Guidance on Engineering Education Accreditation:

On-site Visit

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Contents

Guidance on Engineering Education Accreditation: On-site Visit

This guidance is for the assigned accreditation review team to conduct on-site visit, and also as a reference for the program under review to cooperate with the review team.

1. On-site review team

1.1 Team size

The on-site review team is a provisional working team appointed by a program accreditation sub-committee, composed of 1-3 program evaluators and a coordinator (which may also be an evaluator). The on-site review team is composed of evaluators from both academe and industry. At least one member should be from industry. Moreover, the composition and profession of the on-site review team should meet the accreditation requirements. Overseas evaluators may be invited to participate in the on-site visit as needed. For a multiple-program visit in one institution, a joint visit should be preferred. See the *Policy and Procedure of Multi-program Joint Visit* for details (Attachment 1).

1.2 Qualification of on-site review team evaluators

(1) Experienced, be conscientious, responsible, fair and objective;

(2) Strictly adhere to relevant accreditation policies and conduct accreditation fairly and objectively;

(3) Record the evaluation process, fill the forms in the *Handbook for On-site Evaluators* (Attachment 2) and the *Handbook for On-site Review teams* (Attachment 3), and make independent judgment on the evaluation;

(4) Abide by the confidential and disciplinary requirements of engineering education accreditation.

1.3 Responsibilities of team chair

(1) Be responsible to the program accreditation sub-committee;

(2) Formulate an on-site visit schedule, propose labor division of the team members, coordinate and lead the team members to carry out the visit, and support the team members to work independently and form objective evaluation

opinions;

(3) Host team meetings to study and decide on issues related to the visit;

(4) Communicate with the program under review and the institution on relevant matters to ensure the visit activities;

(5) Organize the team members to complete the *Handbook for On-site Review teams* (including the “on-site visit report”);

(6) See the *Policy and Procedure of Multi-program Joint Visit* (Attachment 1) for details about the responsibilities of the joint team chair.

1.4 Responsibilities of review team members

(1) Prepare well for the on-site visit, including familiarize with the relevant documents and requirements of the program accreditation sub-committees on the visit;

(2) Carefully read the self-study report and appendix materials submitted by the program under review, form personal verification focus, complete the *Personal Analysis of Evaluators on Self-study Report*, and submit it to the coordinator of the review team before on-site visit;

(3) Arrive at the institution with the program under review on time (those who cannot arrive on time should report to the team chair two weeks ahead), and participate in the whole on-site visit as required by the review team;

(4) Carefully complete the work assigned by the team;

(5) Investigate the program thoroughly and comprehensively in accordance with the Engineering Education Accreditation Criteria, make independent, objective and scientific judgments, complete the *Handbook for On-site Review teams*, and assist the team chair in completing relevant contents of the *Handbook for On-site Review teams*.

1.5 Responsibilities of the team coordinator

(1) Appointed by CEEAA to serve as the coordinator of the on-site review team, communicate with the Secretariat of CEEAA, the program accreditation sub-committee, the team chair, the program under review and the institution, and properly arrange all activities as provided in the on-site visit schedule;

(2) Before on-site visit, assure that all team members have received the self-study report and supplementary materials on time, form the *Summary of Personal Analysis of Evaluators on Self-study Report* and assist the chair in

drafting the verification focus and schedule;

(3) Coordinate and arrange the evaluators to arrive at the institution on time to attend the visit, and assist the team throughout the accreditation;

(4) Assist the team throughout the on-site visit, summarize the evaluation conclusions and findings of the evaluators, and submit them to the team for discussion;

(5) Assist the team chair in completing the *Handbook for On-site Review team* and other documents needed in the on-site visit, and submit relevant documents to the secretariat and the program accreditation sub-committees of CEEAA for filing after the visit;

(6) Complete other work assigned by the team chair.

2. On-site Visit

2.1 On-site visit schedule

The program accreditation sub-committee should determine the date of an on-site visit according to the annual accreditation arrangement from the secretariat of CEEAA and negotiations with the institution whose program is to be accredited, and submit it together with the list of the on-site review team members to the secretariat of CEEAA. CEEAA will notify the institution. The on-site visit should be arranged during the non-vocational days and last for no more than three days for each program to be accredited.

