IEET
中華工程教育學會

Experience Sharing from IEET

Prof. Liang-Jenq Leu
IEET Secretary General & CEO
Professor, Civil Engineering, National Taiwan University
President, Taiwan Construction Research Institute
Founding President, Taiwan Society for Circular Economy

Dr. Mandy Liu
IEET Deputy Executive Director

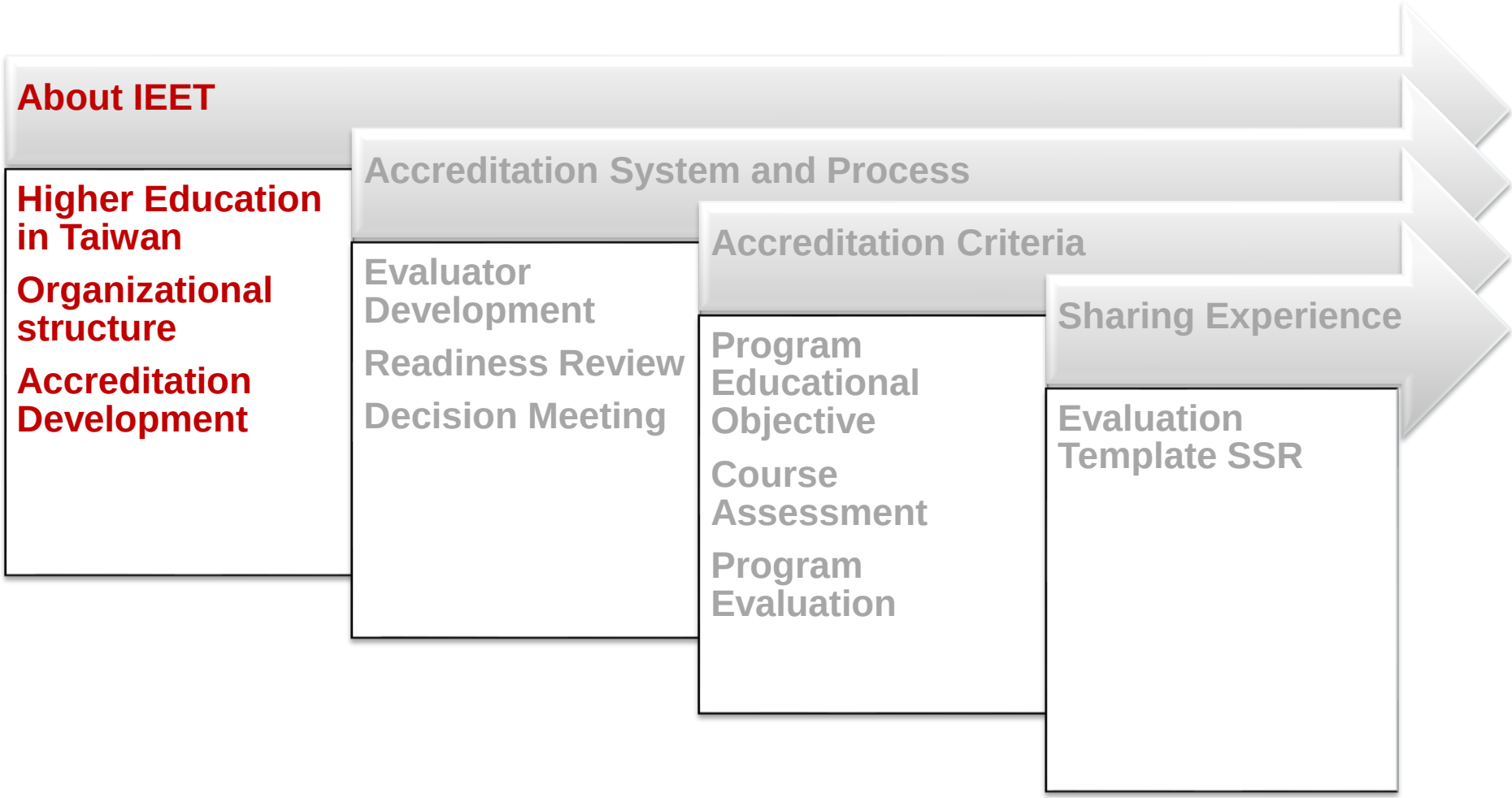
28 December 2019
Council of Engineers Thailand
TABEE

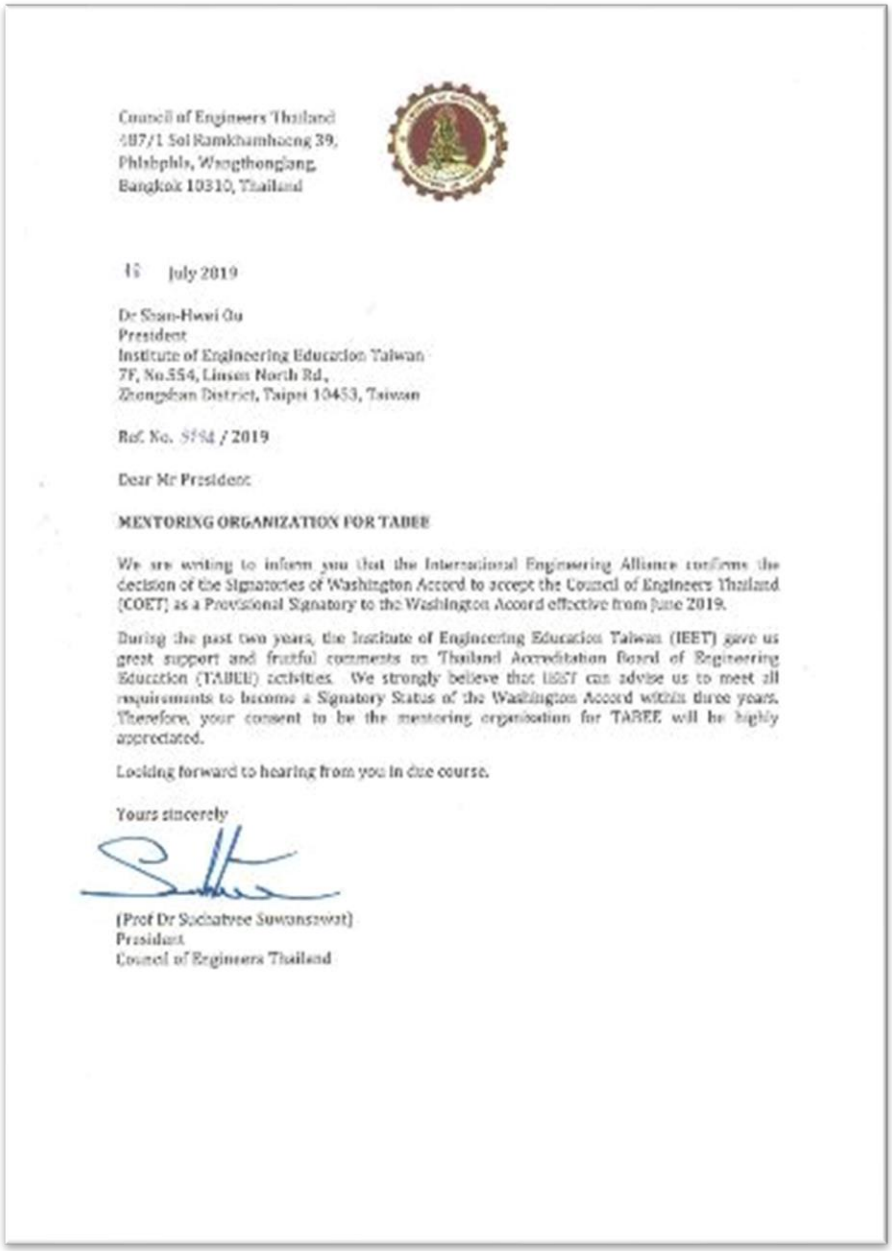
IEET 中華工程教育學會

Outlines

- About IEET
  - Higher Education in Taiwan
  - Organizational structure
  - Accreditation Development
- Accreditation System and Process
  - Evaluator Development
  - Readiness Review
  - Decision Meeting
- Accreditation Criteria
  - Program Educational Objective
  - Course Assessment
  - Program Evaluation
- Sharing Experience
  - Evaluation Template SSR

Outlines





Council of Engineers Thailand
487/1 Soi Ramkhamhaeng 39,
Phlabphla, Wangthonglang,
Bangkok 10310, Thailand

15 July 2019

Dr Shan-Hwei Gu
President
Institute of Engineering Education Taiwan
7F, No.554, Linsen North Rd.,
Zhongshan District, Taipei 10453, Taiwan

Ref. No. 5984 / 2019

Dear Mr President

MENTORING ORGANIZATION FOR TABEE

We are writing to inform you that the International Engineering Alliance confirms the decision of the Signatories of Washington Accord to accept the Council of Engineers Thailand (COET) as a Provisional Signatory to the Washington Accord effective from June 2019.

During the past two years, the Institute of Engineering Education Taiwan (IEET) gave us great support and fruitful comments on Thailand Accreditation Board of Engineering Education (TABEE) activities. We strongly believe that IEET can advise us to meet all requirements to become a Signatory Status of the Washington Accord within three years. Therefore, your consent to be the mentoring organization for TABEE will be highly appreciated.

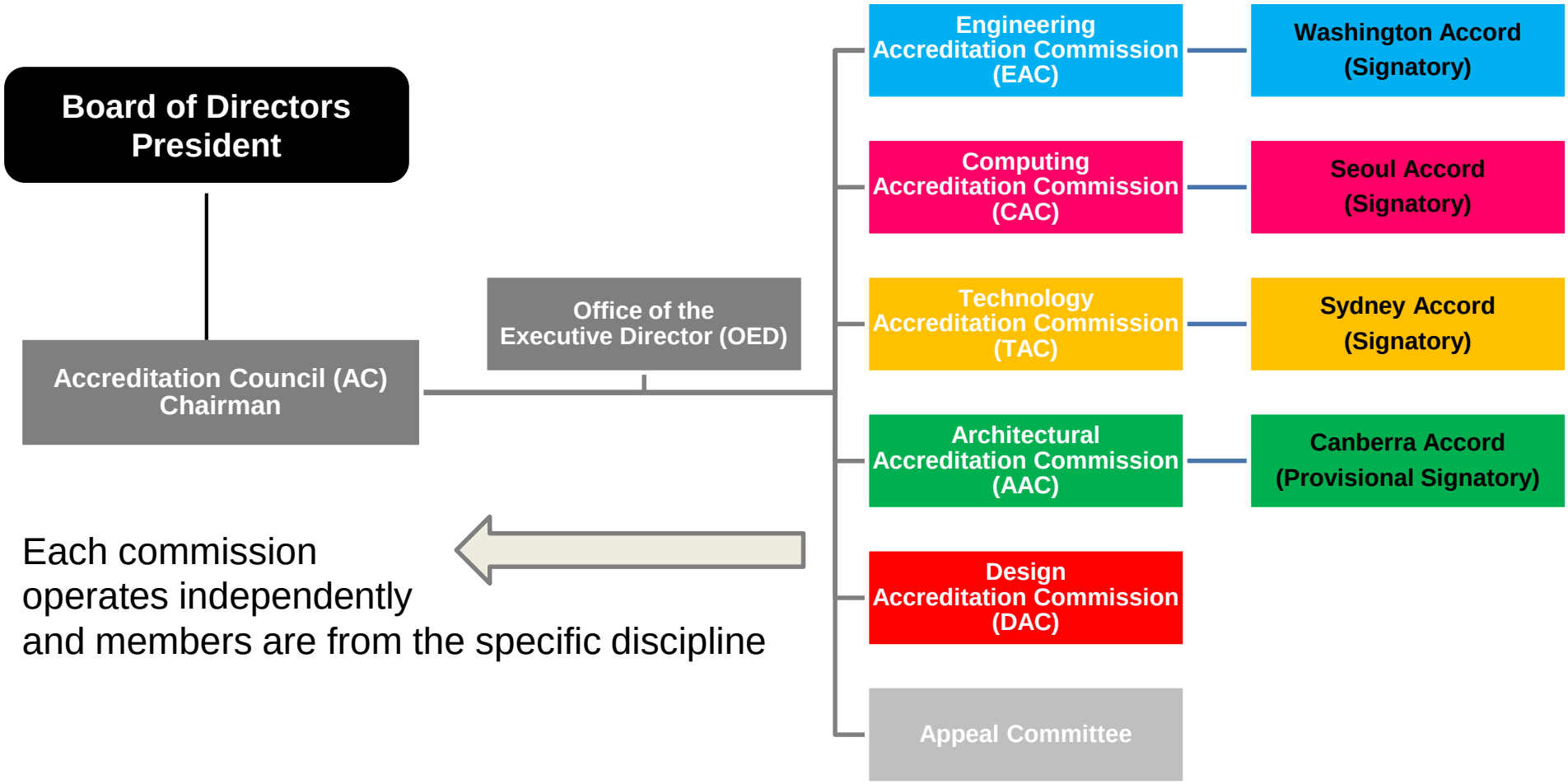
Looking forward to hearing from you in due course.

Yours sincerely

(Prof Dr Suchatvee Suwansawat)
President
Council of Engineers Thailand

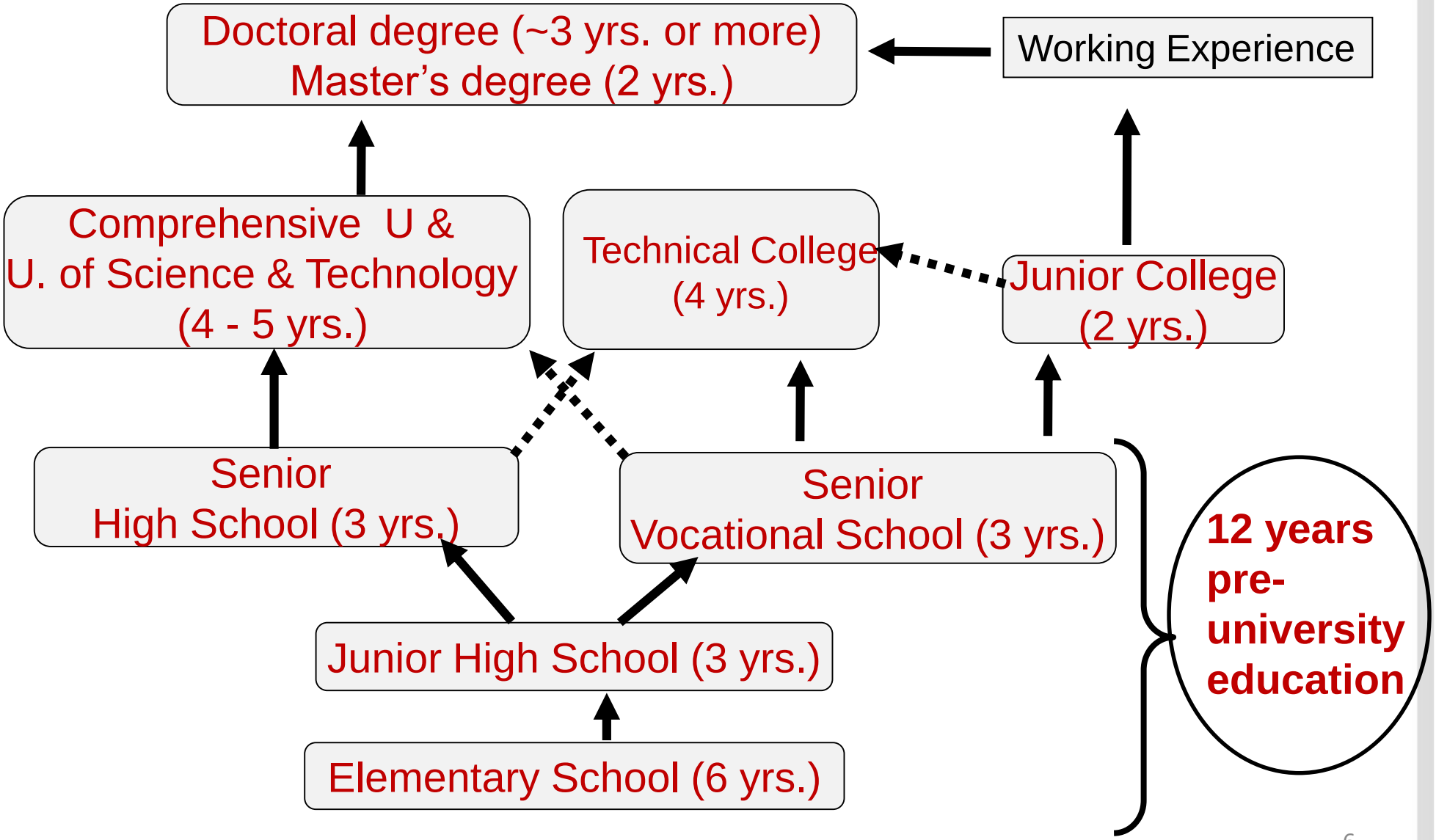
COET has made request to the IEA Secretariat for IEET to be its Mentor.

IEET, Founded in 2003

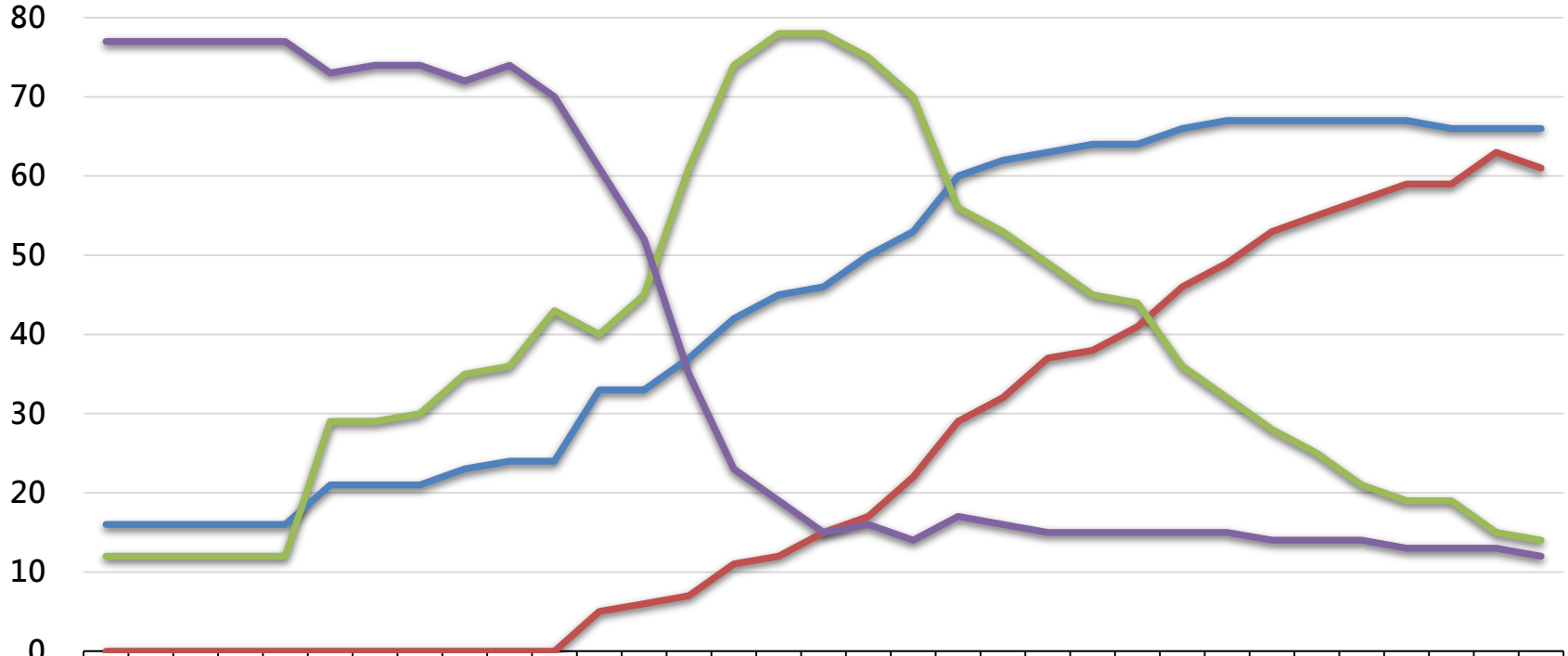


Each commission operates independently and members are from the specific discipline

Education System in Taiwan



Higher Education Institutions in Taiwan N=153



	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98	'99	'00	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10	'11	'12	'13	'14	'15	'16	'17	'18
Univ.	16	16	16	16	16	21	21	21	23	24	24	33	33	37	42	45	46	50	53	60	62	63	64	64	66	67	67	67	67	67	66	66	66
Univ. of S&T	0	0	0	0	0	0	0	0	0	0	0	5	6	7	11	12	15	17	22	29	32	37	38	41	46	49	53	55	57	59	59	63	61
Coll. and Inst.	12	12	12	12	12	29	29	30	35	36	43	40	45	61	74	78	78	75	70	56	53	49	45	44	36	32	28	25	21	19	19	15	14
Jr. Coll.	77	77	77	77	77	73	74	74	72	74	70	61	52	35	23	19	15	16	14	17	16	15	15	15	15	15	14	14	14	13	13	13	12
Taiwan	105	105	105	105	105	123	124	125	130	134	137	139	136	140	150	154	154	158	159	162	163	164	162	164	163	163	162	161	159	158	157	157	153

Note: Date source is from M.O.E., Taiwan (by autumn semester).
Military, police, religious, and continuing education institutions are excluded.

IEET was approved by the Washington Accord and the Sydney Accord in 2018 for another 6 years period as signatory.

Became WA Signatory In 2007

Became SA Signatory In 2014

INTERNATIONAL ENGINEERING ALLIANCE

PO Box 12 241, Wellington 6144, New Zealand | +64 4 473 2022
secretariat@ipenz.org.nz | www.ieagreements.org

20 June 2019

Dr Mandy Liu
IEET Office Director & Deputy Executive Director of Accreditation Council
7F, No.554, Linsen North Rd.,
Zhongshan District,
Taipei 10453,
Taiwan

Sent by email to: mandyliu@ieet.org.tw

Dear Mandy

2018 Joint Washington/Sydney Accord Review

We are writing to confirm the decisions of the Signatories of the Washington and Sydney Accord during their meetings at the IEA meetings, Hong Kong 2019.

With 19 votes for (with one out of the room), 0 against and 0 abstention the signatories of the Washington Accord UNANIMOUSLY AGREED to approve the recommendation made by the review team and accepted IEET, for a period of six years, as leading to outcomes substantially equivalent to those recognized by the Washington Accord.

With 10 votes for, 0 votes against, 0 abstentions (with one out of the room), the signatories of the Sydney Accord also UNANIMOUSLY AGREED that IEET be accepted by the other signatories, for a period of six years, as leading to outcomes substantially equivalent to those recognized by the Sydney Accord.

