

# **From Experience of JABEE Examiner to Examine Outcome- Based Education**

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# JABEE Examination Scheme

- Pool of high quality of examiners

–*This is essential for accreditation work*

# Examiner Recruit

–Examiner candidates

- Recommendation from supporting Engineering Societies

–JSME(36,000), JSAE(46,000),  
JSCE(36,000), AIJ(34,000),  
IEEJ(27,000), IEICE(32,000),  
CSJ(27,000), SCEJ(7,400),-----

# Examiner Training

- Workshop and training for examiners (two days)
  - Every year workshops are held for examiner team leaders, examiners, and new examiner candidates
  - Elaborate explanation or interpretation of criteria, and several case studies

# Observer Internship

- Observers on examination of an education program
  - New examiner candidates must participate in examination of an education program as observers

# Examination Procedures

1. Education programs apply for JABEE examination (April)
2. Examination teams are formed by field-wise primary Engineering societies and a team leader (chair) is appointed (June) leader + two members

3. Submission of self-review report by education program (July)
4. Examination based on self-review by teams (August – October)
5. Questions and confirmation from team members are collected by the team leader, and the team leader contact the program leader to ask about questions

## 6. On-site examination (Nov-Dec)

- ① Confirmation of self-review report and interview of teaching staff and students
- ② Opinion exchange among team members about evaluation on each criterion
- ③ Drafting up first examination report handed to the education program leader



7. Submission of second examination report to field-wise primary engineering society after the team modifies the first examination report or does not, receiving claims from the education program on the first examination report (Dec)

## 8. Examination committee in each field (Feb)

- ① JABEE committee members and team leaders
- ② Adjustment of examination results among teams to assure equity of examination
- ③ Modification of the second examination report
- ④ Third (final) examination report to the primary engineering society

9. Examination & Accreditation  
Coordination Committee in JABEE  
(March)

10. Accreditation Commission, JABEE  
Board of Directors (April)

# Examination Skill

- Full understanding of criteria
  - Objectives and intensions of each criterion: design ability, demonstration ability, communication ability, -----
  - Understanding connectivity between each criterion
- Full understanding of judgment baseline
  - A: accepted, C: concern, W: weakness, and **D: deficiency**

# Education Program

- Design new subjects and curriculum to cultivate the following skill and abilities in students
  - Engineering ethics
  - Multidimensional thinking from global perspective
  - Understanding impact onto society and nature by engineering activities
  - Communication skill and ability
  - Design skill and ability

***How can we evaluate how much and deeply students can acquire such skill and abilities through new subjects and new curriculum ?***

# Examination based on self-review

- Careful examination of the evidences
  - Attached evidences
    - Setting of clear profile of autonomous professional to be fostered
    - setting of clear and unique learning outcomes
    - Curriculum satisfies minimum requirements by JABEE and MEXT

– Through internet (homepage of the program)

- Education and learning outcomes are clearly defined and opened to public
- Entrance examination is done to admit the students who can acquire the skill and the abilities required by JABEE by their graduation
- University and Program traditions and resources

- Careful examination of the curriculum
  - The curriculum is well designed for students to achieve education and learning objectives (**outcomes**)
  - The curriculum is well designed to cultivate skill and abilities required for accreditation criteria in the students
  - How does the program secure the students to acquire the skill and abilities required by JABEE through the curriculum by their graduation



# On-site examination

- Two and half days examination
  - First day afternoon
    - Making arrangement with the program leaders
    - Quick observation of evidences
  - First day night
    - Team meeting: adjustment among member examination results

## –Second day

- Observation of evidences

- Education facilities: class room, student laboratory, student workshop, student supporting facility, library, and ---**Education environment**
- Text books, test questions and results near border-line of pass, student products, ---**Student outcomes**

- Interview with teaching staff
  - Explanation about the program from the leader
  - Every teaching staff collaborates for education
  - System for evaluation of student achievement of learning outcomes

- Interview with students including alumnae
  - Complaining of the program
  - Make sure if the classes has been done according to syllabus
  - How the system for evaluation of student achievement of learning outcomes works
  - How the program education is effective to work at the companies

## –Second day night

- Team meeting

- Final adjustment of examination results for every items by team members

- Writing draft of first examination report to be told to the program and evaluation summary about the program

## –Third day morning

- Courtesy call at Dean of faculty of engineering, or university president
- Final adjustment of the first examination report and print out

- Meeting with the program teaching staff including program leader, the dean, and sometime, president (rector)
- Telling overview of the examination by the team chair and hand the first examination report to the program leader