2.2 On-site visit purpose

The purpose of an on-site visit is to verify the information provided in the self-study report, investigate issues which have not been reflected in the self-study report, determine compliance according to the Engineering Education Accreditation Criteria, and recognize shortcomings of the program that may affect the quality of education.

2.3 Preparation for on-site visit

(1) Before on-site visit, each team member should carefully study the Engineering Education Accreditation Criteria, review the self-study report and the appendixes, find out major issues of the program according to the criteria, complete the *Personal Analysis of Evaluators on Self-study Report* in the *Handbook for On-site Visit Evaluators*, and submit them to the coordinator of

the team to form the *Summary of Personal Analysis of Evaluators on Self-study Report* before arrival at the institution;

(2) The on-site team have right to propose “accreditation suspension” request with detailed explanations to the program accreditation sub-committee at any time when recognizing that the program cannot meet requirements of the criteria or misstatements in the materials during the review;

(3) Assisted by the coordinator, the team chair should draft the *on-site visit focus* according to the *Summary of Personal Analysis of Evaluators on Self Study Report*, develop the visit schedule by referring to the *Schedule for Reference of On-site Review team*, communicate with the program under review to make appropriate adjustments;

(4) The review team should hold a preparatory meeting to discuss and determine the on-site visit focus and schedule, labor division of the team members, and other relevant issues after arriving at the institution.

2.4 Focus and forms of on-site visit

An on-site visit should focus on the formulation, implementation and evaluation of graduate outcome, primarily check whether the program has established and implemented an outcome-based internal evaluation mechanism and continuous improvement mechanism, namely whether the self-evaluation results of the program on the attainment of the outcome (course learning outcomes, graduate outcomes) can support the expected objectives, and can be used for continuous improvement of the program. In addition, be sure to check whether the improvement made by the program is relevant to the evaluation, and whether the evaluation results have been used.

An on-site visit may adopt the following forms according to the requirements of the visit and characteristics of the institution:

(1) Interview with staff of relevant administrative office of the institution

The team should get the following information of the institution: the overall situation, orientation and characteristics, as well as the requirement, support, management and assessment of the program.

(2) Interview with staff of the program and the college (department)

The team should get the following information of the program: the orientation, educational objectives, characteristics and adaptability; support of the

program's graduate outcome to the educational objectives, support of the curriculum to the graduate outcome; requirements on formulation of the syllabus and its implementation; educational environment of the program provided by the college (department); the faculty and development; learning and development of students.

(3) Interview with faculty

The team should, through interviews, discussion and attendance to teaching activities, verify that whether the faculty knows the relationship among the educational objectives, graduate outcome and curriculum; the relationship between their teaching activities with students' attainment of graduate outcome, whether they consciously design their teaching activities according to the course learning outcome in the teaching practice, proactively link the assessment contents and methods to the course learning outcome, and pay attention to students' attainment. Besides, the team should also gain the faculty's opinions and recommendations on the program construction, faculty development, policy support, institution running conditions, student training, student development and other aspects.

(4) Interview with students

The team should get the following information about students through group and individual interviews with them and observation of their activities: students' learning attitude, knowledge structure and comprehensive ability; their understanding of the program educational objectives, graduate outcomes and curriculum, and the relationship among them; their understanding of the relationship between the course study and attainment of the graduate outcomes, their awareness to involve in teaching activities to improve their abilities. Besides, the team should also gain the students' opinions and recommendations on the teaching, student guidance and teaching administration of the institution, college and program, as well as their academic and career development. The students interviewed by the team should be broadly representative.

(5) Review of students' learning outcomes

The team should randomly check the students' assignments, course design, graduation design, test questions, experimental reports, theses, etc. to verify

whether the assessment requirements are relevant to the course learning outcomes, and can reflect the attainment of relevant abilities, as well as actual attainment of these abilities; also randomly check the teaching materials, such as the syllabus, teaching plan and textbooks to verify whether the teaching contents and methods can support the course learning outcome and facilitate attainment of relevant graduate outcome; and review the original evaluation records of educational objectives, graduate outcome and course learning outcome to verify the implementation of the outcomes-based internal evaluation mechanism. The selected student outcomes should cover core courses and teaching procedures of the program and be representative.