Em Prof Elizabeth Taylor
Chair, Washington Accord

Professor Kai Sang LOCK
Deputy Chair, Washington Accord

Professor Ohyang Kwon
Chair, Sydney Accord

Dr Keith Jacobs
Deputy Chair, Sydney Accord

'Working Together to Advance Benchmarking and Mobility in the Engineering Profession'

Development of the Washington Accord

as of June 2019

1989: Original 6

1990s: +2

2000s: +5

2010s: +7

Provisional Status

IEAM 2019
Hong Kong

2019.06.09-13

Washington Accord and Sydney Accord Issue Accreditation Marks for Accredited Programs (by the current signatories) to Use

IEET Accredited Logos

EAC

CAC

TAC

AAC

DAC

IEET Accreditation Certificate (Sample)

IEET 中華工程教育學會

Accreditation Council

Accreditation Certificate

No. *2018Y051*

Hereby it is certified that upon decision of the Accreditation Council and based on the Engineering Accreditation Criteria 2016

National Chung Cheng University

Department of Communications Engineering

Bachelor of Science

Master of Science/Doctor of Philosophy

First Accredited Academic Year: 2007

Current Accreditation Cycle: from August 1, 2018 to July 31, 2024

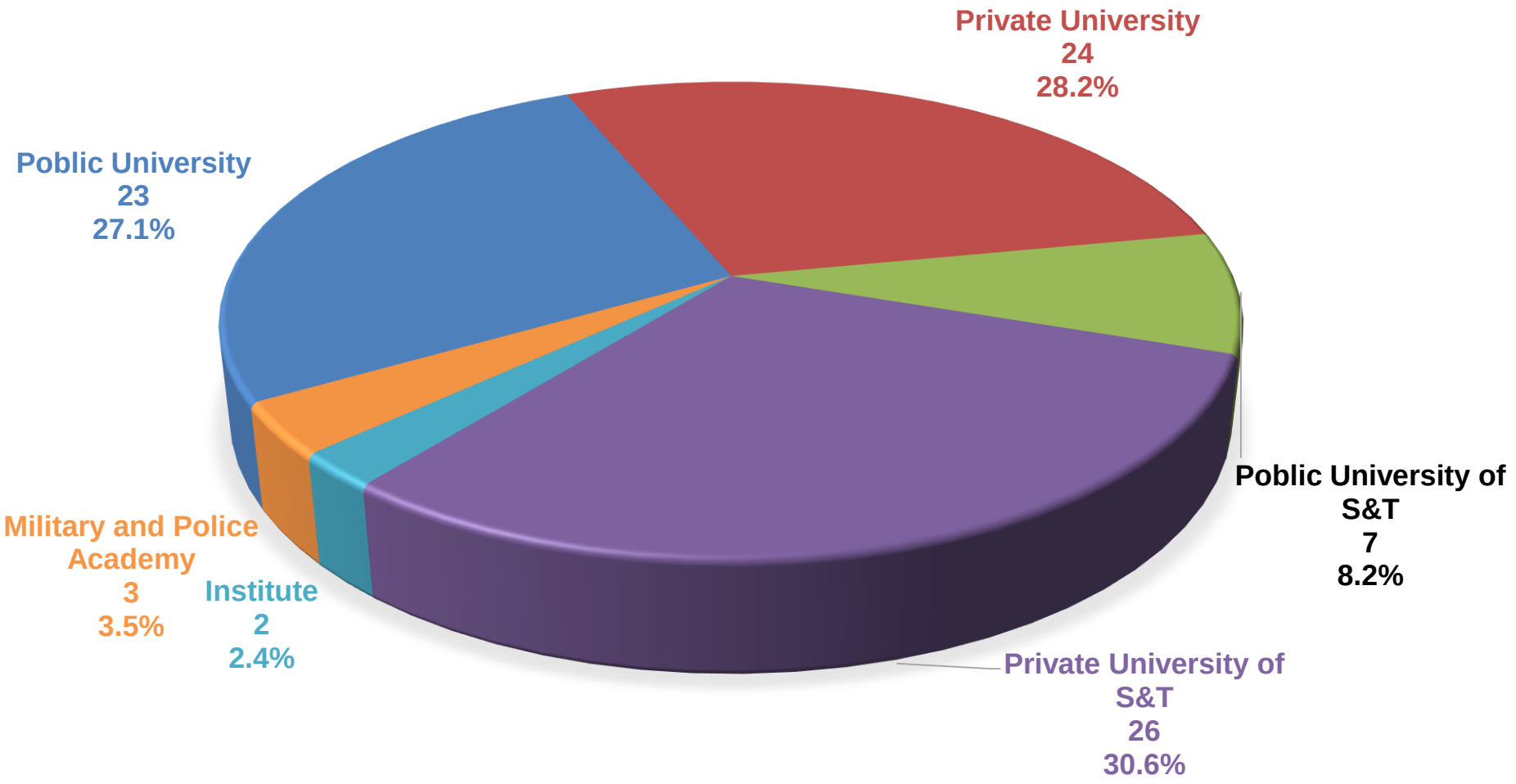
Accredited Status

from August 1, 2018 to July 31, 2024

Chairman May 2019

IEET Logo → ← **WA Logo**

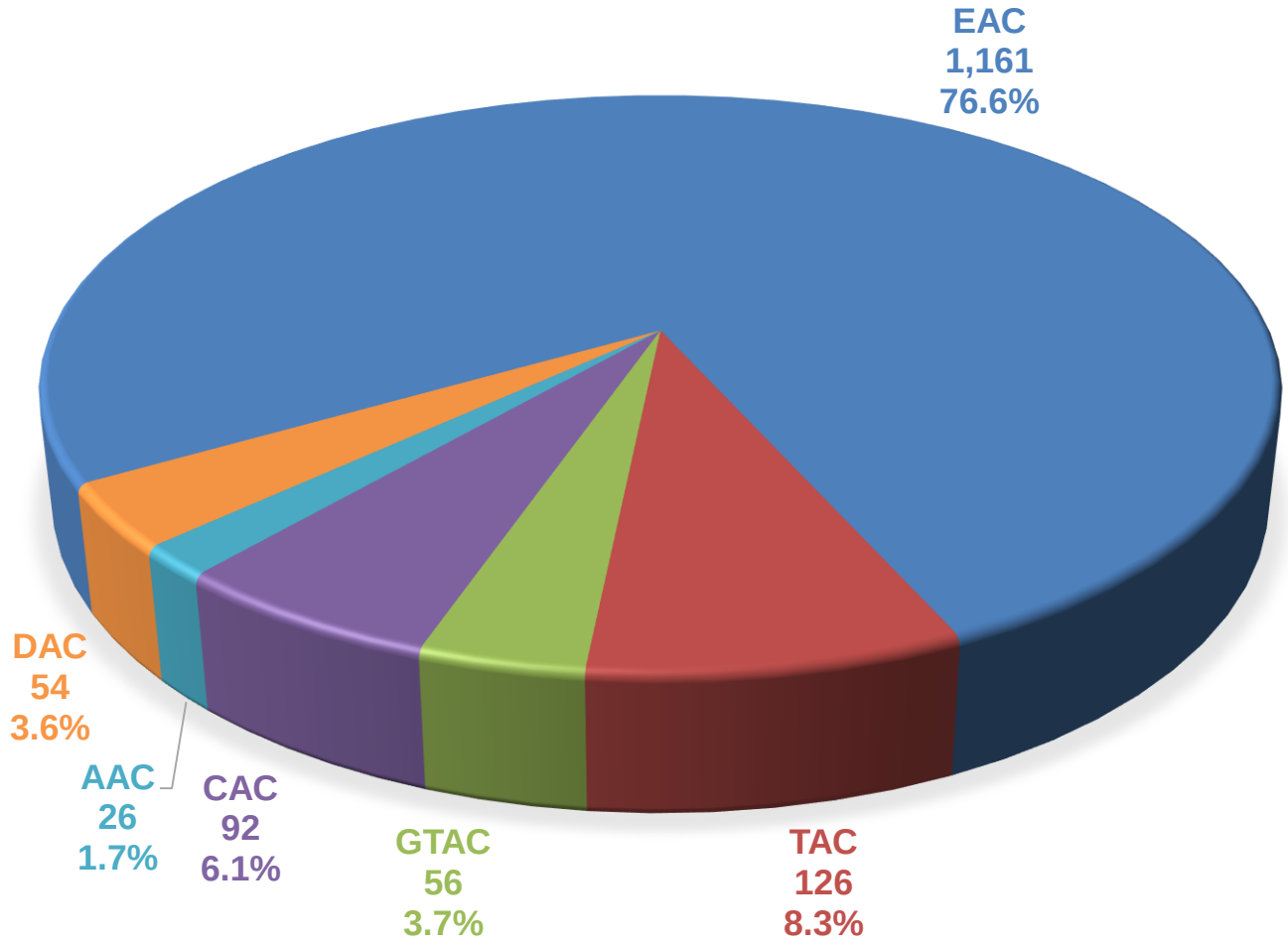
Universities Participated in IEET Accreditation (N=85)



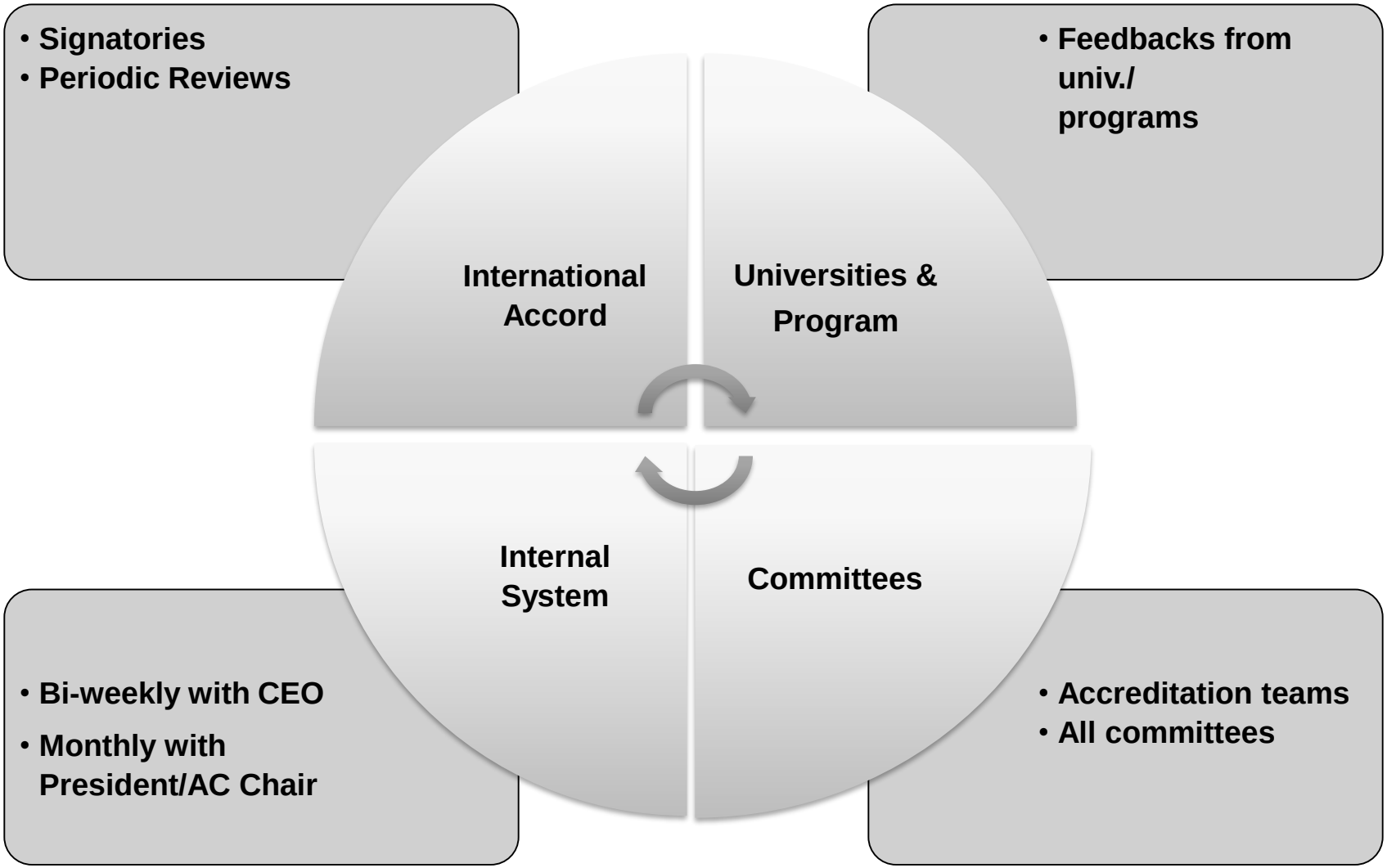
Well-Experienced Accreditation Agency

Programs Participated in IEET Accreditation 2004-2018 (N=1,515)

Annual operation is about 150 programs in 50 Universities

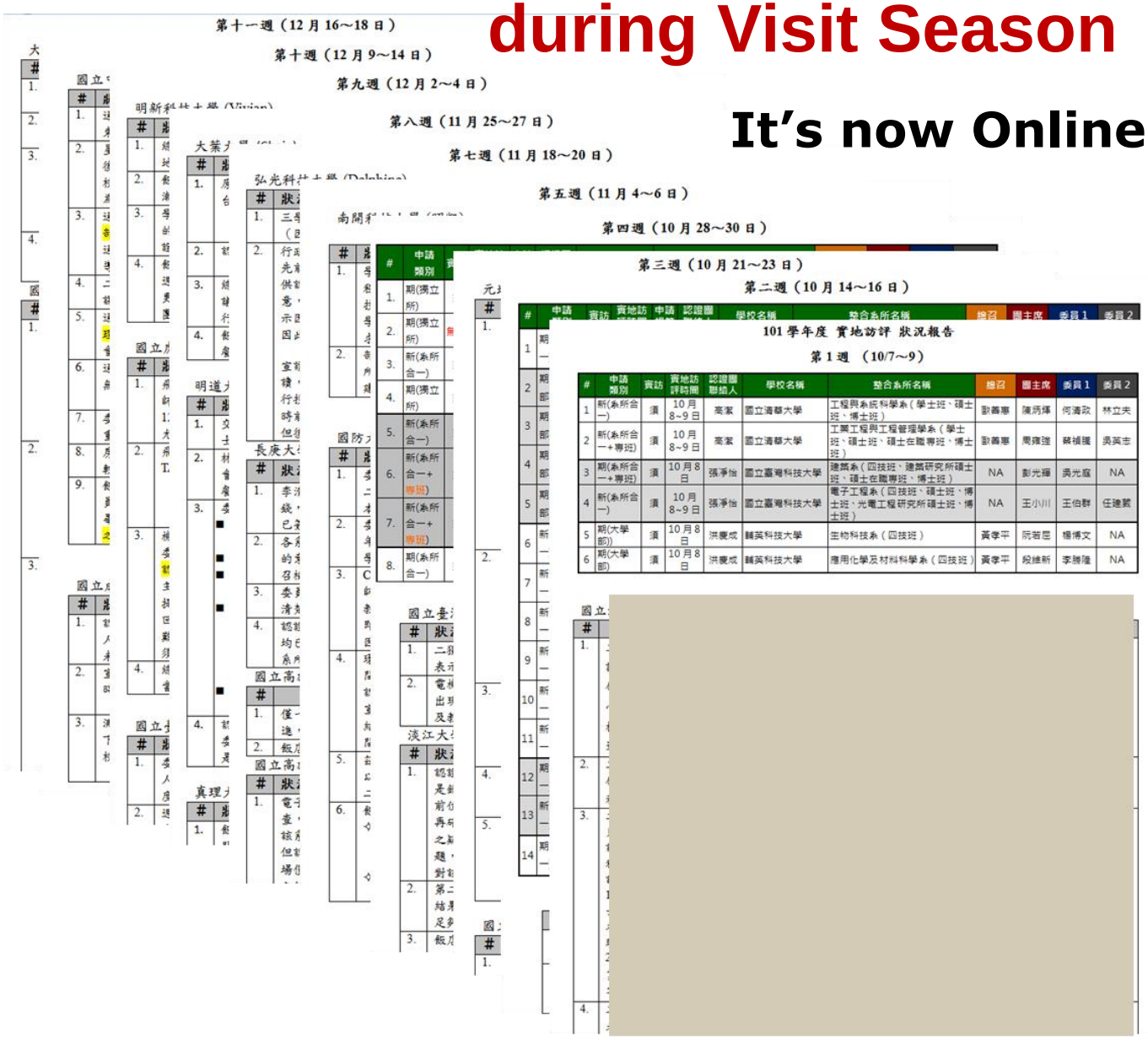


IEET CQI Mechanisms



OED
Weekly Debrief and Reflection during Visit Season

It's now Online!



#	申請類別	實訪	實地訪評時間	認證團聯絡人	學校名稱	整合系所名稱	總召	團主席	委員 1	委員 2
1	新(系所合一)	須	10 月 8~9 日	高案	國立清華大學	工程與系統科學系（學士班、碩士班、博士班）	歐善惠	陳炳輝	何清政	林立夫
2	新(系所合一+專班)	須	10 月 8~9 日	高案	國立清華大學	工業工程與工程管理學系（學士班、碩士班、碩士在職專班、博士班）	歐善惠	周雍強	韓楨國	吳英吉
3	期(系所合一+專班)	須	10 月 8 日	張淨怡	國立臺灣科技大學	建築系（四技班、建築研究所碩士班、碩士在職專班、博士班）	NA	彭光輝	吳光庭	NA
4	新(系所合一)	須	10 月 8~9 日	張淨怡	國立臺灣科技大學	電子工程系（四技班、碩士班、博士班、光電工程研究所碩士班、博士班）	NA	王小川	王伯群	任建葳
5	期(大學部))	須	10 月 8 日	洪慶成	輔英科技大學	生物科技系（四技班）	黃孝平	阮若屈	楊博文	NA
6	期(大學部)	須	10 月 8 日	洪慶成	輔英科技大學	應用化學及材料科學系（四技班）	黃孝平	殷維新	李勝隆	NA

IEET 中華工程教育學會

ONLINE

Surveys to Accreditation Teams and Programs

102 學年度 IEET 工程及科技教育認證
實地訪評回饋單 （認證團）

填寫完成後請交由 IEET 認證團聯絡人，或以傳真方式回傳：02-2367-9452。謝謝！

填寫人姓名：_____（可不填寫）

IEET 為瞭解此次認證執行及規劃持續改善方向，特擬定此項回饋單，邀請認證團成員踴躍回覆；相關回饋主要做為 IEET 的內部檢討使用，若公開發表，絕不以個案方式，而是以整合之統計分析方式呈現。IEET 感謝您的耐心填寫！

(請於以下欄位勾選或圈選)

	5 非常同意	4 同意	3 普通	2 不同意	1 非常不同意
A. 學程準備					
1. 學程充分了解 IEET 成果導向認證精神及規範要求。	5	4	3	2	1
2. 學程充分了解 IEET 認證程序。	5	4	3	2	1
3. 學程自評報告書內容詳實完整。	5	4	3	2	1
4. 學程現場佐證文件充足。	5	4	3	2	1
5. 學程受訪人員安排合宜。	5	4	3	2	1
6. 學程主管、教師及行政人員配合良好。	5	4	3	2	1
7. 學程認同 IEET 認證。	5	4	3	2	1
B. 認證團成員自我評估					
1. 實地訪評前確實閱讀學程報告書及準備相關待釐清意見。	5	4	3	2	1
2. 對 IEET 認證規範及相關佐證充分了解。	5	4	3	2	1
3. 對 IEET 認證程序充分了解。	5	4	3	2	1
4. 對認證團成員的責任充分了解。	5	4	3	2	1
5. 與其他成員專業領域相互搭配適當。	5	4	3	2	1
6. 時間掌控得宜，訪談行程未有延誤。	5	4	3	2	1
7. 充分扮演聆聽及詢問者，有效與學程溝通，未有提供過多意見的情況。	5	4	3	2	1
8. 與其他成員充分合作，順利完成認證審查。	5	4	3	2	1
9. 認同 IEET 認證。	5	4	3	2	1
C. IEET 行政準備					
1. 認證團聯絡人具備充分的認證知識。	5	4	3	2	1
2. 認證團聯絡人親切有禮。	5	4	3	2	1
3. 相關聯絡及溝通良好。	5	4	3	2	1
4. 食宿交通安排順利合宜。	5	4	3	2	1
5. 訪評文件準備完整充分。	5	4	3	2	1
D. IEET 認證機制					
1. 認證規範精神與內涵符合產業對人才之需求。	5	4	3	2	1
2. 認證規範符合目前相關領域大學教育現況。	5	4	3	2	1
3. 認證規範條文明確詳盡。	5	4	3	2	1
4. 認證規範反映國際趨勢。	5	4	3	2	1
5. 認證程序明確合理。	5	4	3	2	1
6. 認證程序謹慎嚴謹。	5	4	3	2	1
7. 您過去所接觸過的 IEET 人員皆訓練有素。	5	4	3	2	1

E. 其他建議：（煩請條列式撰寫）

102 學年度 IEET 工程及科技教育認證
實地訪評回饋單 （受認證學程）

請與「離校意見書回覆」一併寄回 IEET，或以傳真方式回傳：02-2367-9452。謝謝！

學程名稱及填寫人姓名：_____（可不填寫）

IEET 為瞭解此次認證執行及規劃持續改善方向，特擬定此項回饋單，邀請受認證學程踴躍回覆；相關回饋主要做為 IEET 的內部檢討使用，若公開發表，絕不以個案方式，而是以整合之統計分析方式呈現。IEET 感謝您的耐心填寫！

(請於以下欄位勾選或圈選)

