</tr>
<tr>
<td>3.5</td>
<td>ability to manage project, communicate effectively, work in multi-disciplinary environment, and function on teams</td>
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</tr>
<tr>
<td>3.6</td>
<td>ability to identify, formulate, research literature while incorporating considerations of sustainable development in delivering solutions for complex engineering problems</td>
<td>ability to identify, formulate, research literature and analyze complex engineering problems reaching substantial conclusions</td>
</tr>
<tr>
<td>3.7</td>
<td>knowledge of contemporary issues; an understanding of the impact of engineering solutions in an environmentally sustainable, societal, and global context; and the ability and habit to engage in life-long learning</td>
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<tr>
<td>3.8</td>
<td>apply ethical principles and commit to professional and information ethics, and responsibilities and norms of engineering practice, and a sense of respect for diversity</td>
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Looking into the Future
Virtual Accords Business Meetings - 3 Years in a Row Already

05.26 Canberra Accord
06.29 Seoul Accord
07.01 Washington Accord
07.07 Sydney Accord
No one has expected the pandemic would last such a long time... so rules and procedures were amended for temporary purpose...
The protocol covers the following:

- Preparation and Support for the Accord Review Team
- Time (period of the virtual visit needs to be scheduled longer than onsite visits)
- Time Zone differences
- Documentation
- Translator
- IT support
- Tours of physical infrastructure
- On-site and Hybrid Options
For Now… the General Sentiment

Periodic Review of Existing Signatories

• Virtual review generally accepted

Verification Review of New Applicants

• Onsite review still preferred due to the ramifications of muti-lateral qualification recognition
Accords Workshop in October 2022
Killarney, Ireland

All IEA Sessions
- IEA Business Model
  - Fee Structure
  - Marketing Strategy (IEA)
- Website Review
- Organisational Learnings from Covid-19
  - How do we want to move forward – is there opportunity to improve efficiency and sustainability etc?
  - What can we learn from our experiences working through the Pandemic? What will serve the IEA best moving forward?
  - Are there elements of technology (virtual meetings) or virtual processes (virtual reviews etc.) that the IEA should adopt on an on-going basis?
- Reflections and Learnings from Virtual Reviews – Including feedback from 2021 ‘proof of concept’.
- GAPC
  - Impacts – How do these affect each Accord & Agreement?
  - Implementation – Best Practice Sharing of Implementation Plans
  - Implementation – Gap Analysis Workshop
  - Interpretation – Progress on Translations/Approval of the Various Translations

Accord Sessions
- Accord Review Process Refinement
- Requests by HEI for Accreditation
- Clarifications of expectations regarding OBE/OBA Implementation by Provisional Signatories
- Clarification of expectations regarding Guideline Rule C.3.4

Center Around
- Post Pandemic
- UNSDGs

QA of
Engr. Education
&
Accreditation
Takeaway…True Reflections

“*We do not learn from experience... we learn from reflecting on experience.*” [John Dewey]

“To improve is to change, to be perfect is to change often.” [Winston Churchill]

“Follow effective action with quiet reflection. From the quiet reflection will come even more effective action.” [Peter Drucker]
Accreditation is at the intersection of education and profession. We must be the conscience of quality and source of confidence.