(6) Interview with alumni and representatives of employers

The team should gain the alumni' opinions on the education system of the program and employers' evaluation on the alumni cultivated by the program, so as to acquire the program's attainment of the educational objectives as well as the involvement of the alumni and employers in the program construction. The team should interview with the alumni.

(7) Investigation of teaching conditions and administration

The team should visit the laboratory, computer room, library, archives, and design classroom, etc., and talk with relevant staff to get information on the teaching facility renewal and students' usage (the facility utilization ratio), establishment and implementation of teaching management regulations, as well as the teaching documents and archives.

The team may also carry out the on-site visit by other means as needed. The visit should be problem-oriented. Unless otherwise required, the team can cancel lecture attendance and inspection of public facilities.

Besides, the team may also take virtual visits. See the *Guidance on Engineering Education Accreditation: Virtual Review* for details.

2.5 Exchange of on-site visit opinions

At the end of the on-site visit, the team members can convey personal findings with heads of the program, the college and the institution.

3. On-site Visit Report

3.1 Content of on-site visit report

An on-site visit report should consist of the following contents: 1) verification results of the on-site visit focus; 2) objective description of the shortcomings found during the on-site visit according to the criteria, their impact on attainment, as well as the conclusions and recommendations. Contents, format and requirements of the on-site visit reports can be found in the *Handbook for On-site Review teams*.

3.2 Formation and delivery of on-site visit report

After on-site visit, the team chair should draft the on-site visit report. Once the report is agreed by all team members, the chair should submit it to the program accreditation sub-committee within 15 days after the on-site visit, and the sub-committee will send the report to the institution for opinions.

Upon receipt of the on-site visit report, the institution shall verify the shortcomings mentioned in the report, and reply to the program accreditation sub-committee within 15 days or it will be deemed to have no objection.

4. Disciplinary Requirements

The team should strictly abide by the accreditation rules and requirements before, during and after the visit, sign the commitment (see Attachment 5). and follow the requirements below:

(1) To consciously follow the rules and laws.

(2) To strictly abide by the *Policy and Procedure for Engineering Education Accreditation*, carry out the on-site visit according to the criteria, and conduct the accreditation fairly and justly;

(3) To strictly abide by *the Rules and Procedures on Supervision, Arbitration and Violation Treatment of Engineering Education Accreditation*.

CEEAA reserves right to interpret this document.

Attachments:

1. Policy and Procedure of Multi-program Joint Visit
2. Handbook for On-site Visit Evaluators

3. Handbook for On-site Review teams (including the on-site visit report)
4. Engineering Education Accreditation Report
5. Commitment of On-site review team

Attachments

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Attachment 1:

Policy and Procedure of Multi-program Joint Visit

I. Purpose of Joint Accreditation

1．To reduce costs, improve efficiency, and guarantee accreditation quality under the premise of continuous expansion of the accreditation scale.

2．To strengthen the coordination of multiple programs, and assure the decision consistency among different programs according to the accreditation criteria.

II. Composition of Joint Accreditation Team

1. One joint chair.

2. Evaluators from both academy and industry. Each program should have 1-2 evaluators, including one appointed by the sub-committee to write the program on-site visit report and plan for specific affairs of the review teams. When conditions permit, each team should have one evaluator, and each joint team should have at least one evaluator from the industry.

3. The number of coordinators depend on the number of the joint accreditation programs. One coordinator should be arranged in case of less than two programs, and another coordinator will be arranged in case of more than two programs, and so on. In case of several coordinators, the joint team should appoint a coordinator as head of the coordinators. If the programs to be jointly accredited are located at different campuses and far away from each other, another coordinator may be added.

III. Responsibilities of Joint Team Chair

1．Review and confirm the visit contents and procedure of the programs;

2．Review the fundamental conditions, policies and mechanism of the institution, and verify the review teams' judgment on program attainment, especially whether the programs have set up and implemented the outcomes-based internal evaluation mechanism.