	5 非常同意	4 同意	3 普通	2 不同意	1 非常不同意
A. 學程自我評估					
1. 學程充分了解 IEET 成果導向認證精神及規範要求。	5	4	3	2	1
2. 學程充分了解 IEET 認證程序。	5	4	3	2	1
3. 學程自評報告書內容詳實完整。	5	4	3	2	1
4. 學程現場佐證文件充足。	5	4	3	2	1
5. 學程受訪人員安排合宜。	5	4	3	2	1
6. 學程主管、教師及行政人員配合良好。	5	4	3	2	1
7. 學程認同 IEET 認證。	5	4	3	2	1
B. 認證團準備					
1. 實地訪評前確實閱讀學程報告書及準備相關待釐清意見。	5	4	3	2	1
2. 對 IEET 認證規範及相關佐證充分了解。	5	4	3	2	1
3. 對 IEET 認證程序充分了解。	5	4	3	2	1
4. 認證團成員專業領域相互搭配適當。	5	4	3	2	1
5. 時間掌控得宜，訪談行程未有延誤。	5	4	3	2	1
6. 充分扮演聆聽及詢問者，有效與學程溝通，未有提供過多意見的情況。	5	4	3	2	1
7. 認證團具備團隊精神。	5	4	3	2	1
C. IEET 行政聯絡					
1. 認證團聯絡人具備充分的認證知識。	5	4	3	2	1
2. 認證團聯絡人親切有禮。	5	4	3	2	1
3. 相關聯絡及溝通良好。	5	4	3	2	1
4. 訪評行程安排合宜。	5	4	3	2	1
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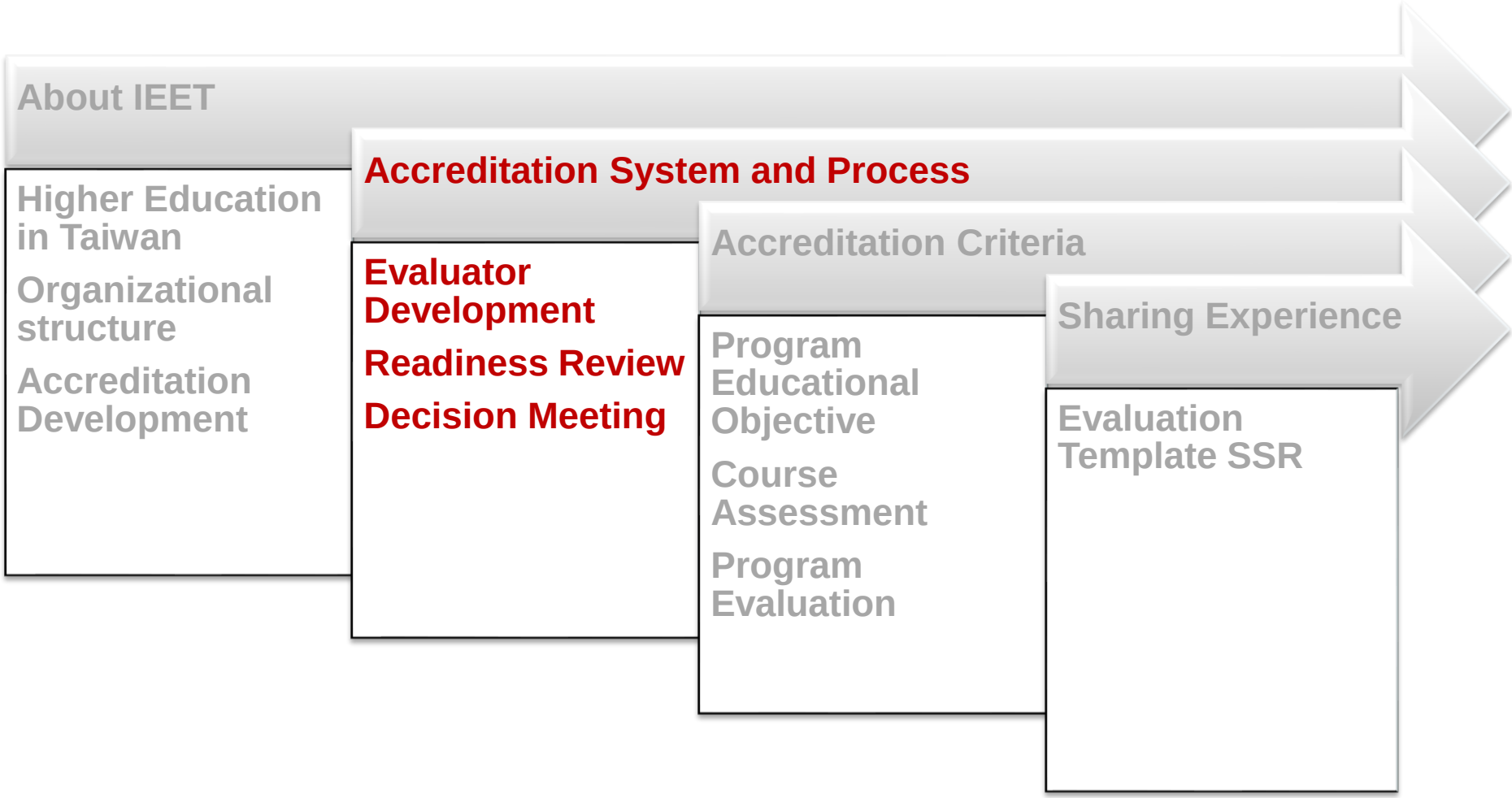
2. 認證規範符合目前相關領域大學教育現況。	5	4	3	2	1
3. 認證規範條文明確詳盡。	5	4	3	2	1
4. 認證規範反映國際趨勢。	5	4	3	2	1
5. 認證程序明確合理。	5	4	3	2	1
6. 認證程序謹慎嚴謹。	5	4	3	2	1
7. 您過去所接觸過的 IEET 人員皆訓練有素。	5	4	3	2	1

E. 其他建議：（煩請條列式撰寫）

Outlines



IEET Accreditation is of 6-year Accreditation Cycle

Between 3rd & 4th year
a possible Interim Review

Every 6 years
a General Review

Types of Review

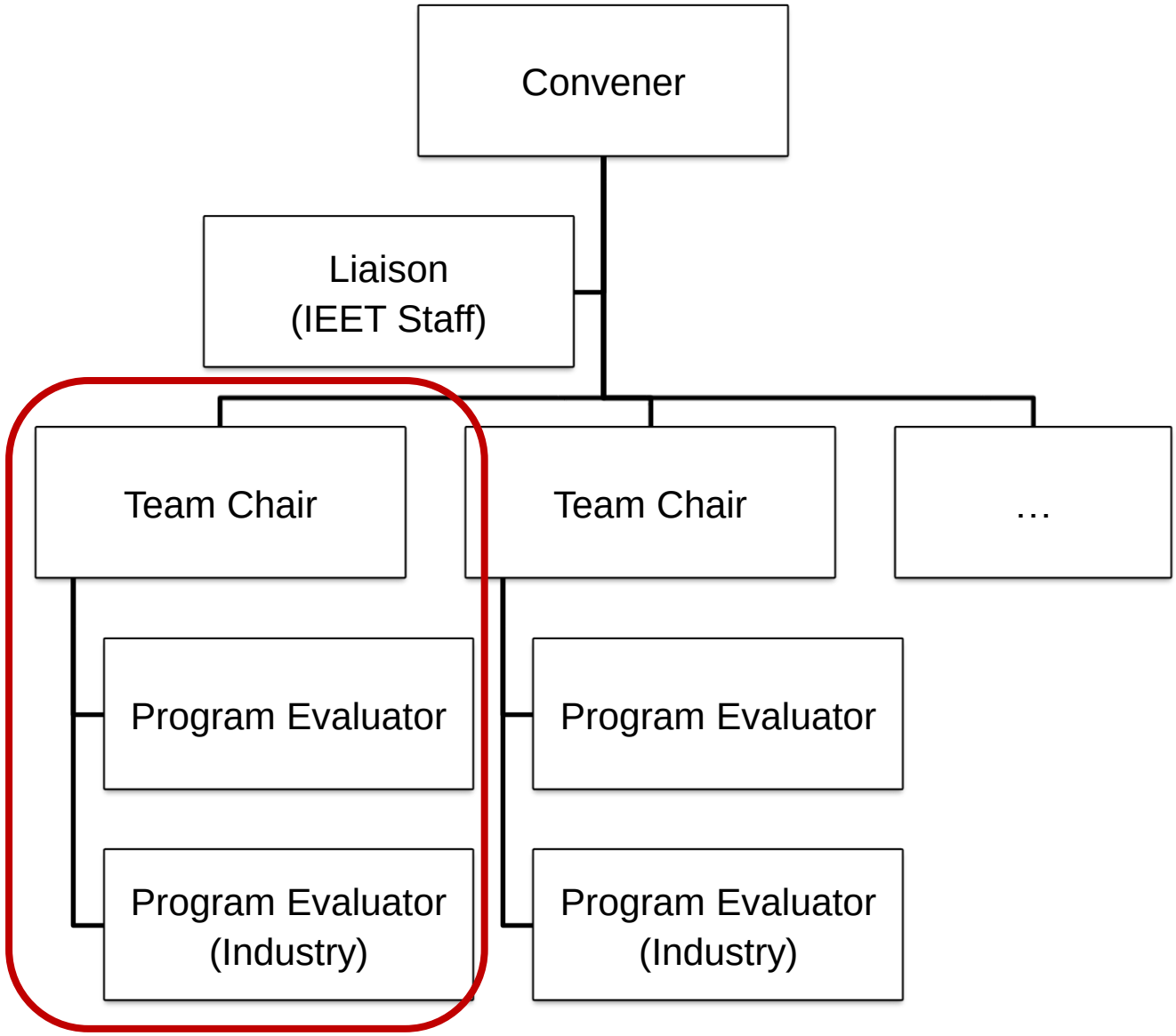
General Review

Time	• Every 6 Years
Document Review	• Self-study Report with 6 years of data • Related documents
On-site Visit	• 2 days visit

Interim Review

Time	• Usually between 3rd and 4th Year within a cycle
Document Review	• Focused report on improvement from last general review
On-site Visit	• 1 day visit

Make Up of Accreditation Team (Peer Review)



For each program, 3-member Team.

Nomination of Accreditation Teams

Recommended by Commission, Industry, or Academic Societies

Nominated by Commission Chair with Approval by Accreditation Council Chair

Participate in IEET Training Workshops

Assigned to Teams

Nomination of Conveners and Chairs

Conveners	Chairs
• Former university presidents • Senior deans	• Senior program evaluators • Academics with administrative experience

Training of Accreditation Teams

New Program Evaluator

- One-day Workshop
- Observer in Review Team

Current Program Evaluator

- Refresher Training
- International Observation

Team Chair/ Team Convener

- Refresher Training
- Annual Chairs and Conveners Meetings
- International Observation

Responsibility of Program Evaluator

- Conduct each visit and interview according to the *Accreditation Criteria*
- Participate on-site visit in its entirety according to the on-site visit itinerary
- Evaluate all supporting documents provided by the program under review
- The *Exit Statement* shall reflect the Program's actual merits and areas for improvement; it shall be provided in written form, using language that is fair, reasonable, clear, succinct, and non-emotional, while complying with the IEET format.
- Abide scrupulously by the requirements of the *Code of Ethics*
- Compile the *Exit Statement*

Principles of Conflict of Interest

1. Having, in the past three years, held or is currently holding a full-time or part-time position in the program;
2. Having awarded the highest academic degree by the program;
3. Having awarded an honorary degree by the university that the program belongs to;
4. Having spouse or relative up to twice removed work or enroll in the program;
5. Holding a paid position, as member of an advisory committee member or a board member, etc. in the university that the program belongs to;
6. Serving as a member of the program's advisory or self-study committee during the same academic year when the accreditation occurs;
7. Having any other stake-holding affiliations with the Program that is capable of undermining accreditation objectivity

Code of Ethics

Confidentiality

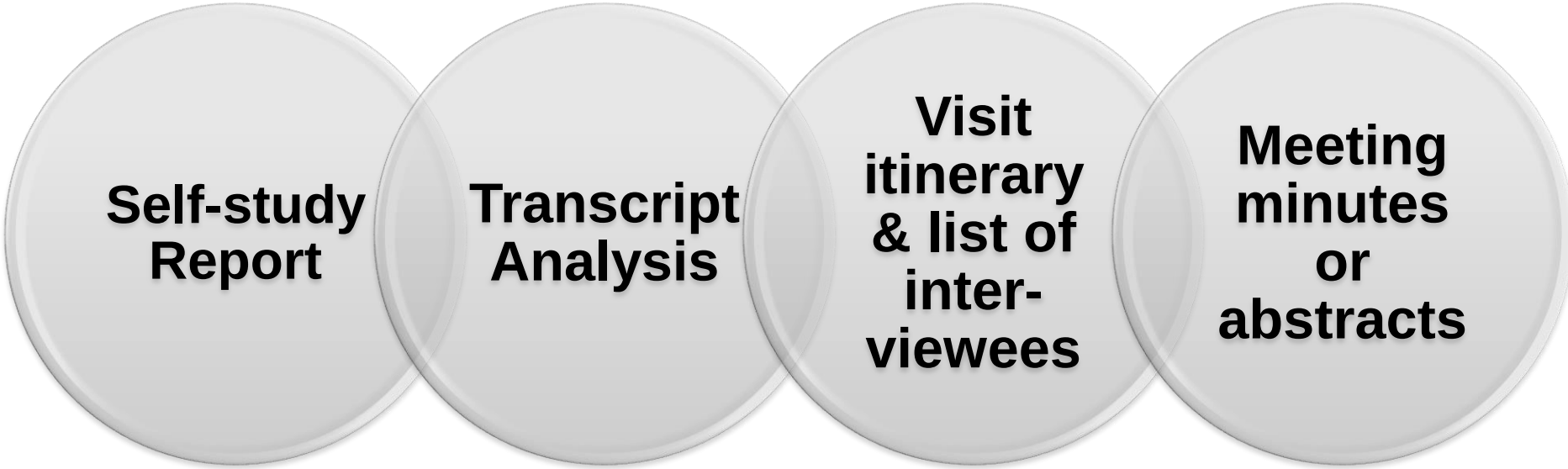
» **Keep evaluators' identities confidential prior to the review**

» **Keep all accreditation documents confidential**

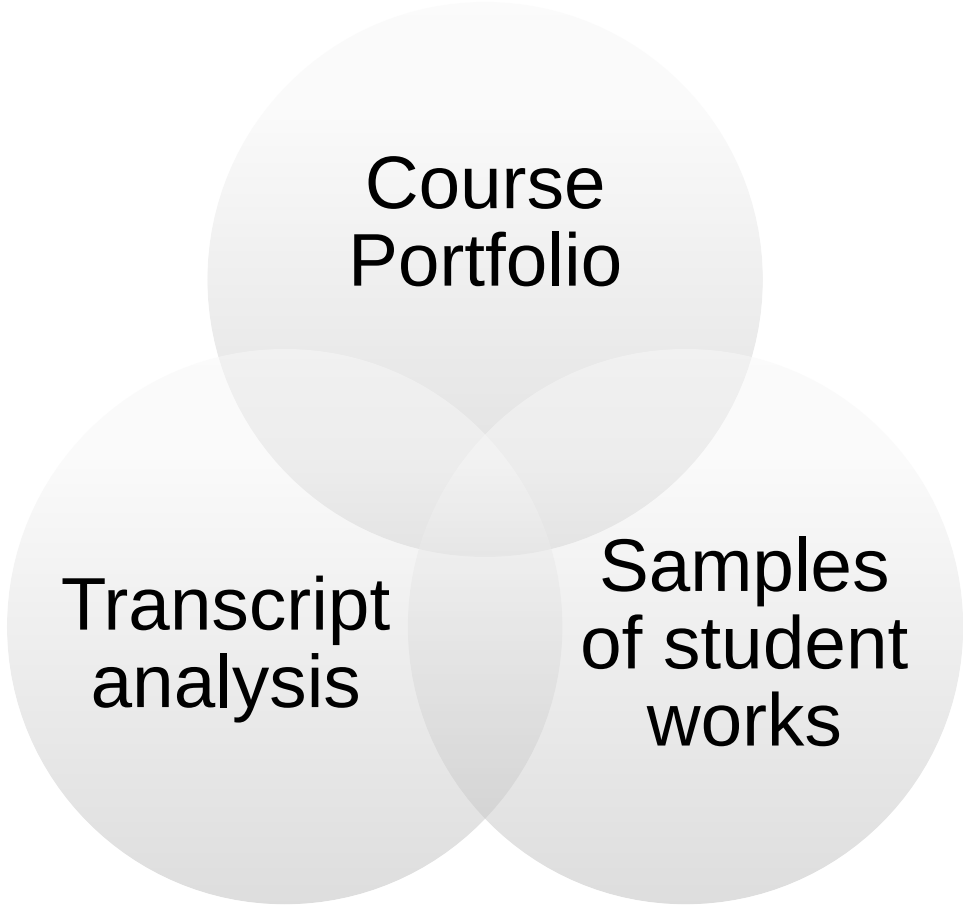
1. Documents from the program
2. Documents drafted by the accreditation teams
3. All meetings and discussions
4. Discussions in the decision meetings

Please consult IEET's *Code of Ethics for Accreditation of Programs*

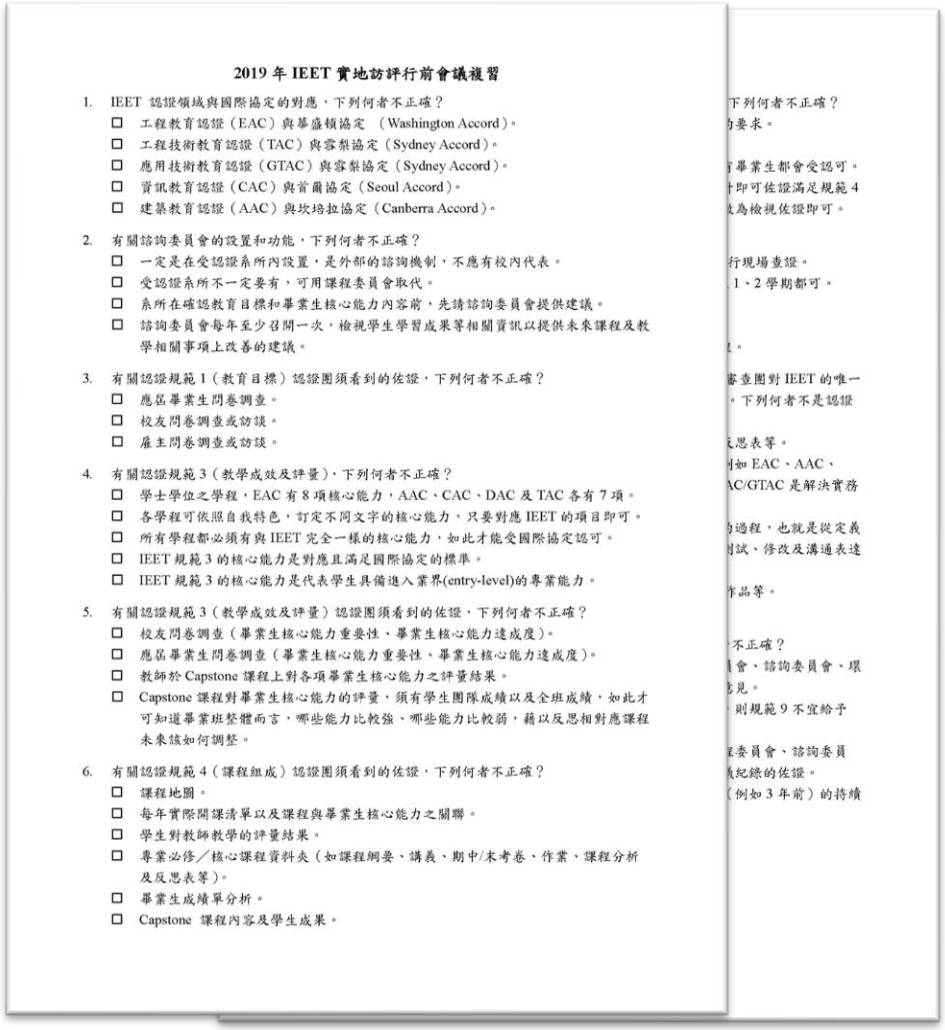
Prior to Visit… IEET Team has done reviewing:



During Visit… IEET Team is to review:



Day 0 Refresher Training



2019 年 IEET 實地訪評行前會議複習

1. IEET 認證領域與國際協定的對應，下列何者不正確？
   - ☐ 工程教育認證（EAC）與華盛頓協定 （Washington Accord）。
   - ☐ 工程技術教育認證（TAC）與雪梨協定（Sydney Accord）。
   - ☐ 應用技術教育認證（GTAC）與雪梨協定（Sydney Accord）。
   - ☐ 資訊教育認證（CAC）與首爾協定（Seoul Accord）。
   - ☐ 建築教育認證（AAC）與坎培拉協定（Canberra Accord）。
2. 有關諮詢委員會的設置和功能，下列何者不正確？
   - ☐ 一定是在受認證系所內設置，是外部的諮詢機制，不應有校內代表。
   - ☐ 受認證系所不一定要有，可用課程委員會取代。
   - ☐ 系所在確認教育目標和畢業生核心能力內容前，先請諮詢委員會提供建議。
   - ☐ 諮詢委員會每年至少召開一次，檢視學生學習成果等相關資訊以提供未來課程及教學相關事項上改善的建議。
3. 有關認證規範 1（教育目標）認證團須看到的佐證，下列何者不正確？
   - ☐ 應屆畢業生問卷調查。
   - ☐ 校友問卷調查或訪談。
   - ☐ 雇主問卷調查或訪談。
4. 有關認證規範 3（教學成效及評量），下列何者不正確？
   - ☐ 學士學位之學程，EAC 有 8 項核心能力，AAC、CAC、DAC 及 TAC 各有 7 項。
   - ☐ 各學程可依照自我特色，訂定不同文字的核心能力，只要對應 IEET 的項目即可。
   - ☐ 所有學程都必須有與 IEET 完全一樣的核心能力，如此才能受國際協定認可。
   - ☐ IEET 規範 3 的核心能力是對應且滿足國際協定的標準。
   - ☐ IEET 規範 3 的核心能力是代表學生具備進入業界(entry-level)的專業能力。
5. 有關認證規範 3（教學成效及評量）認證團須看到的佐證，下列何者不正確？
   - ☐ 校友問卷調查（畢業生核心能力重要性、畢業生核心能力達成度）。
   - ☐ 應屆畢業生問卷調查（畢業生核心能力重要性、畢業生核心能力達成度）。
   - ☐ 教師於 Capstone 課程上對各項畢業生核心能力之評量結果。
   - ☐ Capstone 課程對畢業生核心能力的評量，須有學生團隊成績以及全班成績，如此才可知道畢業班整體而言，哪些能力比較強、哪些能力比較弱，藉以反思相對應課程未來該如何調整。
6. 有關認證規範 4（課程組成）認證團須看到的佐證，下列何者不正確？
   - ☐ 課程地圖。
   - ☐ 每年實際開課清單以及課程與畢業生核心能力之關聯。
   - ☐ 學生對教師教學的評量結果。
   - ☐ 專業必修／核心課程資料夾（如課程綱要、講義、期中/末考卷、作業、課程分析及反思表等）。
   - ☐ 畢業生成績單分析。
   - ☐ Capstone 課程內容及學生成果。

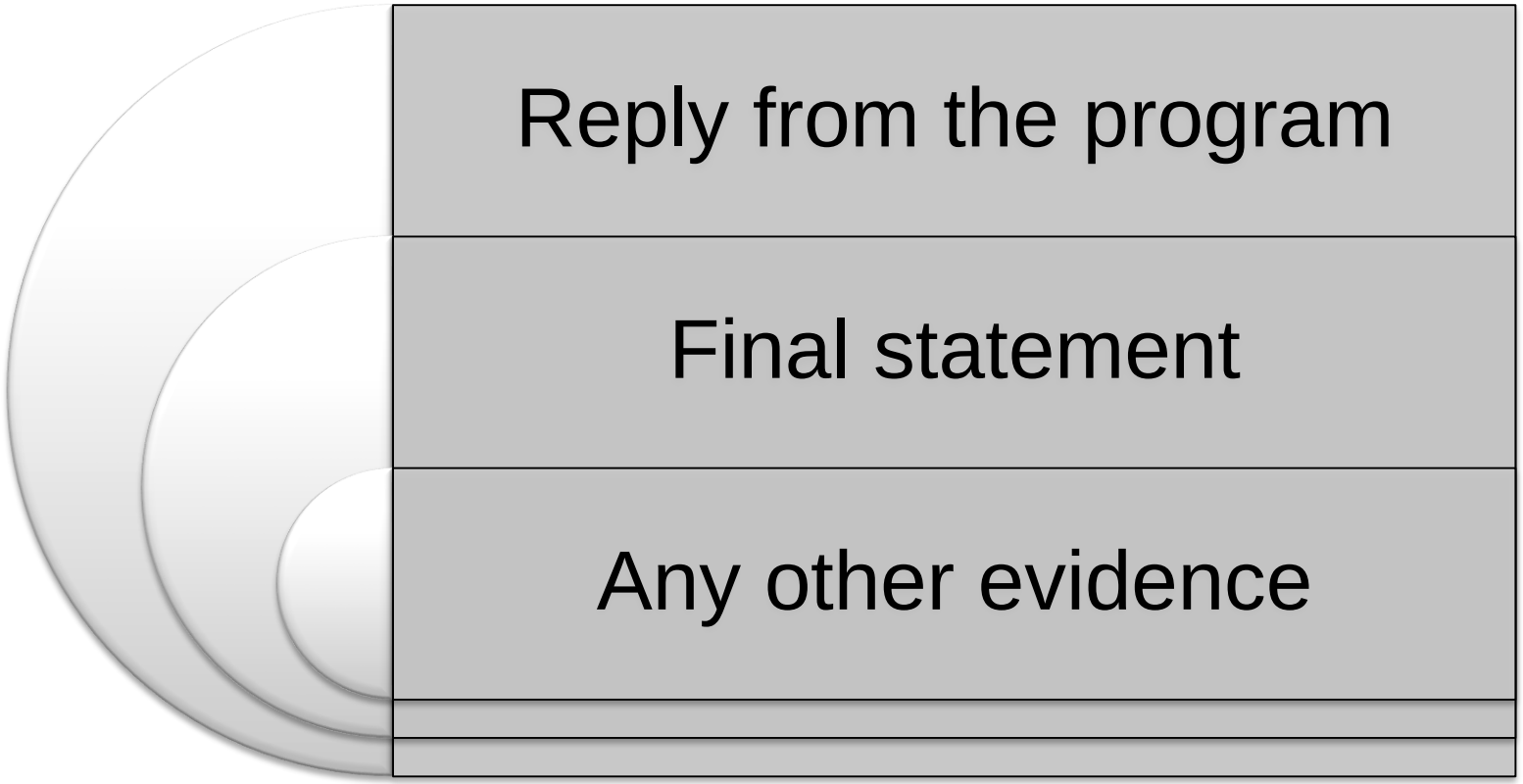
In order to help PEVs refreshing their knowledge about essence of accreditation, IEET developed a testing scheme of 10 questions for the program evaluators to refresh their memories in 2019.