***Finish on-site examination!!***

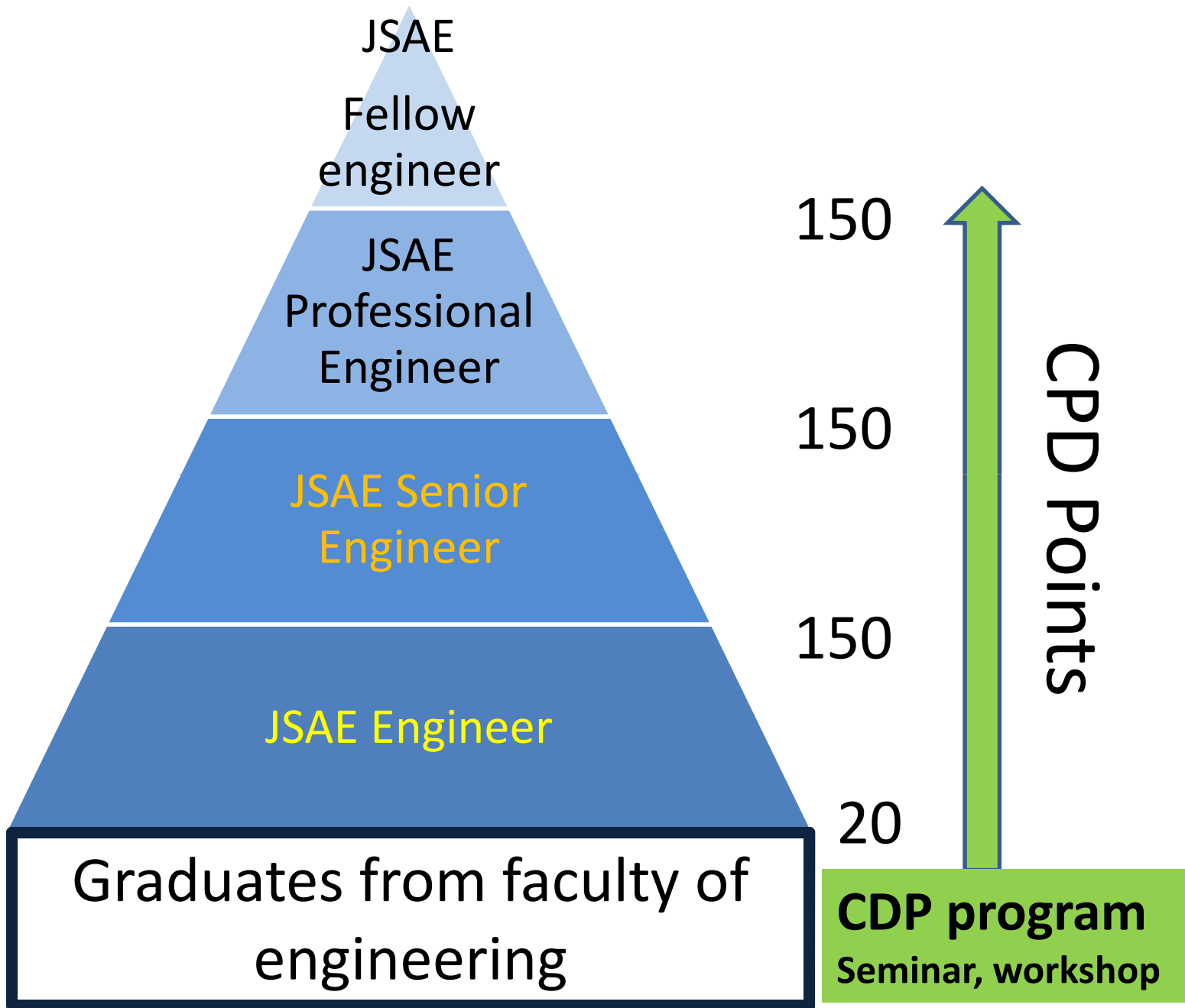
# Summary

- It is a key issue to train high qualified examiners
- Professional education will be always updated and then, accreditation criteria will be also updated
- Updated accreditation criteria must be clearly defined and shared by all the parties concerned



Finally, accreditation system of the education program is just beginning of professional education

- Continuing professional development (CPD) for engineers is also inevitable for industrial development
  - One example in Japan
    - JSME, CDP program and a qualification system has been started since 2007
      - Fellow engineer:66, Prof. Engineer:38, Senior engineer:21, Engineer:1164 as of 2013



**Terima Kasih**