3．Coordinate work of the review teams，and remind them to align the basis of judgment with the criteria.

4．Discuss with the review teams on review opinions, fully accept opinions of the

evaluators in the review teams. In case of disagreement on the review opinions, carry out fully discussion and bring forward decisive opinions.

5. Hold responsibility to the on-site visit conclusions of all programs in the joint visit, sign and confirm the on-site visit reports of these programs.

IV. Work procedure of Joint Team Chair

1. Focus of the joint team chair: the OBE reform launched by the programs according to the accreditation criteria, and their attainment of the accreditation criteria.

2. On-site activities of the joint team chair: to primarily review the mechanism for evaluating the attainment of program course learning outcomes (including the evaluation on other major teaching processes), establishment and implementation of the evaluation mechanism on graduate outcome attainment, and form basic judgments by review of core course materials and personal interview.

3. Work of the joint team chair: randomly attend review activities of the review teams as needed, or review separately.

V. Work procedure of Joint Accreditation Teams

1．Determine the visit schedule:

1) The head of the coordinator should assist the joint team chair in communicating with the institution to determine the general arrangement for the visit schedule, including the Entrance meeting, exit meeting and other activities that require participation of the whole team.

2) The coordinator should assist the review teams in communicating with the programs, and determine the visit schedule of the review teams according to the schedule of the joint teams.

2．Self -study report review:

All evaluators of the joint team should participate to confirm the program review schedule. Review teams hold meetings separately to determine their schedule and on-site visit focus, as well as the work assignment.

3. Entrance meeting: all members of the joint team should participate. Entrance meeting may also be completed in two stages. The first stage is the meeting of the joint team, and the second one is the separate meeting of the review teams.

4．Review of running conditions: the joint team chair should determine whether to arrange all or some of the evaluators to review the running conditions.

5．Brief meeting of review teams during the visit

1) Stage 1: Review teams hold meetings separately.

2) Stage 2: each review team sends a representative to report to the joint team chair.

6．Exit meeting: all members of the joint team should participate.

1) The joint team chair gives general feedback on behalf of the joint team.

2) The review teams' feedback one by one: the heads feedback the general situation of the programs, and other evaluators feedback their personal opinions.

Attachment 2:

Handbook for On-site Visit Evaluators of Engineering Education Accreditation

(2021 Edition)

Institution:

Program:

Date:

Name of Evaluator (Signature):

Made by the Secretariat of China Engineering Education Accreditation Association

Contents

Notices:

1. This Handbook is the work record and conclusion feedback of on-site visit evaluators in their personal visit.

2. Before arrival: the evaluators should carefully review the self-study report, complete the Personal Analysis of Evaluators on Self-study Report (Table 1), and submit it two weeks ahead of arrival to the team coordinator to summarize and form the summary of the team's review opinions on the self-study report and the team's on-site visit focus.

3. During on-site visit: the evaluators should carry out the review according to their respective analysis on the self-study report and the team's on-site visit focus, and complete the *Work Record of On-site Visits* (for reference) (Table 2) on the basis of the information obtained from the review and personal judgments.

4. Before team meeting of conclusion discussion: the evaluators should fill in the *Personal Review Form of On-site Visits* (Table 3) as their formal review opinions, and submit it to the coordinator for summary. The summary will be used by the team for discussion.

5. After the on-site visit: the aforesaid materials should be summarized by the coordinator, and submitted to the secretariat and program accreditation sub-committees of CEEAA for filing, which are confidential.

Table 1 Personal Analysis of Evaluators on Self-study Report

Notices:

1. This form is completed by the evaluators on the basis of the self-study report review results prior to the on-site visit, and is taken as the basis for forming the *On-site Visit Focus of the Team*;

2. The evaluators should review the self-study report strictly according to the accreditation criteria, and put forward contents subject to complementary explanation of the program and shortcomings found in the review;

3. The evaluators should bring forward the issues for in-depth verification and the review methods in response to the review results of self-study report.