Checklist of Evidence to be Observed

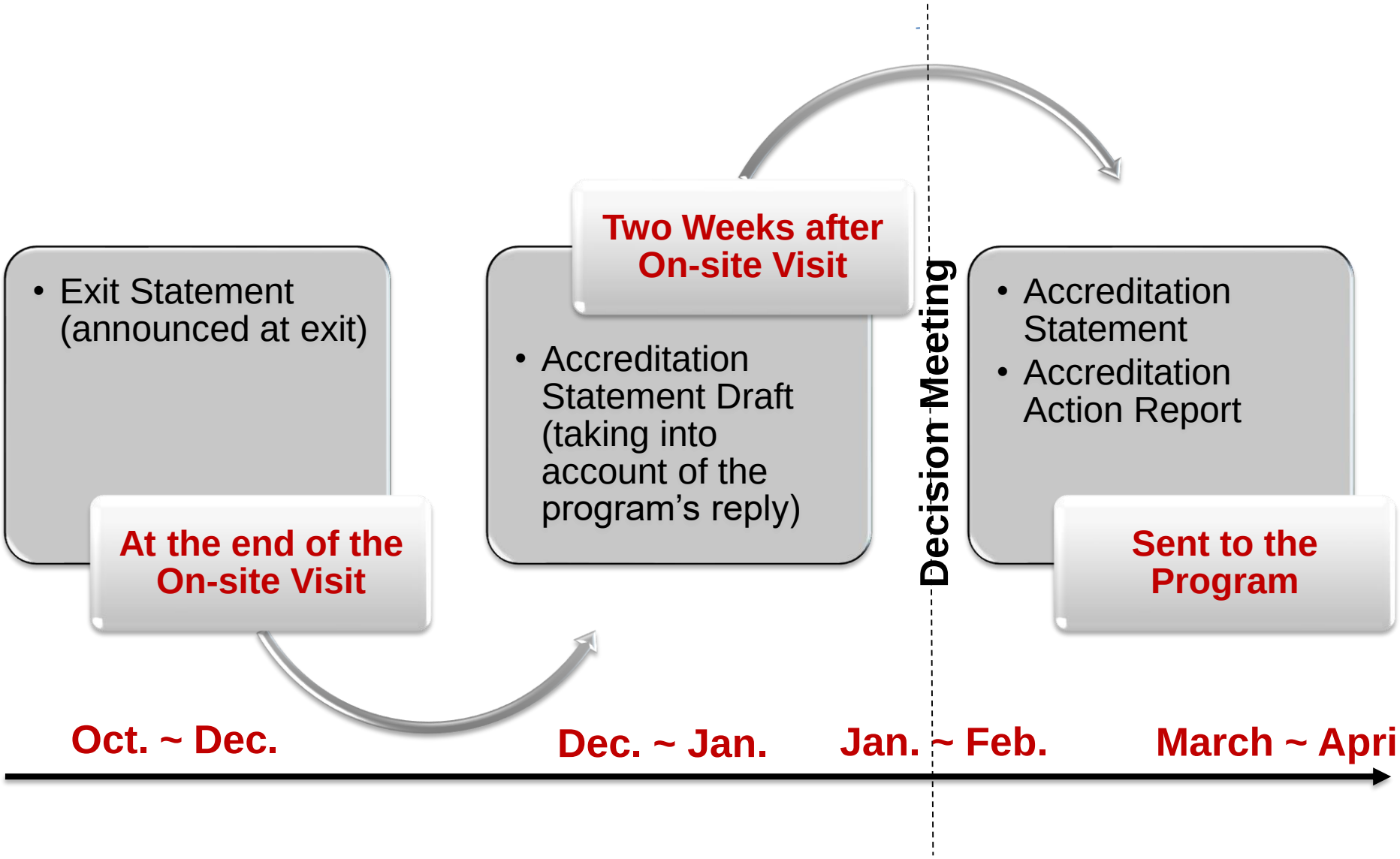
2019 年 IEET 實地訪評認證團檢視清單

認證規範	項目	確認事項
-	諮詢委員會組成及會議記錄	☐ 具諮詢委員會 ☐ 定期召開會議，並有會議記錄（一年至少一次） ☐ 落實會議紀錄
規範 1 教育目標	校友問卷調查及結果分析	☐ 詢問校友教育目標重要性及自我達成度 ☐ 定期進行（每三年至少一次，60 份左右）
規範 1 教育目標	雇主問卷調查及結果分析	☐ 詢問雇主教育目標重要性及校友的達成度 ☐ 定期進行（每三年至少一次，30 份左右）
規範 3 教學成效及評量	Capstone 課程對畢業生核心能力達成度的評量及結果分析	☐ 用 Capstone 課程評量畢業生核心能力達成度 ☐ 有學生團隊成績 ☐ 有全班成績 ☐ 有反思畢業班哪些能力比較強、哪些比較弱，並檢討其原因
規範 3 教學成效及評量	應屆畢業生核心能力達成度問卷調查及結果分析	☐ 有對每一位應屆畢業生進行核心能力達成度問卷調查 ☐ 有對結果進行分析及反思 ☐ 有與 Capstone 課程評量結果進行比較
規範 4 課程組成	畢業生成績單（學分）分析	☐ 有 6 份樣本 ☐ 學生修課是否滿足各規範要求： EAC－數學及基礎科學課程各 9 學分且合計 32 學分以上 TAC/GTAC：實驗或實作 8 學分以上且總計不少於 288 小時 CAC－數學課程 9 學分以上 DAC－設計實作 32 學分以上 AAC－建築設計實作 32 學分以上/AAC-SPD－設計實作 25.6 學分以上
規範 4 課程組成	必修專業課程的課程文件夾	☐ 每門必修專業課程都有資料夾 ☐ 有課程綱要、講義、試卷/答題卷樣本、作業、課程分析及反思表等 ☐ 必修課都有課程分析及反思表
規範 4 課程組成	Capstone 課程及學生成果	☐ Capstone 課程確認清單之填報符合 IEET 要求 ☐ 查證 Capstone 課程填報內容與實際課程執行是否一致 ☐ 檢視學生所嘗試解決的問題是否符合： Complex Problem－EAC/CAC/AAC/DAC Broadly-defined Problem－TAC/GTAC ☐ 學生嘗試解決問題的過程是否滿足「設計」的過程，也就是從定義問題、界定限制、集思解決方案、選擇最有效方案、試做、測試、修改及溝通表達等完整過程 ☐ 每一個學生團隊的成果報告書、口頭報告 PPT 及作品
規範 9 持續改善成效	持續改善機制	☐ 具內迴圈機制，如課程委員會、環安衛委員會等 ☐ 具外迴圈機制，如諮詢委員會等
規範 9 持續改善成效	落實持續改善機制	☐ 內迴圈會議紀錄及執行成果 ☐ 外迴圈會議紀錄及執行成果 ☐ 諮詢委員會有檢視規範 1 校友及雇主問卷調查結果 ☐ 諮詢委員會有檢視規範 3 Capstone 課程評量結果及畢業生問卷結果 ☐ 諮詢委員會有檢視規範 4 課程組成與業界需求之間關係

After Visit… IEET Team will be reviewing:



Accreditation Reports



Note: All reports are written by the accreditation teams.

2019 IEET Guideline for Drafting Accreditation Statement

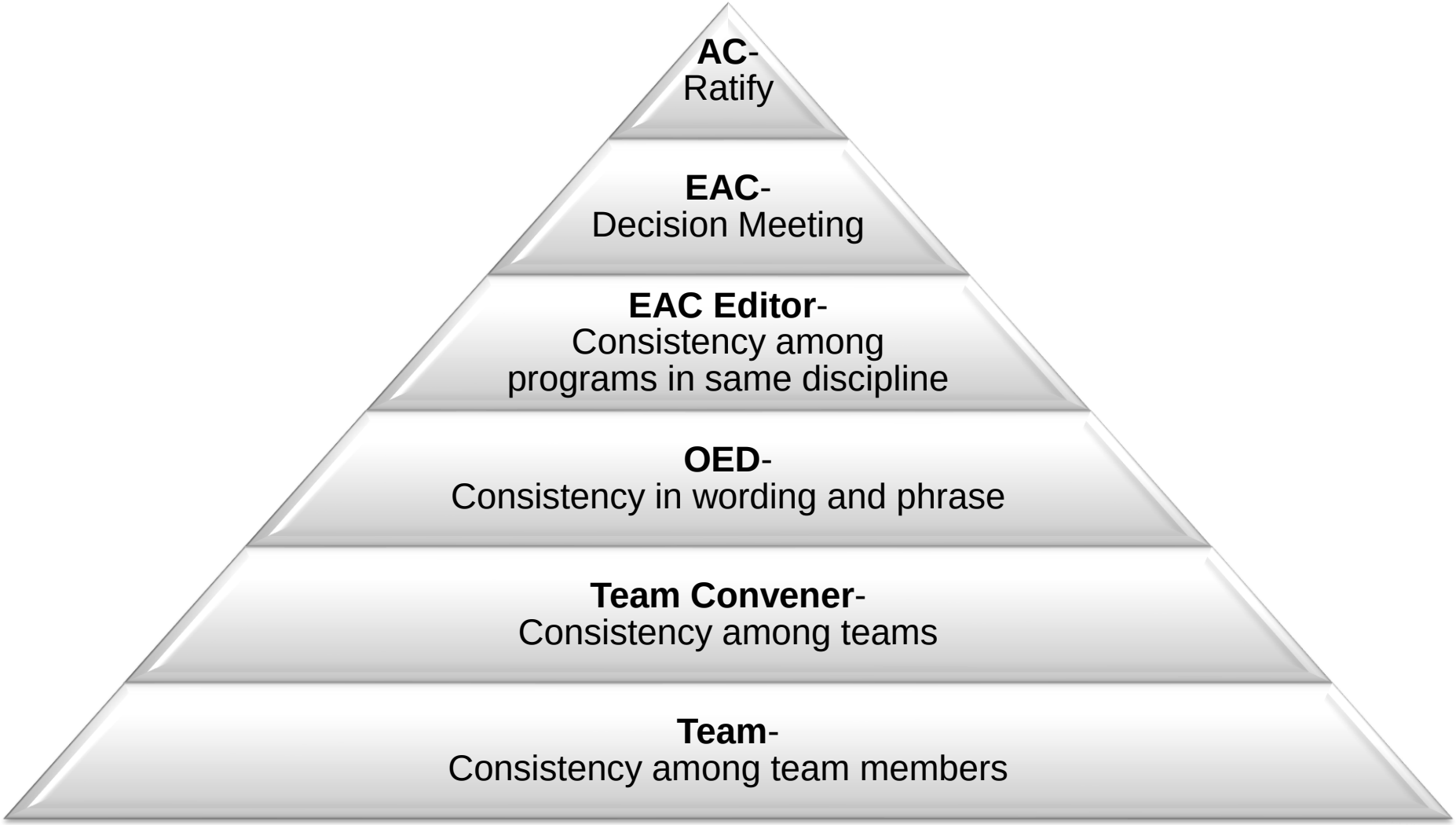
Statement:

1. The number of statements, including strength and area for improvement, for each criterion should not go beyond the criteria.
2. Statement should not express nor imply any cross-institutional or cross-program comparison or have direct wording on student-teaching staff ratio or related wording.
3. Strength should be statement that are of uniqueness of the program. No statement is needed if a program is simply in compliance of a criterion.
4. Area for improvement should be statement of incompliance of the criterion. Accreditation teams are recommended to write the statement with specific attention to: "what does the criterion require?", "Did documents provided by the program prove compliance?", and "what are the possible impact due to incompliance of the criterion?".
5. Findings of substantiality should be reflected in the statement and not just expressed verbally to a program or placed in the observation section.
6. Other comments not related to the criteria should be placed in the observation section with no more than two statements in principle.
7. Statement must be checked and modified if appropriate after receiving a program's Response to Exit Statement. Adding new statement, especially in area for improvement, is not recommended for the program would not have opportunity to reply.

Level of Criteria Compliance and Accreditation Action:

1. Level of criterion compliance should be consistent with the strength and area for improvement. If the compliance level for a criterion is either "Concern", "Weakness" or "Deficiency", statements must be clear and precise. If the comments are simply minor suggestions, "Observation" should be given to that criterion.
2. In accordance with OBE, criterion 1, 3, 4, and 9 are the most important criteria.
   - 2.1 If criterion 4 failed to receive "Observation", criterion 3 should not be "Observation".
   - 2.2 If criterion 3 and 4 failed to receive "Observation" due to the insufficiency of improvement, criterion 9 should not be "Observation".
   - 2.3 Criterion 9 is Continuous Improvement. If a program exhibits appropriate system of continuous improvement in place with progress, it is considered as in compliance with the criterion.
   - 2.4 Due to lack of time to implement continuous improvement system, criterion 1, 3, 4, and 9 are recommended not to be given "Observation" to program entering accreditation for the first-time in order to monitor the program's system and progress of continuous improvement.
3. If most of the programs within a department are entering the second accreditation cycle while a new program is introduced, the new program must have an Interim Review with Visit as well.
4. For program entering second accreditation cycle and if most criteria received "Observation" (including criterion 3, 4, and 9) and few criteria have "Concern", Next General Review should be recommended. If the self-study report and relevant documents are not sufficient in providing proof of compliance of criteria but the program is able to prove compliance during the on-site visit, a one-year accreditation action is recommended.
5. If a second or beyond cycle program under Interim Review shows lack of evidence of continuous improvement in criterion 1, 3, 4, and 9, a "Not to Accredit" action could be recommended.
6. The accreditation teams are highly recommended to pay special attention to any criterion that are of "Weakness". In case where the program lacks evidence in continuous improvement, the statement and accreditation action should reflect appropriately, such as recommending a less than 3-year accreditation period for the accreditation action.

Six-Level of Consistency Checks



Decision Meeting Follows Transparent and Objective Procedures

Welcome & Introduction

Confirmation of Meeting Procedures

Nomination of Scrutinizer

Non-consent Case Chair Presentation, Floor Discussion and Vote

Consent Case Discussion and Voting

Vote Count

Confirmation of Actions

Closing

Decision Meeting Procedures

Institute of Engineering Education Taiwan

Engineering Accreditation Commission

2018 Accreditation Decision Meeting Agenda

January 29 (Tuesday), 9:30 am to 4:00 pm, meeting reporting time: 9:00 am
Room 509, General Building, Taiwan Normal University
No. 1, 129, Sec. 1, Heping E. Rd., Da'an Dist., Taipei

Agenda

1. Welcome and Introduction- Meeting Chair (Commission Chair)
   - 1.1 Opening remarks by chair
   - 1.2 Roll calls
2. Meeting Procedures Overview- Executive Director
   - 2.1 Confirmation of the conflict of interest and confidentiality clauses
   - 2.2 Review of IEET six levels of consistency checks
   - 2.3 Review of guidelines for drafting accreditation statement
   - 2.4 Decision meeting documents
     - 2.4.1 On-site meeting materials
     - 2.4.2 Overview of accreditation decision list
   - 2.5 Review of Voting Provisions
   - 2.6 Review of Voting Procedures
     - 2.6.1 Team chair reporting
       - 2.6.1.1 Level of compliance by criterion
       - 2.6.1.2 Status of continuous improvement
       - 2.6.1.3 Accreditation action recommendation
     - 2.6.2 Comments from the team convener, editor, executive director
     - 2.6.3 Discussion and motion
     - 2.6.4 Vote on motion
   - 2.7 Confirmation of above procedures
3. Nomination and Confirmation of Vote Tallymen- Meeting Chair
4. Decision Making Begins- Meeting Chair
   - 4.1 Non-consent cases
   - 4.2 Consent cases
5. Announcement of Voting Outcomes- Meeting Chair
   - 5.1 Vote counts
   - 5.2 Confirmation of the actions
6. Adjourn- Meeting Chair
   - 6.1 Concluding remarks by Chair
   - 6.2 Adjourn

Institute of Engineering Education Taiwan
Accreditation Decision Meeting Voting Provisions

Applicable for 2018 Accreditation Decision Meetings

1. Case Grouping:

(1) Non-consent case: Programs being/falling under one of the followings:
   1. General review.
   2. Subsequent review after provisional status.
   3. Subsequent review after receiving action pending in the last review.
   4. Interim review with inconsistent recommendations between visit team and editor on one of the followings:
      1) Years to be accredited.
      2) Level of compliance on two or more criteria.
      3) None of the above but the case has editorial comments in the accreditation statement and was suggested to be a non-consent case by editor.
   5. Interim review with a non-NGR recommendation and the accredited length is shorter than the previous review.
   6. Any consent case that is motioned by the assembly to be non-consent case.

(2) Consent case: Interim review programs that the visit team and editor are in consen on one of the followings:
   1. Years to be accredited and level of compliance of all criteria.
   2. Years to be accredited and level of compliance of all but one criterion.

2. Voting:

(1) Voting right: Commissioners, visit conveners, and visit team chairs all have one vote per case; those who have duel positions, their individual vote still count as one valid vote. Those who have conflict of interest with a subject case must be excused when the case is being discussed and voted.

(2) Vote casting:
   1. Non-consent cases: One vote per case. Program name and its related information on level of compliance and accreditation action on will be displayed one at the time.
   2. Consent cases: List of all program names and their related information on level of compliance and accreditation actions will be displayed on a single webpage and be voted on at the same time.

(3) Voting method: Anonymous voting. Votes are to be casted electronically by the order of the cases presented through the Accreditation Management System (AMS). A ballot is casted when the affirmative or negative button is pressed. For voter with conflict of interest, no ballot of the conflicted case will be presented. The next valid ballot will be shown when voting page is refreshed

3. Ballot Types and Counting:

(1) Conflict of interest ballot: Ballot that is invalid due to conflict of interest. Office of the Executive Director will exclude these ballots before the decision meeting.

(2) Count of ballots to be collected: Sum of total ballots (from total of voting attendees) minus conflict of interest ballots.

(3) Void ballot: Ballot that was not casted due to the voter was absent from casting or refused to cast.

(4) Count of valid ballots: Sum of total ballots from affirmation, negative and void ballots. To be the same as count of ballots to be collected.

4. Vote Calling:

(1) The meeting chair will appoint a tallyman.

(2) A motion is carried with a simple majority.

(3) In case where a motion is lost, it needs to be debated and voted again. Second debate is limited to once per a case.

(4) The chair and the tallyman will double check the vote inventory and racking report and sign them.

(5) The chair will announce the result of the votes.

Categories of Accreditation Action

Level of Compliance w/ Criteria

- Observation
- Concern
- Weakness
- Deficiency

→

Accredited

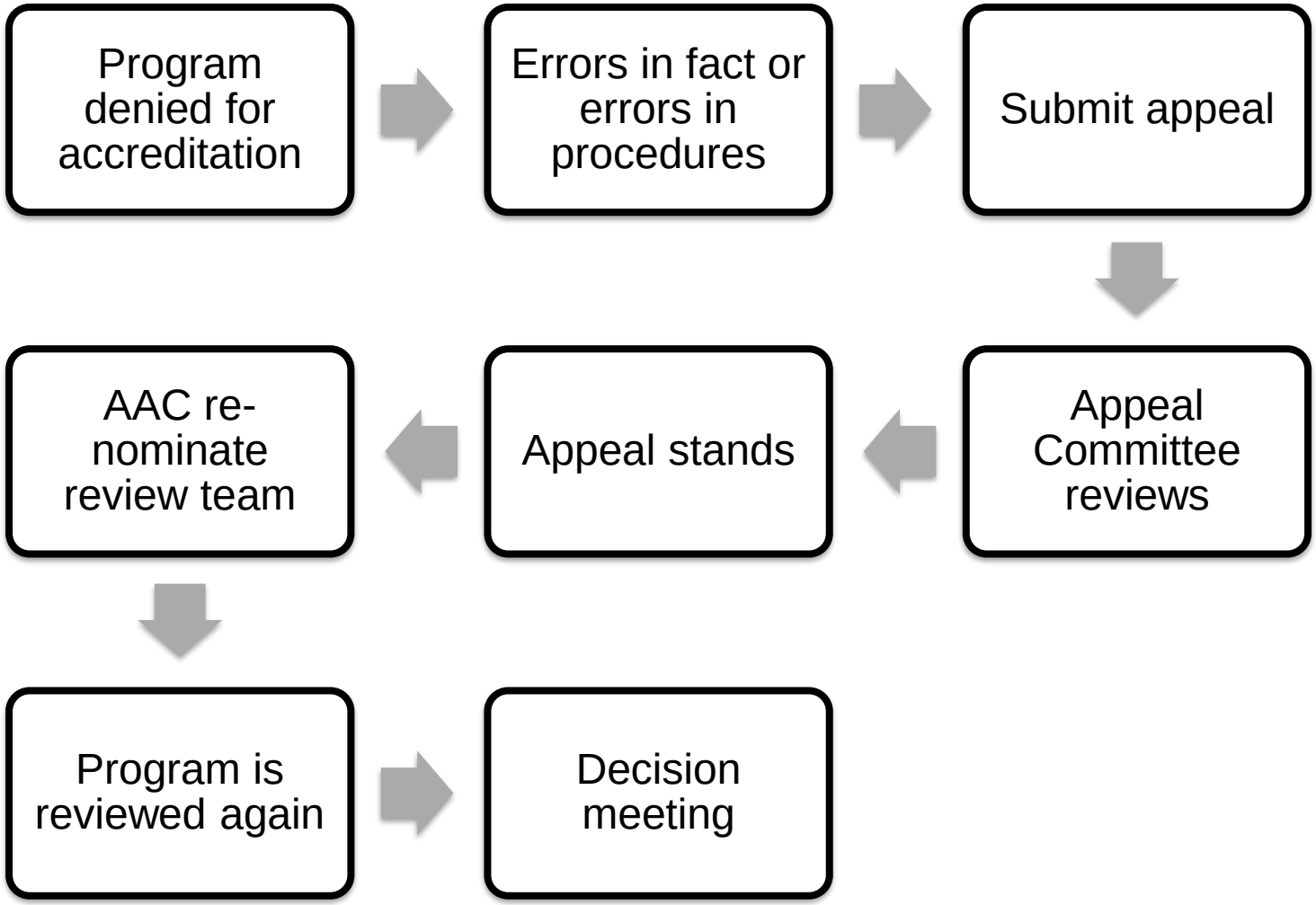
- Next General Review (6 years)
- Interim Review (3 years)
- Provisionally Accredited

Accreditation Pending

Not to Accredit

Accreditation Teams make holistic judgement on level of compliance for each criterion and accreditation decision.