Criterion	**Contents which have not been fully described in the self-study report, shortcomings against the accreditation criteria**	**Verification focus and review methods to be taken**	**Remarks**
Students			
Educational objectives			
Graduate outcomes			

Continuous improvement			
Curriculum			
Faculty			
Supporting resources			
Others			

Table 2 Work Record of On-site Visits (for reference)

Notices:

1. This form records the review activities carried out by the evaluators, and the verified issues and verification results, which will be taken as the basis of the *Personal Review Opinions of Evaluators*;

2. This form records the shortcomings primarily verified in actual reviews, which are stated in the *Personal Review Opinions of Evaluators*, the *Summary of Personal Review Opinions* and the *On-site Visit Focus*, with no need to cover issues for verification in the above form.

Issue 1 for verification: Review time and activities: Verification results: Issue 2 for verification: Review time and activities: Verification results: Other review time and activities:

Table 3 Personal Review Form of On-site Visits

Notices:

1. The contents filled in this form represent the formal review opinions of evaluators. The evaluators should complete this form before decision making of the team meeting through discussion. Relevant contents of the visit report are formed on the basis of such discussion.

2. The evaluators should judge the criteria attainment conclusions one by one against the accreditation criteria, and write the “weakness and concerns” according to the criterion of the accreditation criteria;

3．Once it is judged that criterion 3 is attained, the basis judgment that the graduate outcomes of the program cover twelve graduate outcomes of the general criteria of CEEAA should be described one by one. Once it is judged that criterion 4.1 is attained, the main basis judging attainment of such criterion should be described. Once it is judged that criterion 5.0 is attained, the main basis judgment of mapping from the curriculum to attainment of the graduate outcomes should be described;

4. In this form, in order to guarantee consistency of the conclusions, the evaluators should judge the attainment conclusions by referring to the following definitions, and describe the criteria in light of the program reality, reflect the perspective of evaluators, and should not copy terms of the criteria:

- The term “attainment” means that the current status of the program completely meets (or exceeds) requirements of the criteria, and are free of shortcomings.
- The term “attainment with concerns” means that the current status of the program meets requirements of the criteria, but has issues required attention. Such shortcomings will have potential impact on the program’s maintenance of the attainment

state. Evaluator should clearly state the basis for judging such concerns and potential impact on maintenance of the attainment state. (e.g., with regard to criterion 6.1, though the enrollment scale of the program has expanded continuously in recent three years, no adjustment has been made to the faculty scale. The program will face the faculty shortage. From the perspective of student training, there is a potential risk of faculty shortage.)

- The term “attainment with weakness” means that the current status of the program meets requirements of the criteria, but has weakness for improvement. Such shortcomings will affect program attainment, and require improvement during the validity period of the accreditation. The team should realistically describe the weakness, judgment basis and impact on attainment of relevant criteria. Ambiguous terms, such as insufficient, weak and subject to improvement, should be avoided in shortcoming description. (e.g., with regard to criterion 2.2, in the assessment on the consistency of educational objectives with the institutional mission and social & economic development, the correlation between contents of the questionnaire and social needs & expectations of stakeholders is not clear enough, and the investigation results have not been analyzed in depth, which affect the validity of the evaluation results.)
- The term “Accreditation Failed” means that the current status of the program fails to meet requirements of the criteria, namely, the program has shortcomings failing to meet the criteria. The team should clearly describe such shortcomings and the judgment basis according to the criteria. (e.g., with regard to criterion 4.1, the attainment evaluation mechanism of the educational objectives and graduate outcomes established by the program have not been implemented in the real sense. There is no evidence proving the implementation of the mechanism in the past three years. A small number of course evaluation reports provided show that the evaluation data are lack of correlation with the educational objectives, and cannot prove students’ attainment of relevant abilities.)

Accreditation criteria		Attainment conclusions	Weakness and concerns
Students	1. The program must have policies and procedures to attract outstanding students.		
	2. The program must have enforced policies and procedures on learning advising, career planning, employment guidance and psychology counseling for students.		
	3. The program must track and evaluate student's outcomes throughout the learning process, and to ensure and document that students achieve the graduate outcomes through formative evaluation.		

Accreditation criteria		Attainment conclusions	Weakness and concerns
	4. The program must have specific requirements and processes for awarding appropriate academic credits of transfer students.		
Educational objectives	1. The program must have published educational objectives consistent with the mission of the institution and the needs of social and economic development.		