Appeal Policy is in Place



IEET e system

AMS

Accreditation Management System

for PEVs

Allows Accreditation Teams:

1. Read documents anytime anywhere
2. Write statement anytime anywhere
3. Integrate comments from all evaluators in a team
4. Streamline the consistency discussion

Accreditation Management System

http://ams.ieet.org.tw

Functions of AMS

- Evaluators can access program information at anytime and from anywhere using the internet.
- Accreditation statements can be edited and be combined into Exist Statement online.
- Simplify consistency check process through easy access of the accreditation statements.
- Provide latest training for evaluators at anytime and from anywhere.
- Elimination of waste and save time by being paperless.
- Gathering of Big Data on related accreditation information.

AMS- Evaluator Training Materials

You can access the evaluators training materials and the Evaluator Manual at “Training”.

IEET 中華工程教育學會

AMS- Administration

You can access "Administration" to complete information on transportation, dietary requirements, additional supplements from program, and conflict of interest checklist. You can also access information on accreditation team, hotel, and pre-departure notice.

AMS- Writing Accreditation Statements

After reviewing documents from program, you can start to write accreditation statements. Click “Accreditation Statement” to start. For more information, please review the AMS user’s manual.

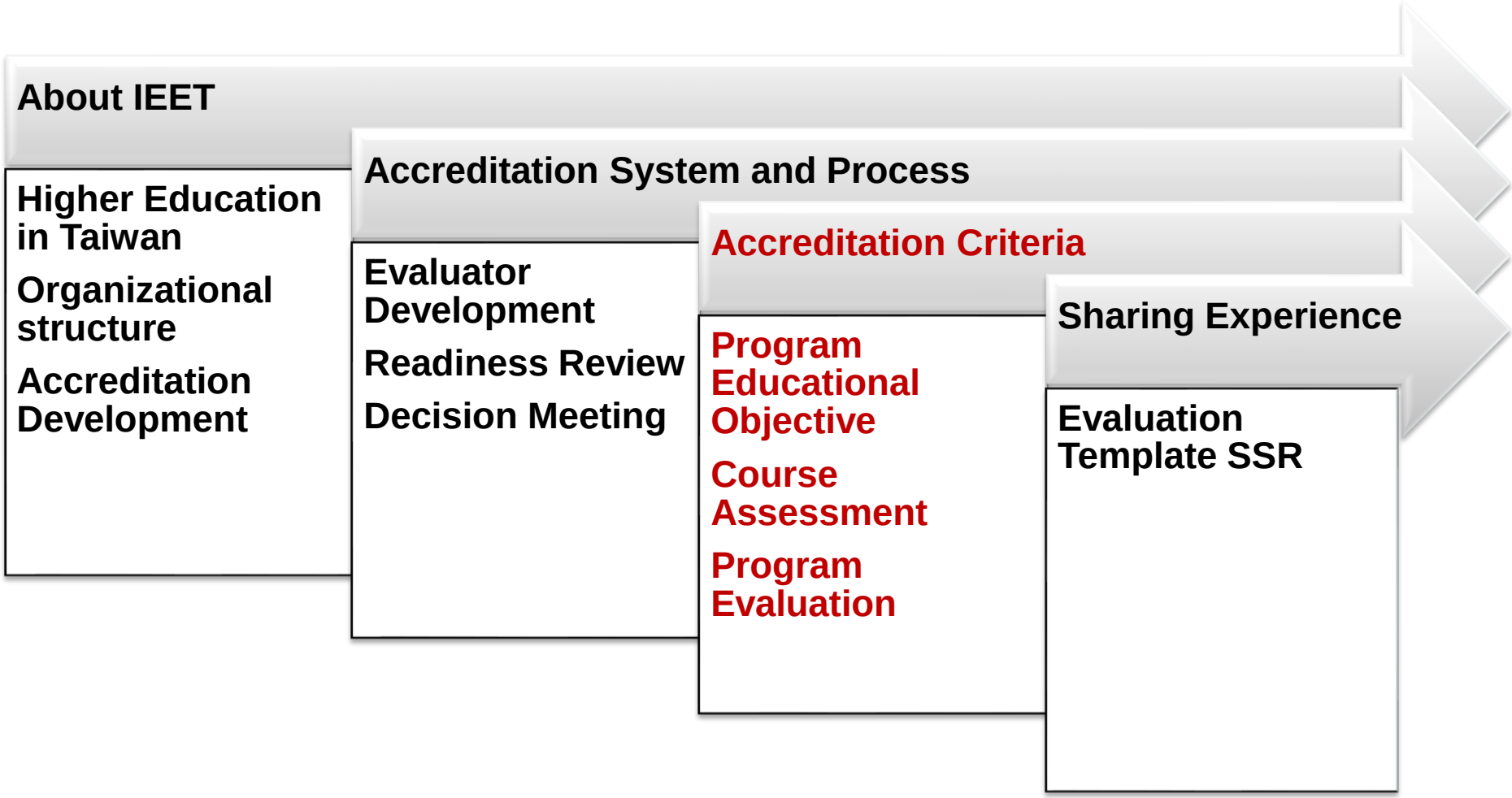
AMS- Accessing Program Documents (1/2)

You can click “Program Document” to access all documents from the program, including SSR, attachments, and previous IEET statements (if any).

AMS- Accessing IEET Accreditation Manual

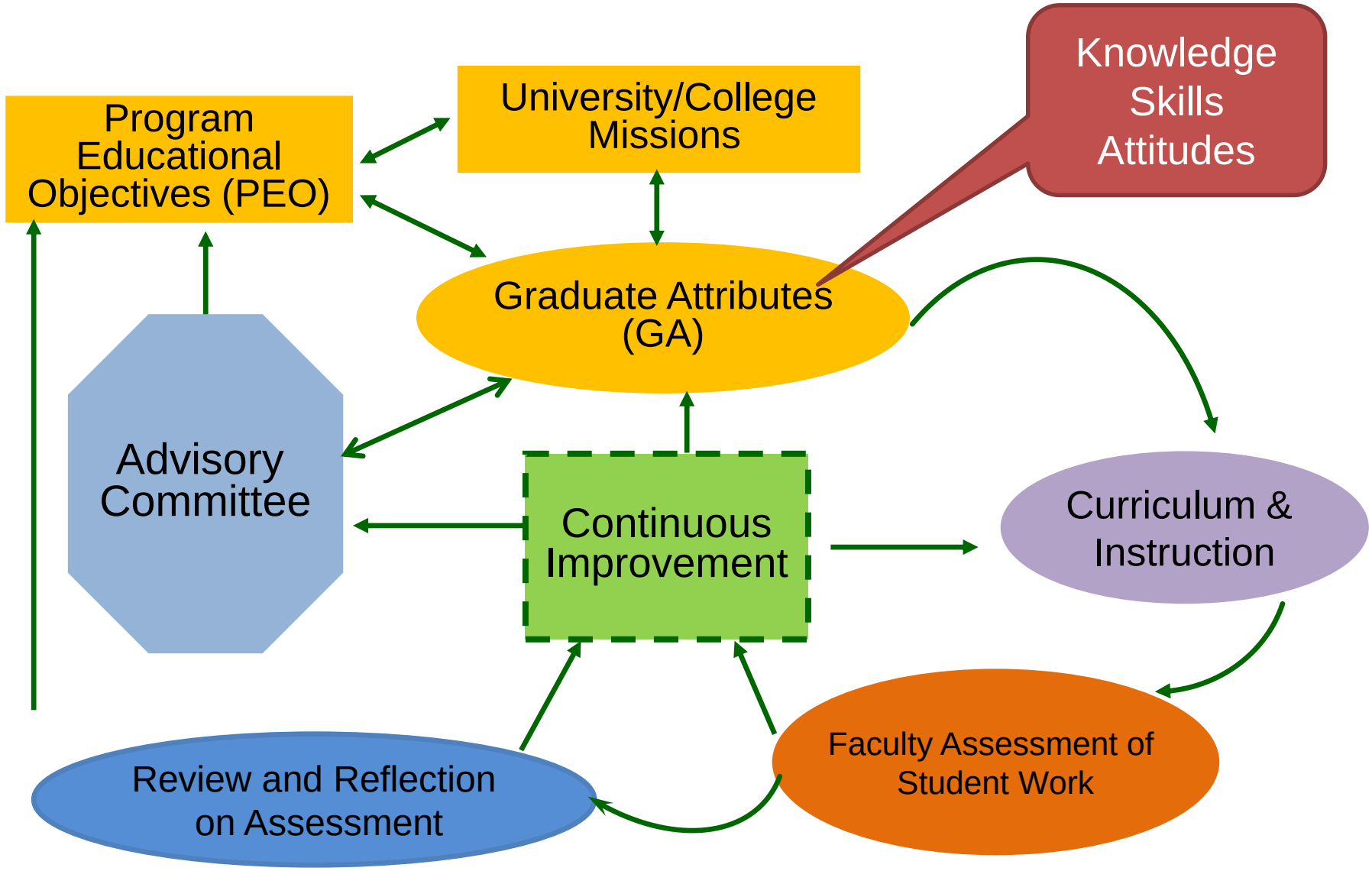
You can click “IEET Manual” for the latest Accreditation Manual.

Outlines



ABET Promotes OBE since 2000 with *EC2000 Criteria*

Outcomes-based Education (OBE)



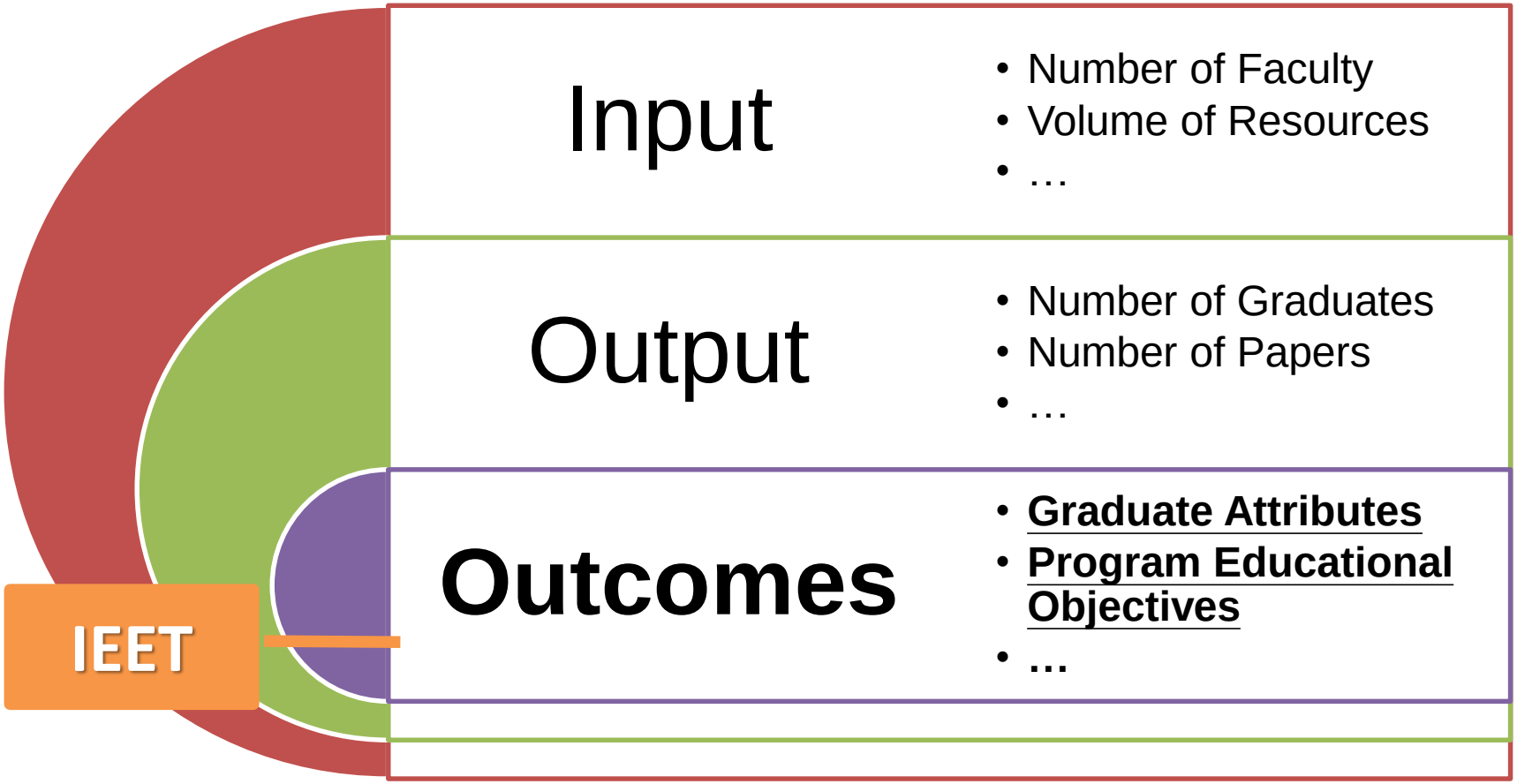
OBE, What…

"**Outcome-based education (OBE)** means clearly focusing and organizing everything in an educational system around what is essential for all students to be able to do successfully at the end of their learning experiences. This means starting with a clear picture of what is important for all students to be able to do, then organizing curriculum (outcome), instruction (activity), and assessment to make sure this learning ultimately happens"

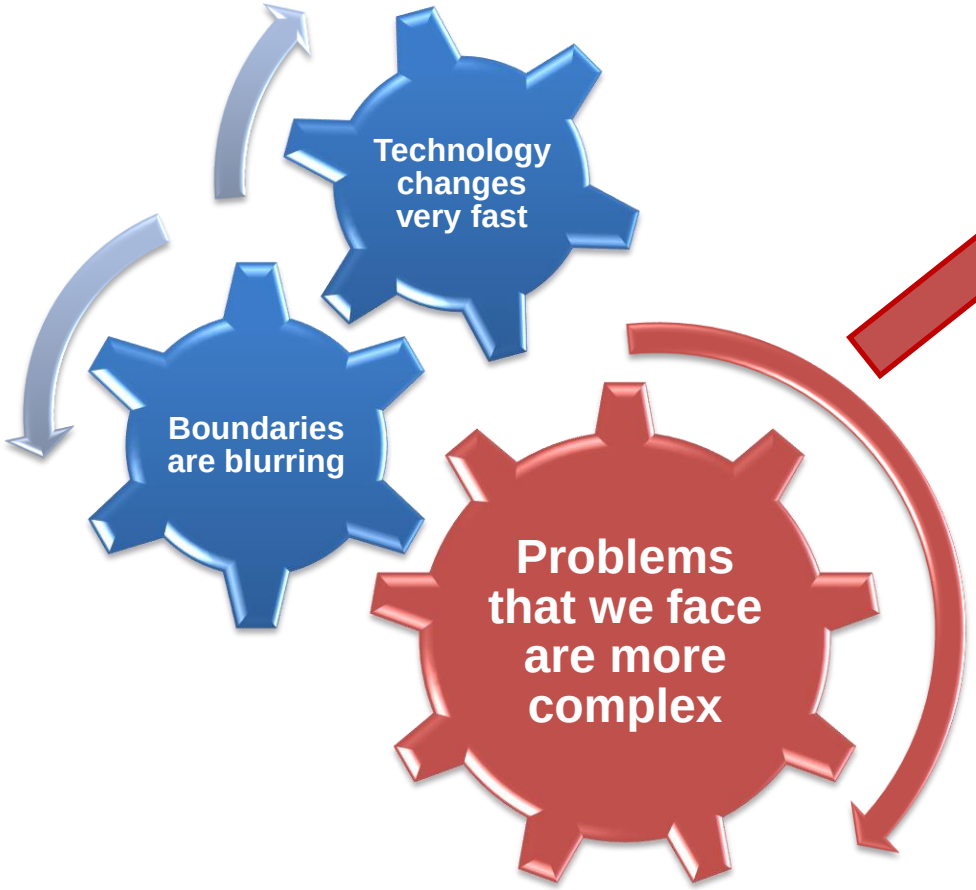
Outcomes Based Education: Critical Issues

by William Spady (1995)

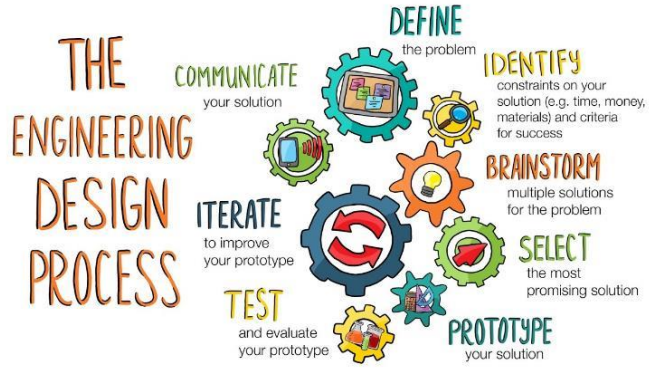
What are Student Outcomes?



Why OBE ?



Jigsaw curriculum is no longer sufficient

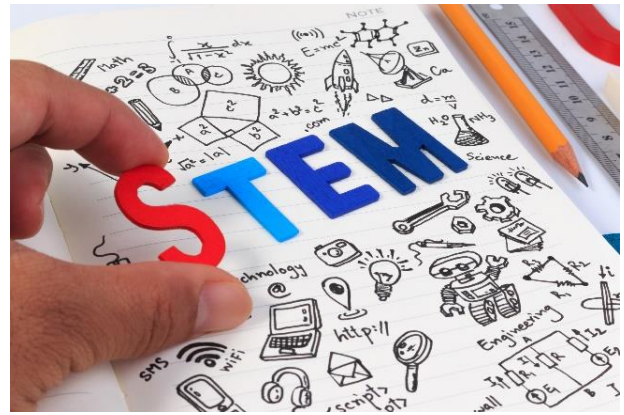


Contemporary education must allow students to "learning by doing"

Problem/Project-based Learning (PBL)

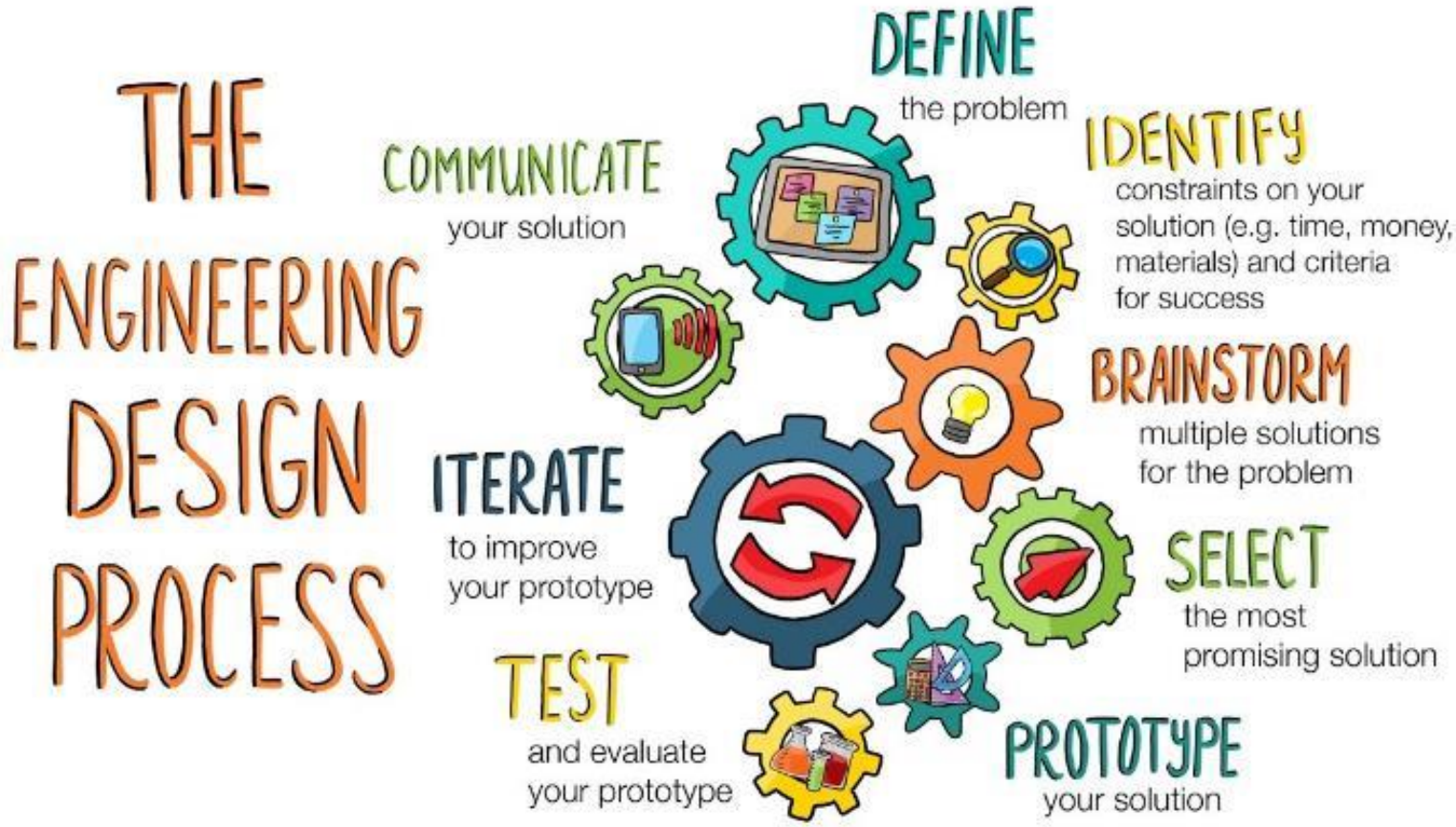
Medicine
Engineering
Business
Moving to OBE