Accreditation criteria		Attainment conclusions	Weakness and concerns
	2. The program must periodically review the educational objectives to ensure they remain consistent with the institutional mission and social & economic development. The review process must involve experts from industry or enterprises.		

Accreditation criteria		Attainment conclusions	Weakness and concerns
Graduate outcomes	The program must have clearly documented, published and assessable graduate outcomes. The documented graduate outcomes prepare graduates to attain the program educational objectives. The documented graduate outcomes must include:		

Accreditation criteria		Attainment conclusions	Weakness and concerns
	The documented graduate outcomes must have the following factors: 1. Engineering knowledge: Apply knowledge of mathematics, natural science, engineering fundamentals and engineering specialization to solve complex engineering problems.	(Remarks: according to the notices, once it is judged as “attainment”, the evaluators should describe the basis covering twelve graduate outcomes of the general criteria of CEEAA for the graduate outcomes developed by the program, the same below; for example, graduate outcome 1 developed by the program is “** ”(providing the full text), thereby graduate outcome 1 developed by the program covers the criteria.)	(Remarks: with regard to the graduate outcomes developed by the program, the evaluators should describe the existing weakness and concerns one by one according to the criteria, the same below.)

Accreditation criteria		Attainment conclusions	Weakness and concerns
	The documented graduate outcomes must have the following factors: 2. Problem analysis: Identify, formulate, research literature and analyze complex engineering problems reaching substantiated conclusions using basic principles of mathematics, natural sciences and engineering sciences.		

Accreditation criteria		Attainment conclusions	Weakness and concerns
Graduate outcomes	The documented graduate outcomes must have the following factors: 3. Design/development of solutions: Design solutions for complex engineering problems and design systems, components, or processes that meet specified needs with appropriate societal, public health and safety, legal, cultural and environmental considerations.		

Accreditation criteria		Attainment conclusions	Weakness and concerns
	The documented graduate outcomes must have the following factors: 4. Investigation: Conduct investigations of complex problems using research-based knowledge and research methods, including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.		

Accreditation criteria		Attainment conclusions	Weakness and concerns
	The documented graduate outcomes must have the following factors: 5. Modern tool usage: Create, select and apply appropriate techniques, resources, modern engineering and IT tools for complex engineering problems, including prediction and modeling of complex engineering problems, with an understanding of the limitations.		

Accreditation criteria		Attainment conclusions	Weakness and concerns
	The documented graduate outcomes must have the following factors: 6. Engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice and solutions to complex engineering problems.		

Accreditation criteria		Attainment conclusions	Weakness and concerns
	The documented graduate outcomes must have the following factors: 7. Environment and sustainability: Understand and evaluate the sustainability and impact of professional engineering work in solving complex engineering problems in societal and environmental contexts.		

Accreditation criteria		Attainment conclusions	Weakness and concerns
Graduate outcomes	The documented graduate outcomes must have the following factors: 8. Professional ethics: Have humanities and social science qualities, social responsibility, apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.		
	The documented graduate outcomes must have the following factors: 9. Individual and team work: Function effectively as an individual, team member and principal in a multi-disciplinary team.		

Accreditation criteria		Attainment conclusions	Weakness and concerns
	The documented graduate outcomes must have the following factors: 10. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions. Have a particular international perspective, communicate and exchange in the cross-cultural context.		

Accreditation criteria		Attainment conclusions	Weakness and concerns
	The documented graduate outcomes must have the following factors: 11. Project management: Understand and master engineering management principles and economic decision-making methods, and apply them in a multi-disciplinary environment.		

Accreditation criteria		Attainment conclusions	Weakness and concerns
	The documented graduate outcomes must have the following factors: 12. Lifelong learning: Recognize the need for, have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.		

Accreditation criteria		Attainment conclusions	Weakness and concerns
Continuous improvement	1. The program must establish regulations and mechanism to monitor teaching quality. There must be clear quality standards of main teaching process. The program must periodically evaluate curriculum and its quality. The program must establish regular, appropriate, documented process and mechanism to assess and evaluate the extent to which the graduate outcomes are being attained.	(Remarks: according to the notices, in case of attainment as judged, describe the main basis judging attainment of Article 4.1 of the criteria.)	