Outcomes/ Competency-based Education (OBE)



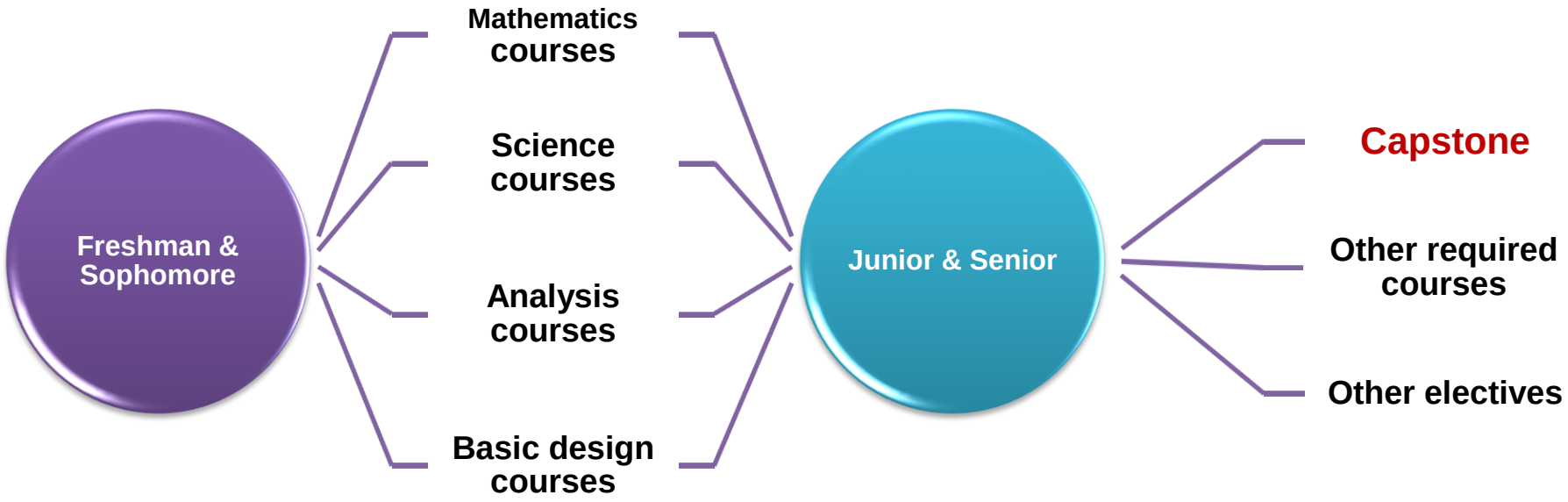
LEARNING BY DOING

Engineering Design

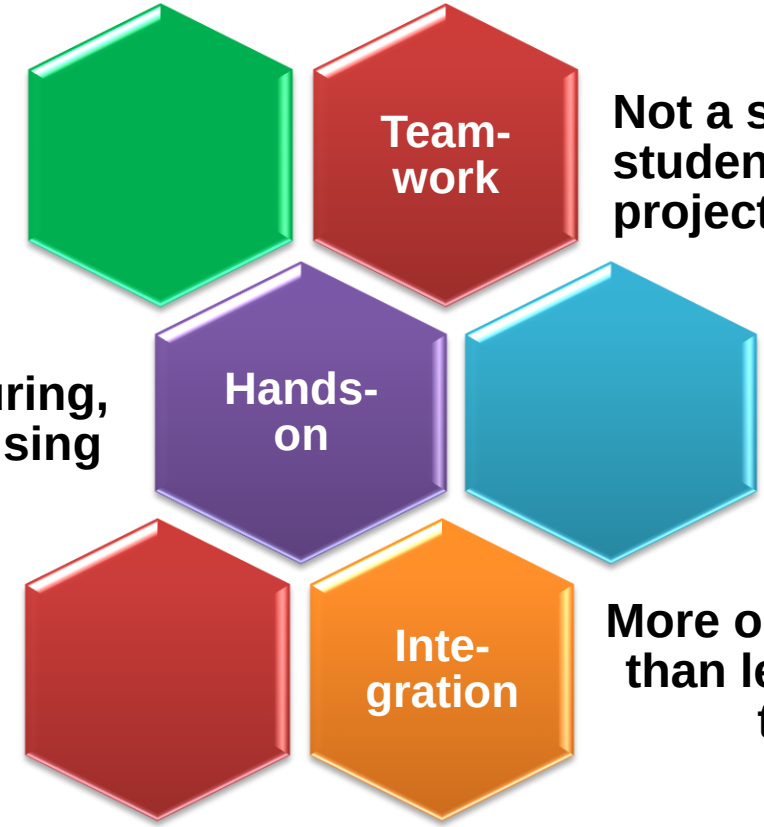


IEET Requires Capstone
Capstone Course is the Last Mile

Capstone only for Bachelor's Degree Program



Key of Capstone Course is Teamwork, Hands-on, Integration



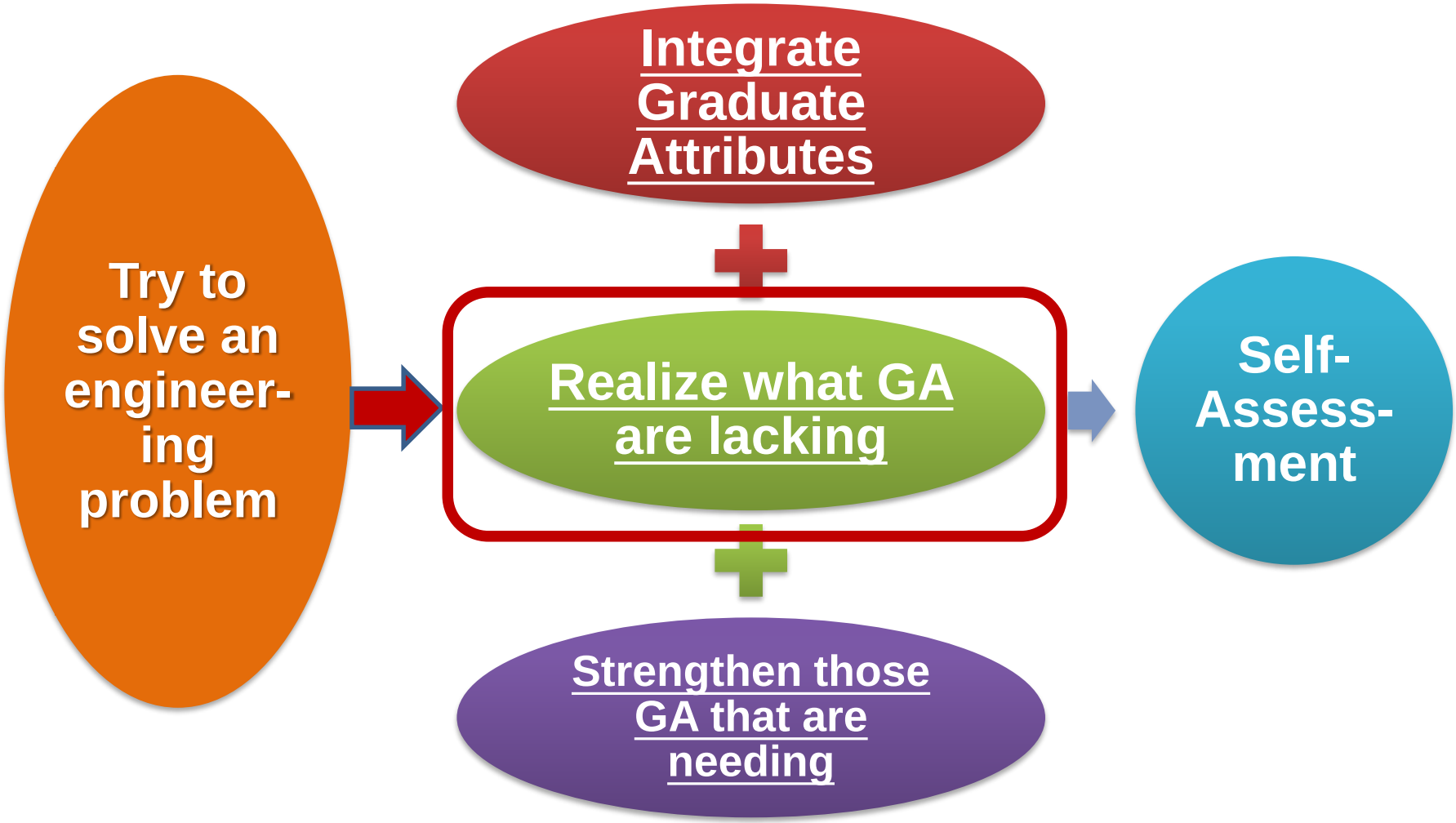
Not a single student project

Less lecturing, more advising

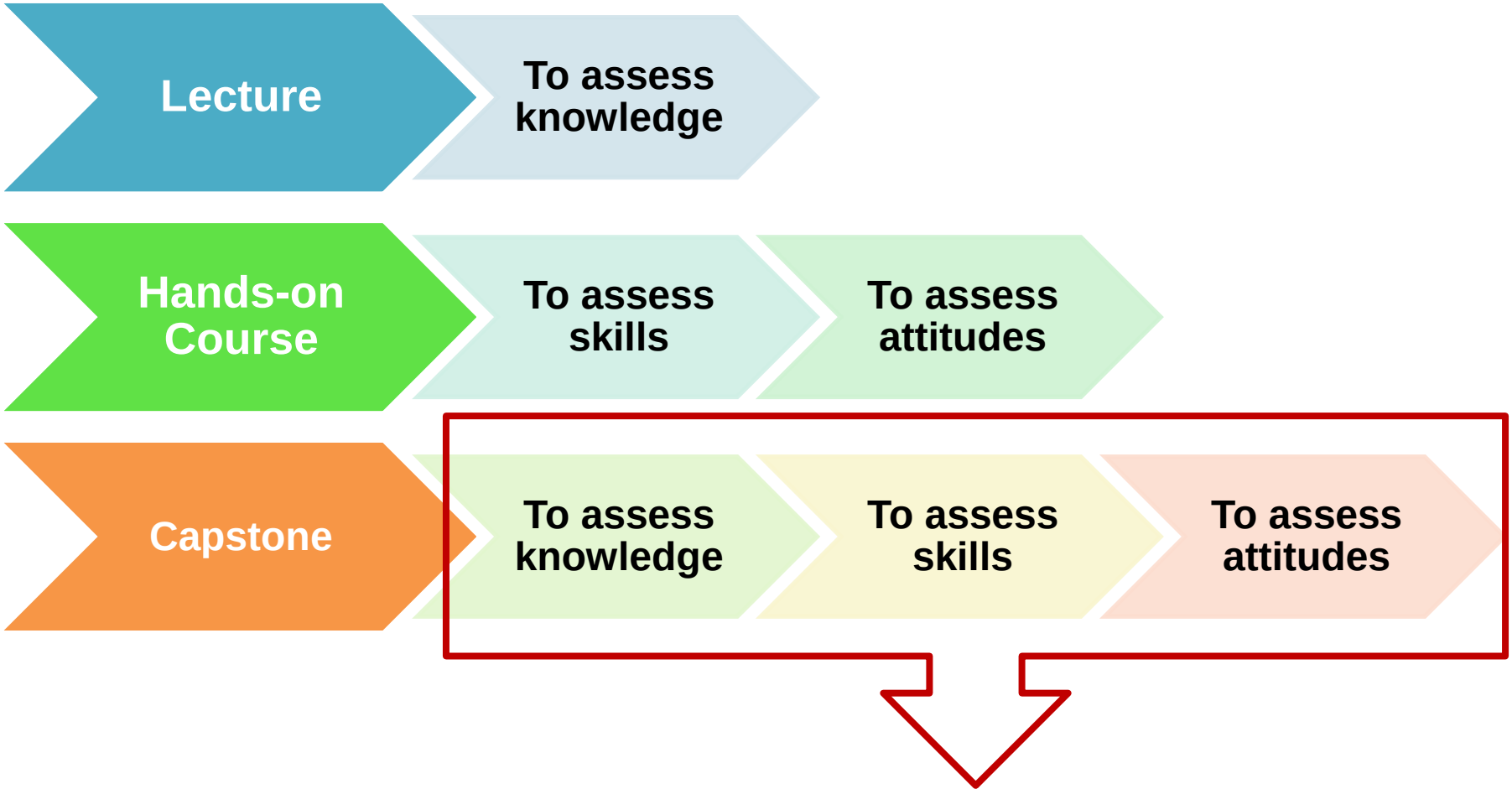
More on integration than learning new things

Capstone Provides Culminating Experience

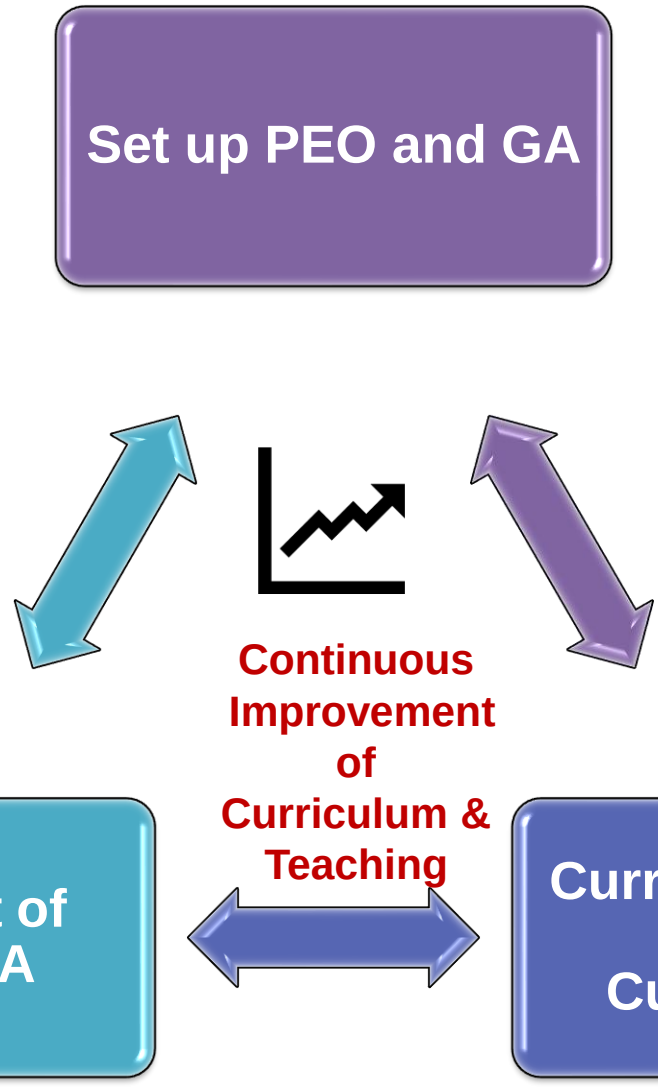
Teamwork Hands on Integration



Use Capstone to Assess GA



OBE, How…

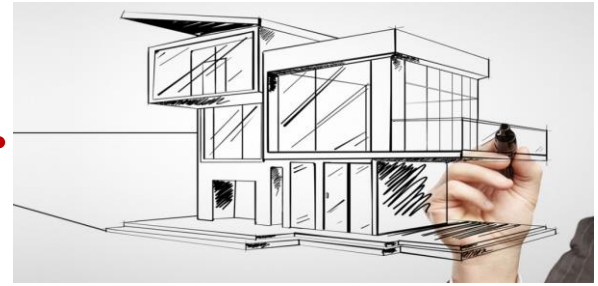


Ability in Engineering Design = Student Outcomes

Knowledge allows students to know how to think and to design

Skills allow students to learn through experiencing and hands-on

Attitudes allow students to learn to work with others, self-recognition and confidence



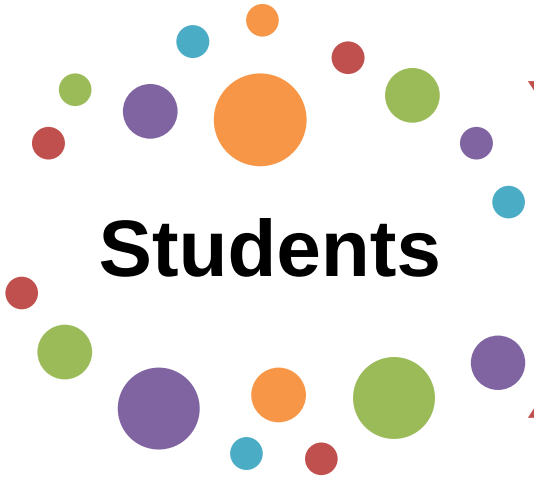
Graduate Attributes vs Program Educational Objectives

Graduate Attributes
(at time of graduation)

- Knowledge
- Skills
- Attitudes

Program
Educational Objectives
(Achievement 3~5 years after graduation)

- Professionals who are able to arichitectural design, contribute to the betterment of the society
- Professionals who are capable of life-long learning



Students

Graduates

Alumni

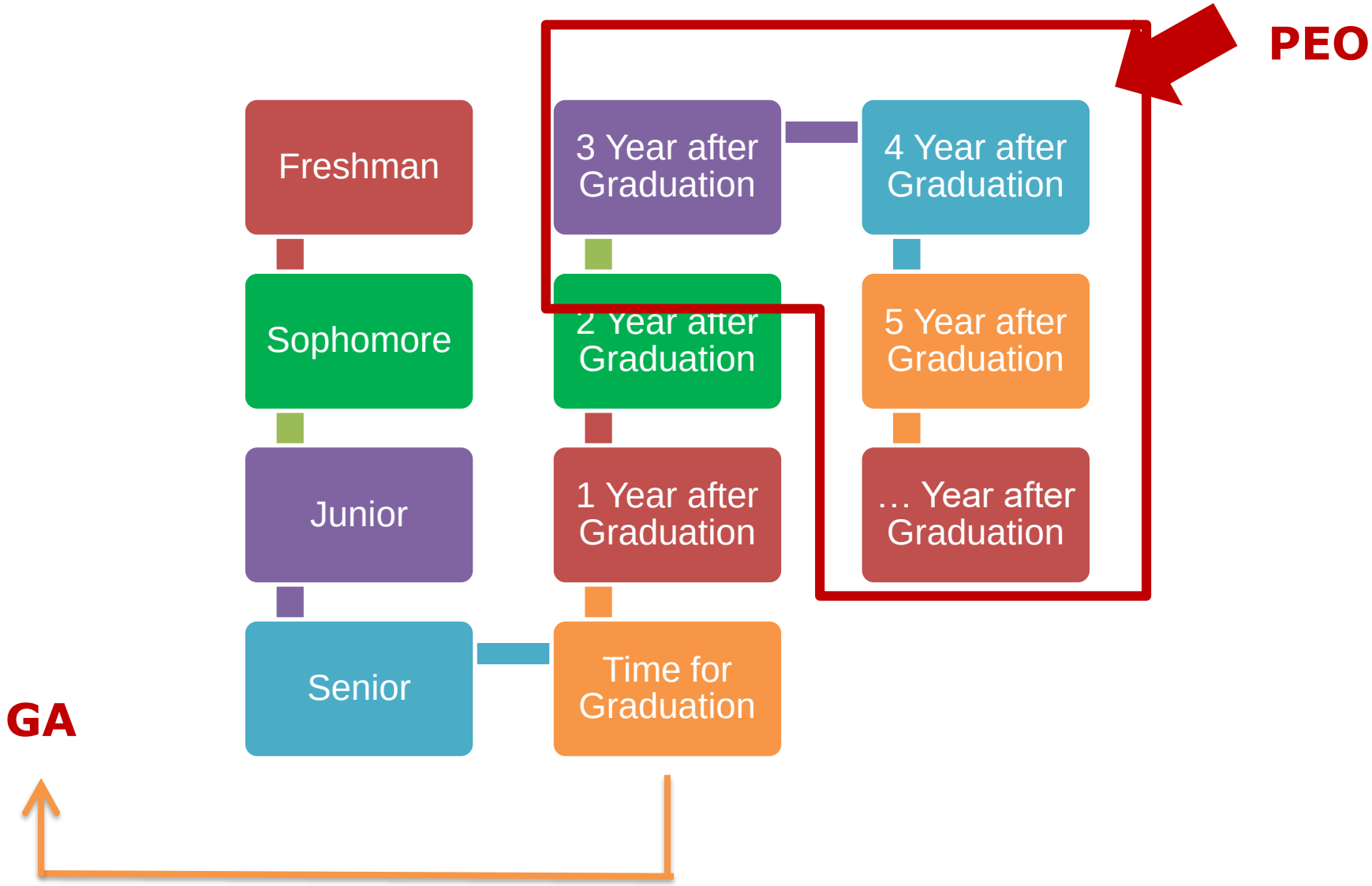
Assessment of the classes (Cultivating GA)

Assessment of the GA

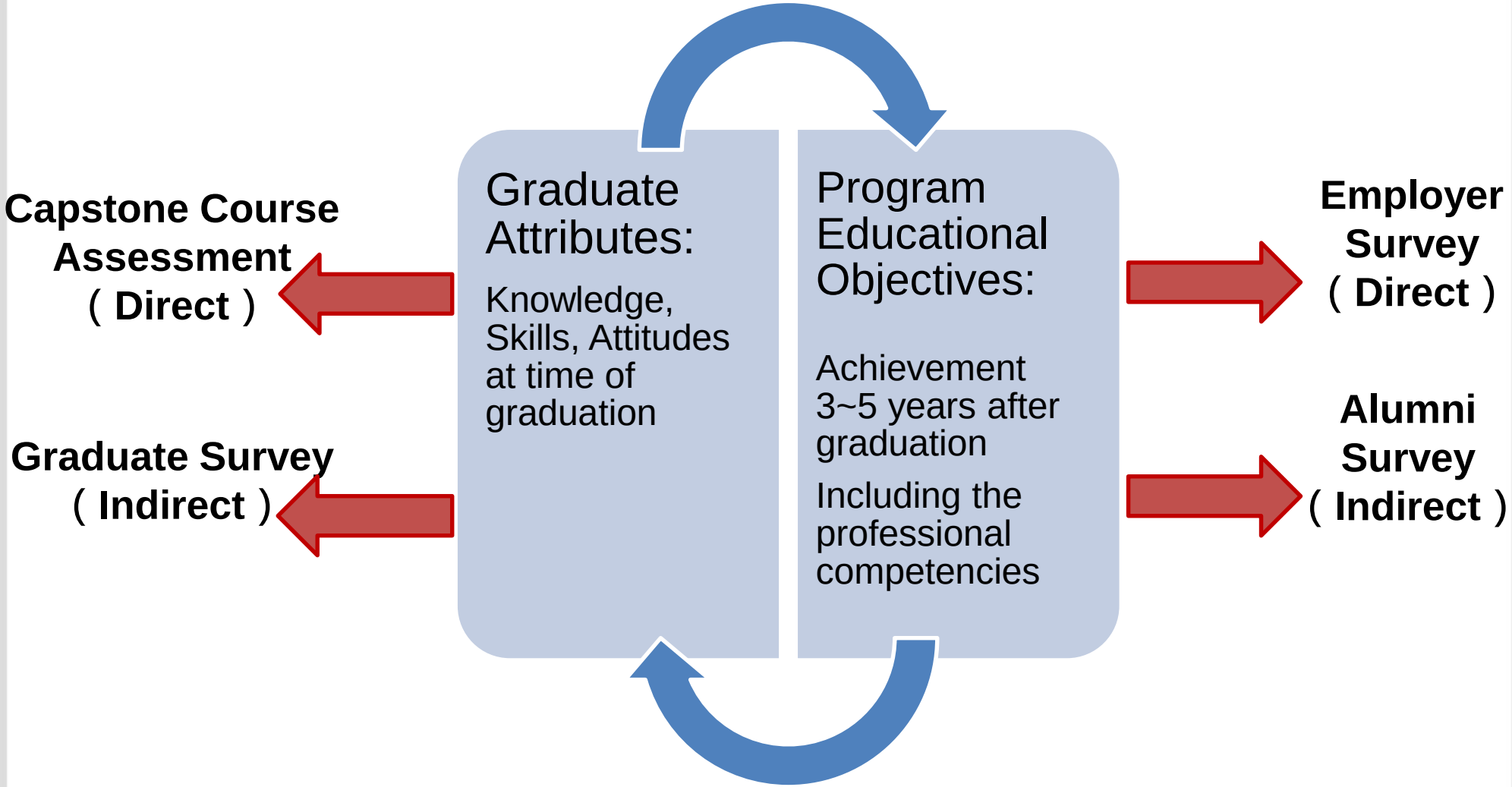
Assessment of the PEO

Possess entry-level professional competency

PEO and GA Assessment Point



Differentiate Assessment of PEOs and GAs



Each Program Must have an Advisory Board

WHO

About 10 people:

- Industry
- Alumni
- Academia
- …

No:
Administrator or academia from its own university

WHAT

1. **Help to set**：
   PEO, GA, and curriculum
2. **Review on an annual basis**：
   Student outcomes, capstone course outcomes, faculty feedbacks, etc.

WHEN

At least Once a Year

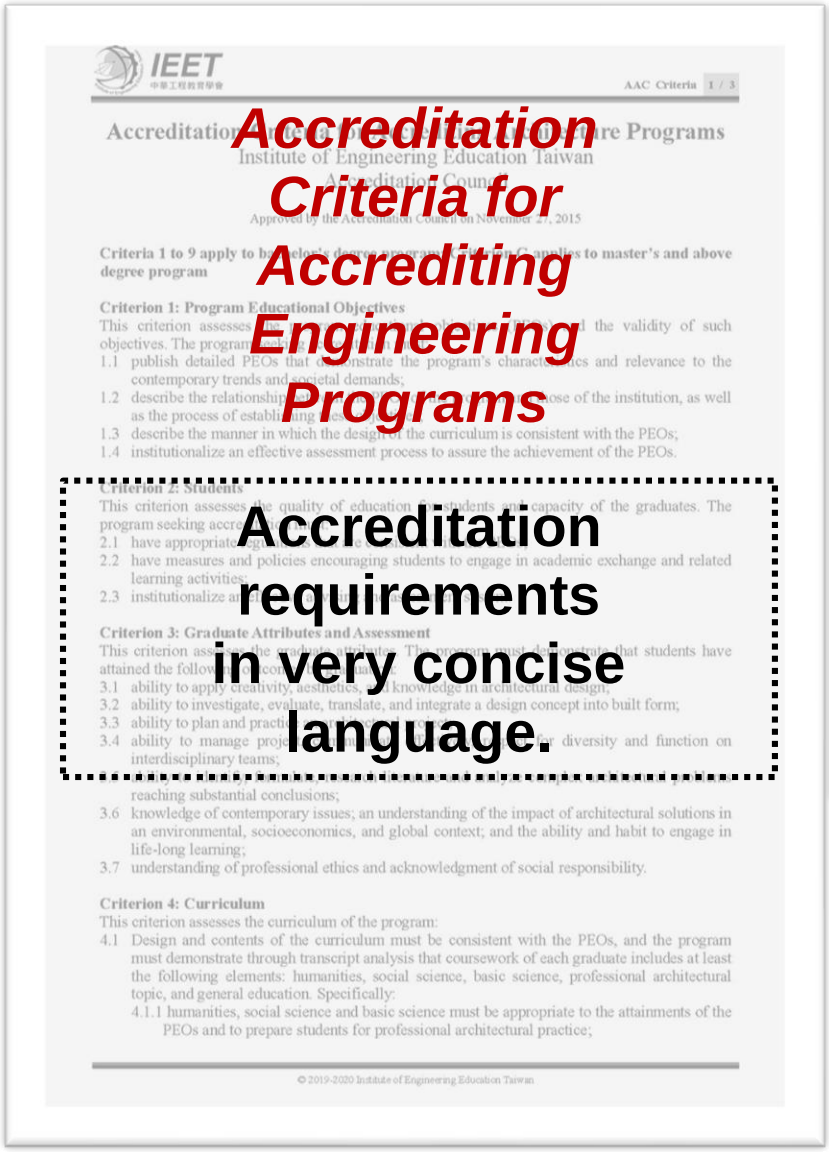
Structure of IEET Accreditation Manual

Accreditation Criteria

Policies and Procedures

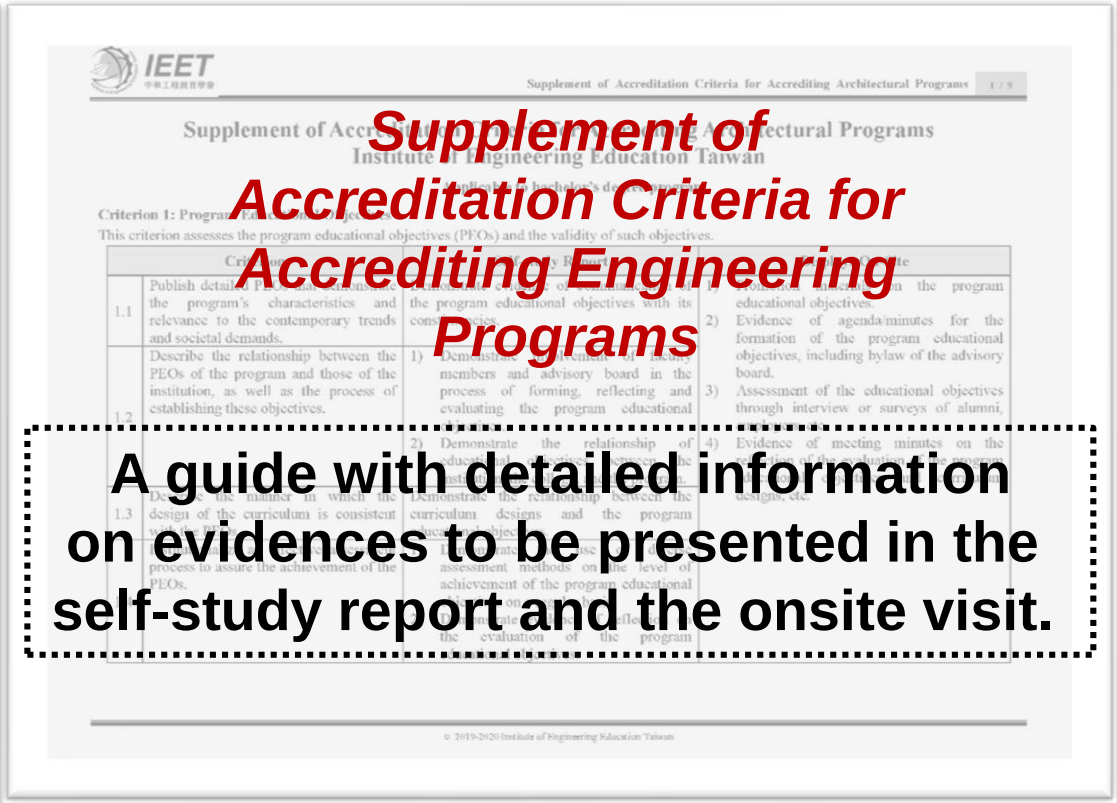
Templates for Self-study Report

Documents Relating to Criteria



Accreditation Criteria for Accrediting Engineering Programs

Accreditation requirements in very concise language.



Supplement of Accreditation Criteria for Accrediting Engineering Programs

A guide with detailed information on evidences to be presented in the self-study report and the onsite visit.

Both are public information for programs under review as well as IEET accreditation teams to ensure transparency

Nine Elements of Accreditation Criteria

1. Program Educational Objectives
2. Students
3. Graduate Attributes
4. Curriculum
5. Faculty
6. Space and Facility
7. Funding and Support
8. Program Criteria
9. Continuous Improvement

Criterion 1
Program Educational Objectives (PEO)

1.1 publish detailed PEOs that demonstrate the program's characteristics and relevance to the contemporary trends and societal demands;

1.2 describe the relationship between the PEOs of the program and those of institution, as well as the process of establishing these objectives;

1.3 describe the manner in which the design of the curriculum are consistent with the PEOs;

1.4 institutionalize an effective assessment process to assure the achievement of the PEOs.

Program Setting Up PEO and GA

- Program drafts PEOs and GAs
- Advisory Committee reviews and comments
- Program finalizes PEOs and GAs
- Program communicate PEOs and GAs to students, parents, society at large
- Program revises PEOs and GAs on a regular basis based on alumni and industry feedbacks

PEO (Example)

Program A.

1. Possess basic professional knowledge and skills.
2. Possess basic communication and implementation skills for practice.
3. Possess basic research skills.
4. Possess humanities and skills of service for the society.

Program B.

1. Possess professional knowledge and technology application abilities.
2. Possess teamwork.
3. Possess international scope of view.

PEO (Example)

Program C.

Cultivating professional knowledge and its application, research abilities, leadership, professional ethics in the engineering fields to be leaders in the technology innovation, environmental protection and sustainability.

Program D.

Cultivating humanities and scientific spirit, balanced knowledge in theories and practice, able learners in independent thinking, innovating knowledge and international scope of view.

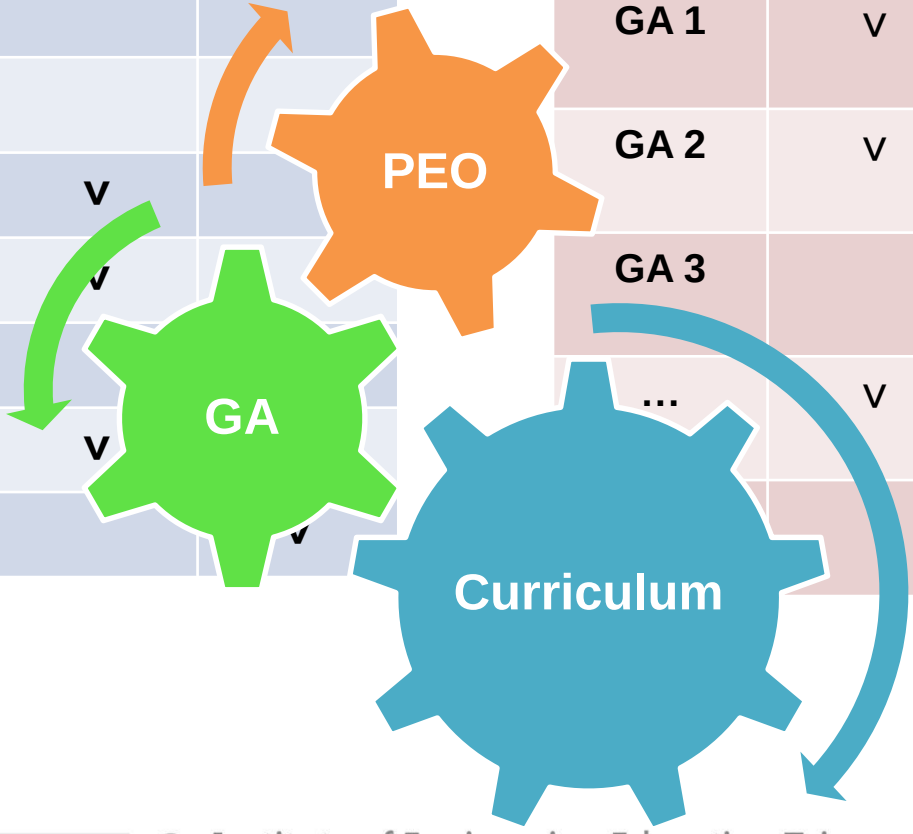
What's the problem with this kind of description?

Hard to do assessment

Relationship between Curriculum and PEO

Relationship between Course and GA

Course	GA 1	GA…	GA 8
…	V		
Course 1	V		
Course 2	V	V	
…		V	
Course 3	V		
Course 4	V	V	
…			V



Relationship between GA and PEO

GA	PEO 1	PEO…	PEO 4
GA 1	V		
GA 2	V	V	
GA 3		V	
…	V	V	V
			V

Alumni Survey

	5 Very Important	4 Important	3 Neutral	2 Less Important	1 Not At All Important
1. Exhibit professional competency of a civil engineer					
2. Exhibit capacity for independent practice and team work to solve increasingly complex engineering problem					
3. Exhibit capacity for life-time learning					

Ask about Importance of PEOs

	5 Highly Agree	4 Agree	3 Neutral	2 Disagree	1 Highly Disagree
1. Exhibit professional competency of a civil engineer					
2. Exhibit capacity for independent practice and team work to solve increasingly complex engineering problem					
3. Exhibit capacity for life-time learning					

Ask about Fulfillment of PEOs

Employer Survey

	5 Very Important	4 Important	3 Neutral	2 Less Important	1 Not At All Important
1. Exhibit professional competency of a civil engineer					
2. Exhibit capacity for independent practice and team work to solve increasingly complex engineering problem					
3. Exhibit capacity for life-time learning					

Ask about Importance of PEOs

	5 Highly Agree	4 Agree	3 Neutral	2 Disagree	1 Highly Disagree
1. Exhibit professional competency of a civil engineer					
2. Exhibit capacity for independent practice and team work to solve increasingly complex engineering problem					
3. Exhibit capacity for life-time learning					

Ask about Fulfillment of PEOs

Criterion 3 Graduate Attributes

1. ability to apply knowledge of mathematics, science, and engineering;
2. ability to design and conduct experiments, as well as to analyze and interpret data;
3. ability to apply techniques, skills, and modern tools necessary for engineering practice;
4. ability to design an engineering system, component, or process;
5. ability to manage project (including budgeting), communicate effectively, work in multi-disciplinary environment, and function on teams;
6. ability to identify, formulate, research literature and analyze complex engineering problems reaching substantial conclusions;
7. knowledge of contemporary issues; an understanding of the impact of engineering solutions in an environmental, societal, and global context; and the ability and habit to engage in life-long learning;
8. apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice, and a sense of respect for diversity.

Program's GA Must Cover all IEET's

Program's GA	IEET Criterion 3						
	3.1	3.2	3.3	3.4	3.5	3.6	3.7
GA 1	1	0	0	1	0	0	0
GA 2	0	1	1	0	0	0	0
GA 3	0	0	1	1	0	0	0
GA 4	0	0	1	1	0	0	0
GA 5	0	0	0	0	1	0	1
GA 6	0	1	0	0	1	1	0
GA 7	0	0	0	1	0	1	1
GA 8	0	1	0	0	1	0	0

Evidence to be Presented by the Program in terms of student outcomes

Self-study Report	Displays On-Site
1) Demonstrate relationship between the program educational objectives and the graduate attributes. 2) Demonstrate the program's graduate attributes encompasses EAC 2016 graduate attributes. 3) Demonstrate achievement of graduate attributes through capstone course. 4) Demonstrate achievement of graduate attributes though graduate surveys.	1) Records of meetings on formation and revision of the graduate attributes. 2) All records and assessments on related engineering courses and capstone course. 3) Related questionnaires and surveys from graduates.

Note: Excerpts from Criterion 3 of the *Supplement of Accreditation Criteria for Accrediting Engineering Programs.*

Capstone Assessment (Student Teams)

Course：Civil Engineering Capstone Project **Year：Junior (2nd Semester)**
Student：Team A/ Smart、Smith、Springfield **Topic：Design of Tamkang Bridge**

#	Graduate Attribute	Weight	Score	Total
1	ability to apply knowledge of mathematics, science, and engineering	**10%**	**90**	**9**
2	ability to design and conduct experiments, as well as to analyze and interpret data	**15%**	**80**	**12**
3	ability to apply techniques, skills, and modern tools necessary for engineering practice	**20%**	**70**	**14**
4	ability to design an engineering system, component, or process	**20%**	**90**	**18**
5	ability to manage project, including budgeting, communicate effectively, work in multi-disciplinary environment, and function on teams	**10%**	**80**	**8**
6	ability to identify, formulate, research literature and analyses complex engineering problems reaching substantial conclusions	**8%**	**80**	**6**
7	knowledge of contemporary issues; an understanding of the impact of engineering solutions in an environmental, societal, and global context; and the ability and habit to engage in life-long learning; and	**10%**	**87**	**9**
8	apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice, and a sense of respect for diversity	**7%**	**85**	**6**
			Total	**82**

Capstone Assessment (Whole Class)

#	Graduate Attribute	Weight	Team A	Team B	Team C	Team D	Team …	Aver-age
1	ability to apply knowledge of mathematics, science, and engineering	10%	90	90	91	89	…	90
2	ability to design and conduct experiments, as well as to analyze and interpret data	15%	80	67	87	74	…	80
3	ability to apply techniques, skills, and modern tools necessary for engineering practice	20%	70	85	90	85	…	88
4	ability to design an engineering system, component, or process	20%					…	68
5	ability to manage project, including budgeting, communicate effectively, work in multi-disciplinary environment, and function on teams	10%					…	72
6	ability to identify, formulate, research literature and analyses complex engineering problems reaching substantial conclusions	8%	80	75	80	75	…	85
7	knowledge of contemporary issues; an understanding of the impact of engineering solutions in an environmental, societal, and global context; and the ability and habit to engage in life-long learning; and	10%	87	80	93	80	-	-
8	apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice, and a sense of respect for diversity	7%	85	78	90	85	…	86
	Team Score		82	76	86	76	…	80

Must improve the training of GA 4 and 5

Graduate Survey (example)

Fullfillment GA	5 Highly Agree	4 Agree	3 Neutral	2 Disagree	1 Highly Disagree	Average
GA 1	20%	36%	28%	10%	6%	3.54
GA 2	36%	38%	16%	6%	4%	3.96
GA 3						
…						
GA 7						
GA 8						

Criterion 4
Curriculum

4.1 Design and contents of the curriculum must be consistent with the PEOs, and the program must demonstrate through transcript analysis that coursework of each graduate includes the following three major components: mathematics and basic sciences, technical and professional engineering component, and general education. Specifically:

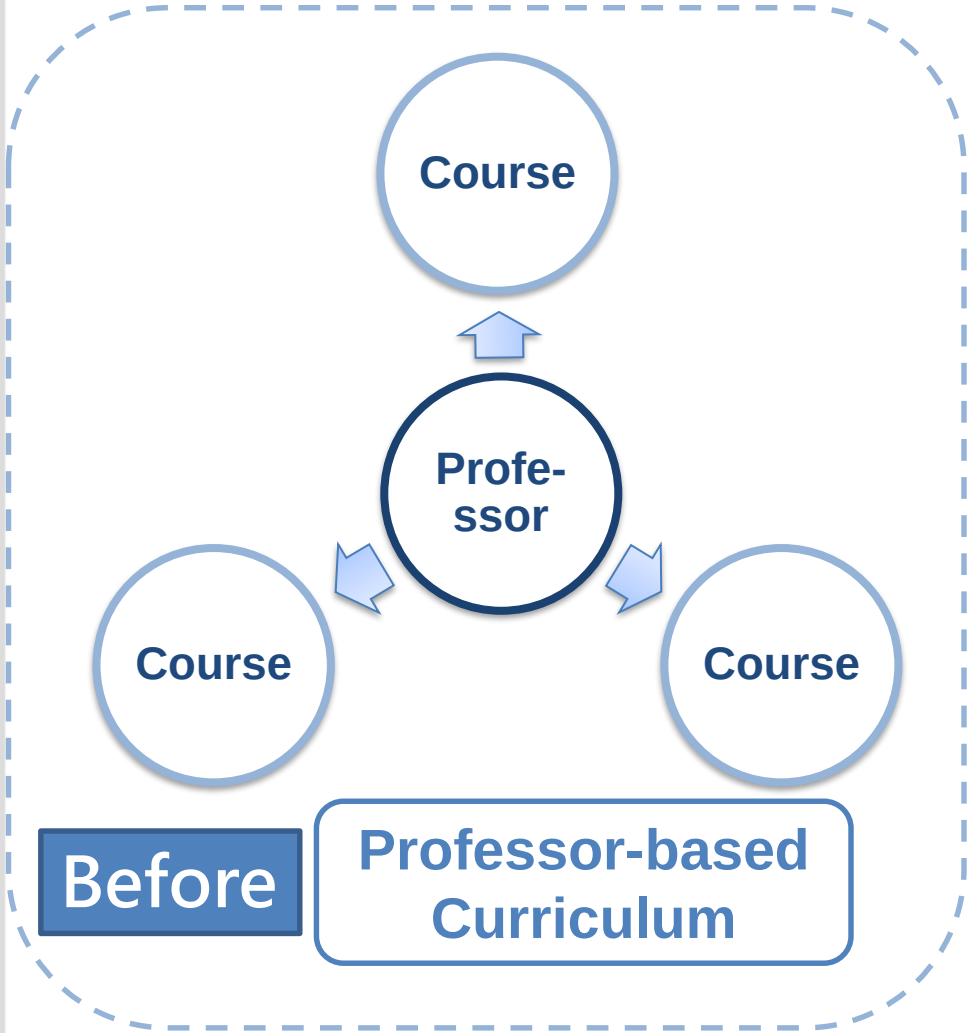
4.1.1 **mathematics and basic sciences must account for at least 9 credits and total to at least one fourth of the credits required for graduation;**

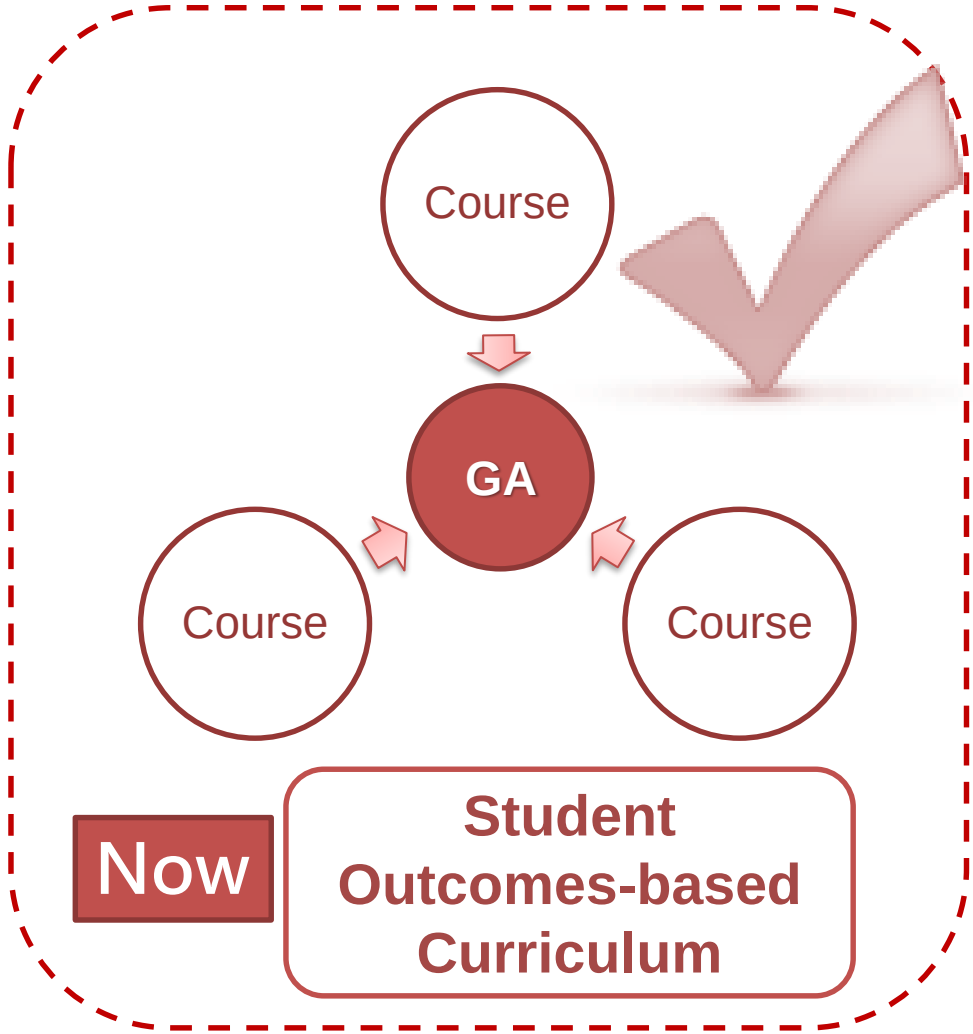
4.1.2 technical and professional engineering component must account for at least three eighths of the credits required for graduation including capstone design course.;

4.1.3 general education component must complement the technical contents of the discipline and be consistent with the PEOs;

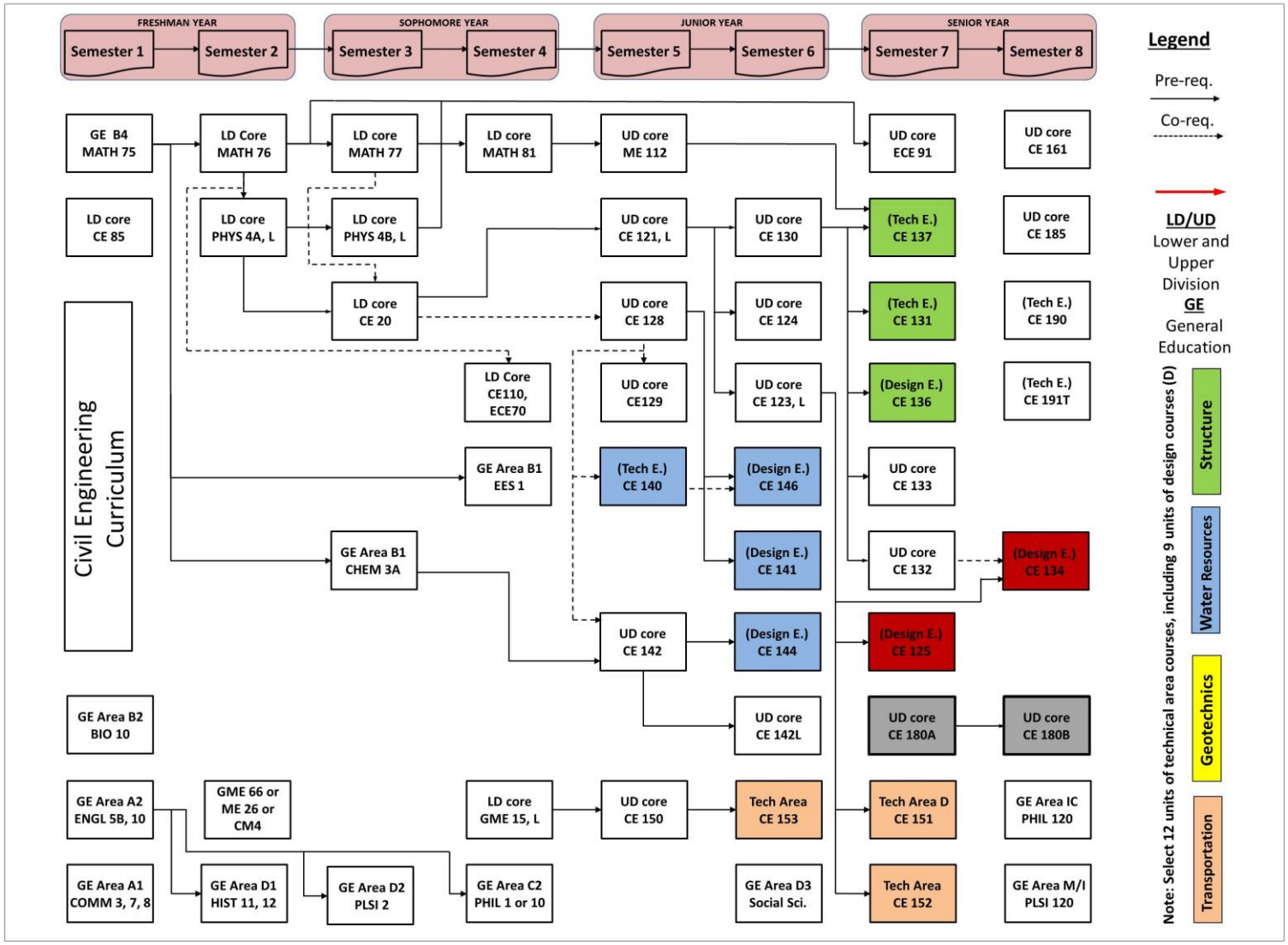
4.2 Design and implementation of the curriculum must correlate the development of the industry and prepare students to culminate the learned knowledge and skills in engineering practice.

Curriculum Aims at Cultivating GA





Curriculum Mapping Must be Consistent with PEOs and Meets the Industry Needs



Every Course Must Correspond with GA

Course \ GA	1 ability to apply knowledge of mathematics, science, and engineering	2 ability to design and conduct experiments, as well as to analyze and interpret data	3 ability to apply techniques, skills, and modern tools necessary for engineering practice	4 ability to design an engineering system, component, or process	5 ability to manage project, including budgeting, communicate effectively, work in multi-disciplinary environment, and function on teams	6 ability to identify, formulate, research literature and analyses complex engineering problems reaching substantial conclusions	7 knowledge of contemporary issues; an understanding of the impact of engineering solutions in an environmental, societal, and global context; and the ability and habit to engage in life-long learning;	8 apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice, and a sense of respect for diversity
Engineering Graphics		*	*					*
Basic Design	*			*	*		*	*
Fluid mechanism	*	*	*					
Engineering Mathematics	*	*						
Structural Mechanism	*	*	*					
…						*		
Capstone	*	*	*	*	*	*	*	*

Only 1 course Matches GA #6 Must Reconsider!

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GA must be shown in Syllabus

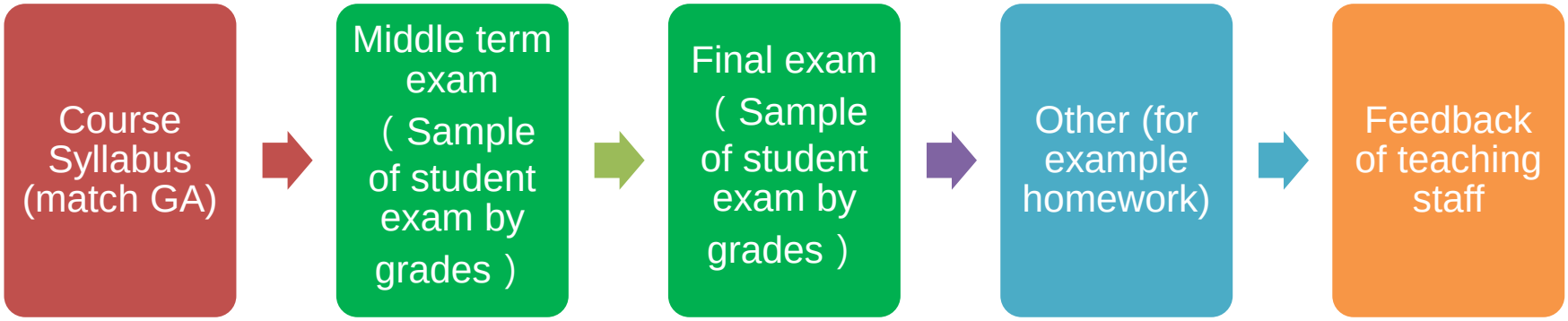
Table 4-4 Year 2016 Capstone Syllabus

(Please present other course information either on-site or electrically with each course having its syllabus, 2 samples of assignments, quizzes, exams, homework, etc. categorized by score of high, middle, and low.)

Course name				**Instructor**	
Credits/ hour		**Required/ elective**		**Course Year**	
Perquisite					
Textbook					
Topic					
1. 2. 3.					
Corresponding graduate attributes					
1.					
2.					
3.					
...					
Assessment method: □ Quiz □ Midterm □ Final □ Homework □ Report □ Oral report □ Project □ Oral test □ other: _____					

Course Portfolios

Display at the on-site visit (for each course)



Beginning of semester

End of semester

Transcript Analysis!

Have the students taken sufficient credits satisfying C4?

IEET-EAC as example

Table 4-3 Year 2011-2016 Transcript Analyses

Last 3 digits of the student ID Number: ○○○

Enrollment Year	Course name	Required/ elective	Credits				
			Math	Basic science	Engineering course		General education
					Theory	Design	
1st Semester Freshman							
2nd Semester Freshman							
1st Semester Sophomore							
2nd Semester Sophomore							
1st Semester Junior							
2nd Semester Junior							
1st Semester Senior							
2nd Semester Senior							
Capstone Coure							
Total Required Course Credits Taken		**Total**					
		Grand Total					
IEET Criterion 4 Curriculum Credits Requirement			**32 Credits (Math and Science each must have 9 credits)**		**48 Credits**		
Minimum Program Graduation Credits							

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Does the program offer Capstone course?

Table 4-4 Year 2016 Capstone Syllabus

(Please present other course information either on-site or electrically with each course having its syllabus, 2 samples of assignments, quizzes, exams, homework, etc. categorized by score of high, middle, and low.)

Course name				**Instructor**	
Credits/ hour		**Required/ elective**		**Course Year**	
Perquisite					
Textbook					
Topic					
1. 2. 3.					
Corresponding graduate attributes					
1.					
2.					
3.					
...					
Assessment method: □ Quiz □ Midterm □ Final □ Homework □ Report □ Oral report □ Project □ Oral test □ other: _____					

Every Course Must Correspond GA

Course \ GA	1 ability to apply knowledge of mathematics, science, and engineering	2 ability to design and conduct experiments, as well as to analyze and interpret data	3 ability to apply techniques, skills, and modern tools necessary for engineering practice	4 ability to design an engineering system, component, or process	5 ability to manage project, including budgeting, communicate effectively, work in multi-disciplinary environment, and function on teams	6 ability to identify, formulate, research literature and analyses complex engineering problems reaching substantial conclusions	7 knowledge of contemporary issues; an understanding of the impact of engineering solutions in an environmental, societal, and global context; and the ability and habit to engage in life-long learning;	8 apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice, and a sense of respect for diversity
Engineering Graphics		*	*					*
Basic Design	*			*	*		*	*
Fluid mechanism	*	*	*					
Engineering Mathematics	*	*						
Structural Mechanism	*	*	*					
…						*		
Capstone	*	*	*	*	*	*	*	*

Only 1 course Matches GA #6 Must Reconsider!

Capstone Must Correspond with Most, if not all GA

GA / Course	1 ability to apply knowledge of mathematics, science, and engineering	2 ability to design and conduct experiments, as well as to analyze and interpret data	3 ability to apply techniques, skills, and modern tools necessary for engineering practice	4 ability to design an engineering system, component, or process	5 ability to manage project, including budgeting, communicate effectively, work in multi-disciplinary environment, and function on teams	6 ability to identify, formulate, research literature and analyses complex engineering problems reaching substantial conclusions	7 knowledge of contemporary issues; an understanding of the impact of engineering solutions in an environmental, societal, and global context; and the ability and habit to engage in life-long learning;	8 apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice, and a sense of respect for diversity
Engineering Graphics		*	*					*
Basic Design	*			*	*		*	*
Fluid mechanism	*	*	*					
Engineering Mathematics	*	*						
Structural Mechanism	*	*	*					
…						*		
Capstone	*	*	*	*	*	*	*	*

Evidence to be Presented by the Program in terms of teaching and student work

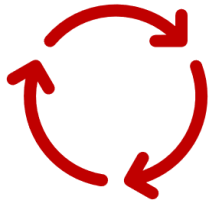
Self-study Report	Displays On-Site
1) Demonstrate a curriculum map (Must include guidelines on prerequisites.) 2) Provide a yearly listing of courses offered and demonstrate the courses' alignment with the graduate attributes. 3) Demonstrate curriculum can cultivate achievement of graduate attributes with each attribute cultivated by at least 2 to 3 courses. 4) Demonstrate student fulfillment of curriculum requirements of criteria 4.1.-4.1.3. using transcript analysis. * Minimal credits required for graduation are set by the Ministry of Education, which is 128.	1) Curriculum map. 2) Lists and portfolios of professional courses including: • Syllabus, list of textbooks used, and sample of tests and homework organized by score of high, middle, and low with 2 of each. • Instructor self-made handouts if any. • Sample of midterm and final examinations organized by score of high, middle, and low with 2 each. • Sample of homework organized by score of high, middle and low with 2 each. • Course analysis table. 3) Transcript of graduates. 4) Syllabus of capstone courses and sample of finished project/report organized by score of high, middle, and low with 2 of each. 5) Student ranking based on overall scores for each class years.

Course Analysis and Teaching Staff Feedbacks

A. Required Courses

Course number	Course name	Required/ elective	Instructor	Year to be taken	Credits					Number of hours	Select the corresponding attributes						Number of students	Assessment method	Average score	Rate of passage
					Total	Math	Basic Science	Engineering			Attribute 1	Attribute 2	Attribute 3	Attribut…	Attribute 7	Attribute 8				
								Theory	Design											
1																		□ Quiz □ Midterm □ Final □Assignment □ Report □ Oral report □ Project □ Oral test □ other: _____		
	(Please insert course assessment and analysis)																			

Criterion 9
Continuous Improvement

demonstrate in a consistent manner that…	students have attained the graduate attributes by graduation;
	planning and implementation of the curriculum must correlate the development of the industry and prepare students to culminate the learned knowledge and skills in engineering practice;
	continuous improvements are attained in other areas.

Continuous Improvement of the Program

1. Mechanism (Committees & Frequency of Meetings)

- Inner Loop
  - Curriculum Committee
  - Environment, Safety, and Hygiene Committee
  - …
- Outer Loop
  - Advisory Committee
  - …

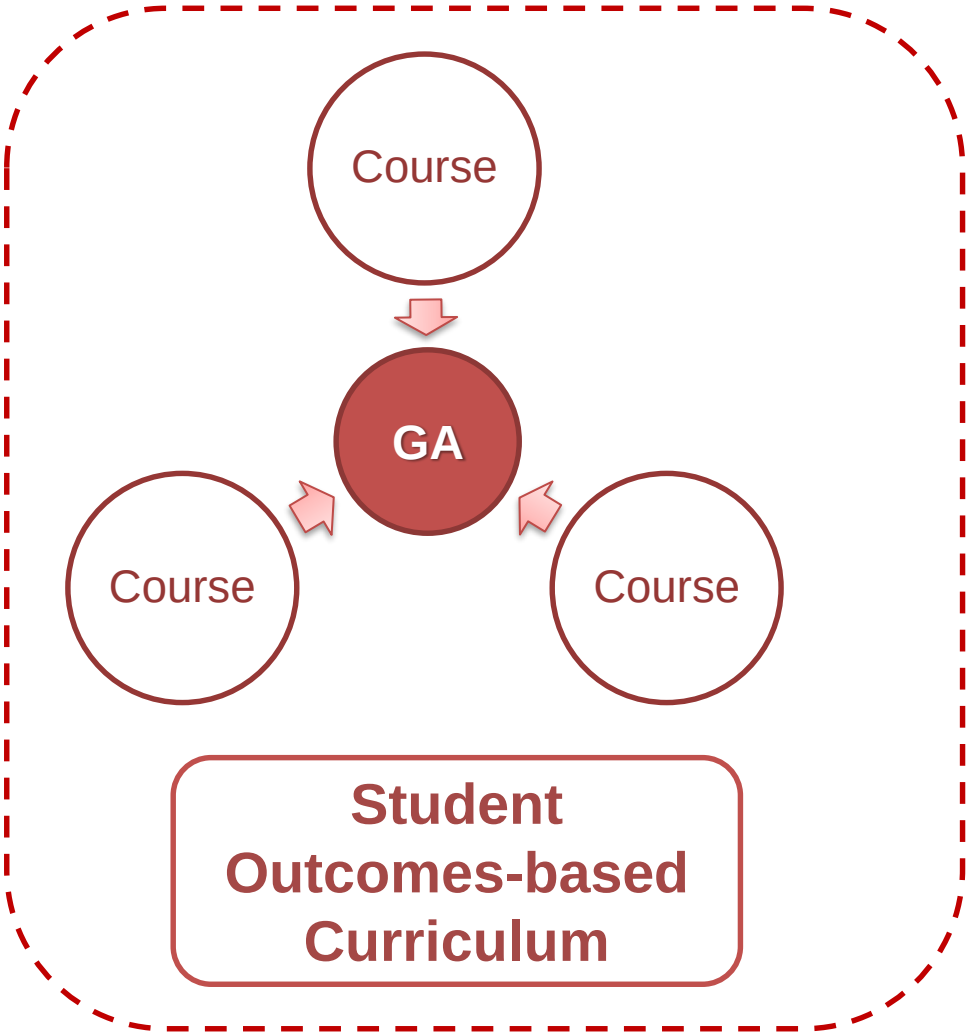
2. Effects of the Mechanism

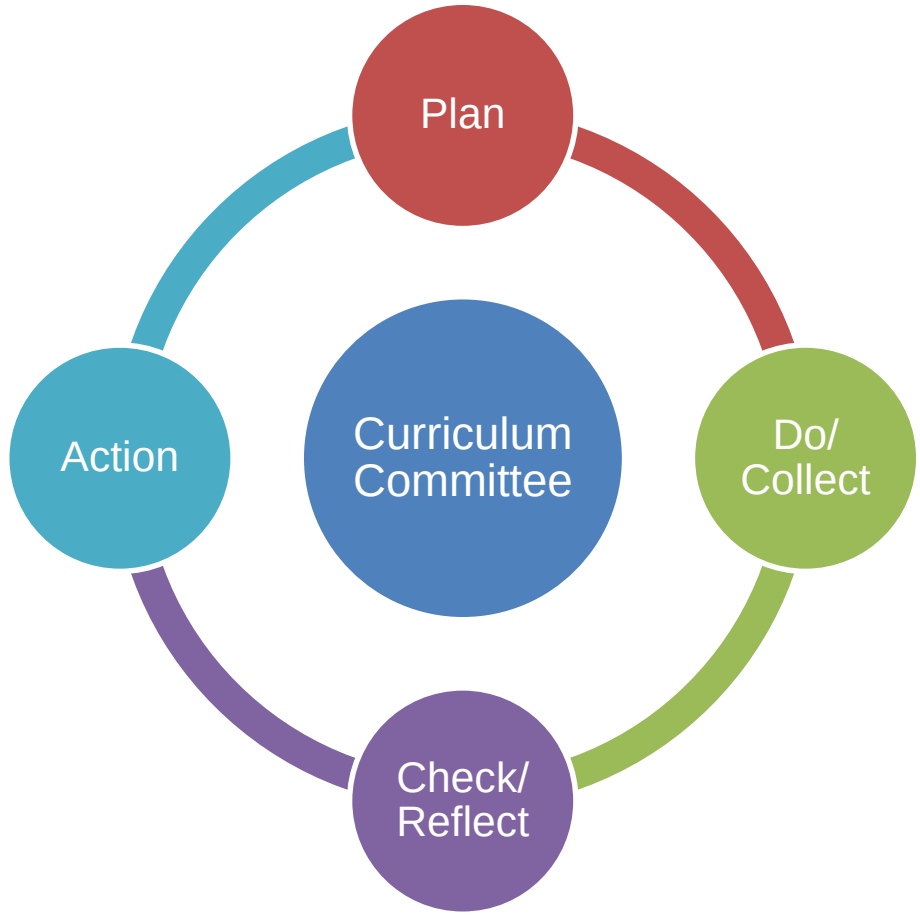
- Meeting Minutes
  - Inner Loop Committees
  - Outer Loop Committees
- Execution of the Meeting Decisions
  - Inner Loop Committees
  - Outer Loop Committees

Reflect on Weak Attributes and their Corresponding Courses

GA / Course	1 ability to apply knowledge of mathematics, science, and engineering	2 ability to design and conduct experiments, as well as to analyze and interpret data	3 ability to apply techniques, skills, and modern tools necessary for engineering practice	4 ability to design an engineering system, component, or process	5 ability to manage project, including budgeting, communicate effectively, work in multi-disciplinary environment, and function on teams	6 ability to identify, formulate, research literature and analyses complex engineering problems reaching substantial conclusions	7 knowledge of contemporary issues; an understanding of the impact of engineering solutions in an environmental, societal, and global context; and the ability and habit to engage in life-long learning;	8 apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice, and a sense of respect for diversity
Engineering Graphics		*	*					*
Basic Design	*			*	*		*	*
Fluid mechanism	*	*	*					
Engineering Mathematics	*	*						
Structural Mechanism	*	*	*					
…						*		
Capstone	*	*	*	*	*	*	*	*

Curriculum Committee Serves its Function





Does the curriculum committee serve its function?

Advisory Board Review Assessment Results

- Understand results from PEO surveys
- Understand results from GA assessments
- Suggest other improvement

Teaching and Curriculum Adjustment

- Based on PEO survey results, GA assessment results, curriculum committee discussions, advisory board discussions to adjust curriculum and assessment

Happy New Year

2020