Accreditation criteria		Attainment conclusions	Weakness and concerns
	2. The program must have the feedback mechanism from industry and society, including graduates and employers, to evaluate the extent to which the educational objectives are being attained.		
	3. The results of periodical evaluation must be systematically utilized as input for program’s continuous improvement actions.		

Accreditation criteria		Attainment conclusions	Weakness and concerns
Curriculum	The curriculum must be consistent with graduate outcomes. The design of the curriculum must involve experts from the enterprises or industry. The curriculum must include:	(Remarks: according to the notices, in case of attainment as judged, describe the main basis judgment of support from the curriculum to attainment of the graduate outcomes.)	
	1.Courses on mathematics and natural sciences consistent with the graduate outcomes (accounting for at least 15% of the total credits).		

Accreditation criteria		Attainment conclusions	Weakness and concerns
Curriculum	2.Courses on engineering fundamentals, courses on subject fundamentals and subject courses (accounting for 30% of the total credits). Courses on engineering fundamentals and courses on subject fundamentals may provide training in the ability to apply mathematics and natural science in solving complex problems related to the professional discipline. Subject courses can fully assume the role of training abilities in system design and operation.		

Accreditation criteria		Attainment conclusions	Weakness and concerns
	3. Engineering practice and graduate design (thesis) (accounting for 20% of the total credits). The program has a well-established practice education system and cooperate with enterprises to educate students on practical and innovative abilities. The topics of graduate design (thesis) are oriented from the practical engineering problem to educate students engineering awareness, cooperation and abilities to systematically utilize what they have learned to solve complex engineering problems. The guidance and evaluation of graduation design (thesis) involve experts from industry or enterprises.		

Accreditation criteria		Attainment conclusions	Weakness and concerns
	4. Courses on humanities, social sciences and general education (accounting for at least 15% of the total credits) to enable students to consider the economic, environmental, legal, safety, health and ethical constraints in engineering practice.		
Faculty	1. The faculty is sufficient and has a reasonable structure to meet the program's teaching requirements. The program must have part-time faculty members from industry or enterprises.		

Accreditation criteria		Attainment conclusions	Weakness and concerns
	2. Each faculty member must have proper teaching, professional practice, communication, career development and engineering research abilities. The professional background of each faculty member must meet the program's teaching needs.		
	3. The faculty members must have sufficient time and effort devoted to undergraduate teaching and student advising and actively participate in research and reform on teaching.		

Accreditation criteria		Attainment conclusions	Weakness and concerns
	4. The faculty members must provide student advising, counseling and service activities and accommodate adequate levels of career planning and professional education to the students.		
	5. The faculty members must understand their responsibilities in the program's quality improvement and continuously improve their work.		

Accreditation criteria		Attainment conclusions	Weakness and concerns
Supporting resources	1. Classrooms, laboratories, practice and exercise workshops, associated equipment are adequate to satisfy teaching needs. The program must have well-established management, maintenance and update mechanism of the facilities enabling students to access. The program cooperates with enterprises to establish practice and exercise bases and provide the engineering practice platform for the student during the teaching process.		

Accreditation criteria		Attainment conclusions	Weakness and concerns
	2. Computer facilities, network conditions, books and documents sufficient to satisfy the needs of teaching and scientific research of the students and faculty. These resources are systematically maintained and accessible, and have a high degree of sharing.		
	3. Financial resources must be sufficient to meet the needs of teaching.		

Accreditation criteria		Attainment conclusions	Weakness and concerns
	4. The institution must attract and retain qualified faculty and effectively support faculty development, especially the guidance and training of young faculty.		
	5. The institution must have sufficient infrastructure to meet the needs of graduate outcomes and support students' practice and innovation activities.		
	6. The institution must have well-established teaching management and service to support the attainment of graduate outcomes.		

Accreditation criteria		Attainment conclusions	Weakness and concerns
Complementary criteria	(Refer to the complementary program criteria)		

Attachment 3:

Handbook for On-site review teams of Engineering Education Accreditation

Institution:

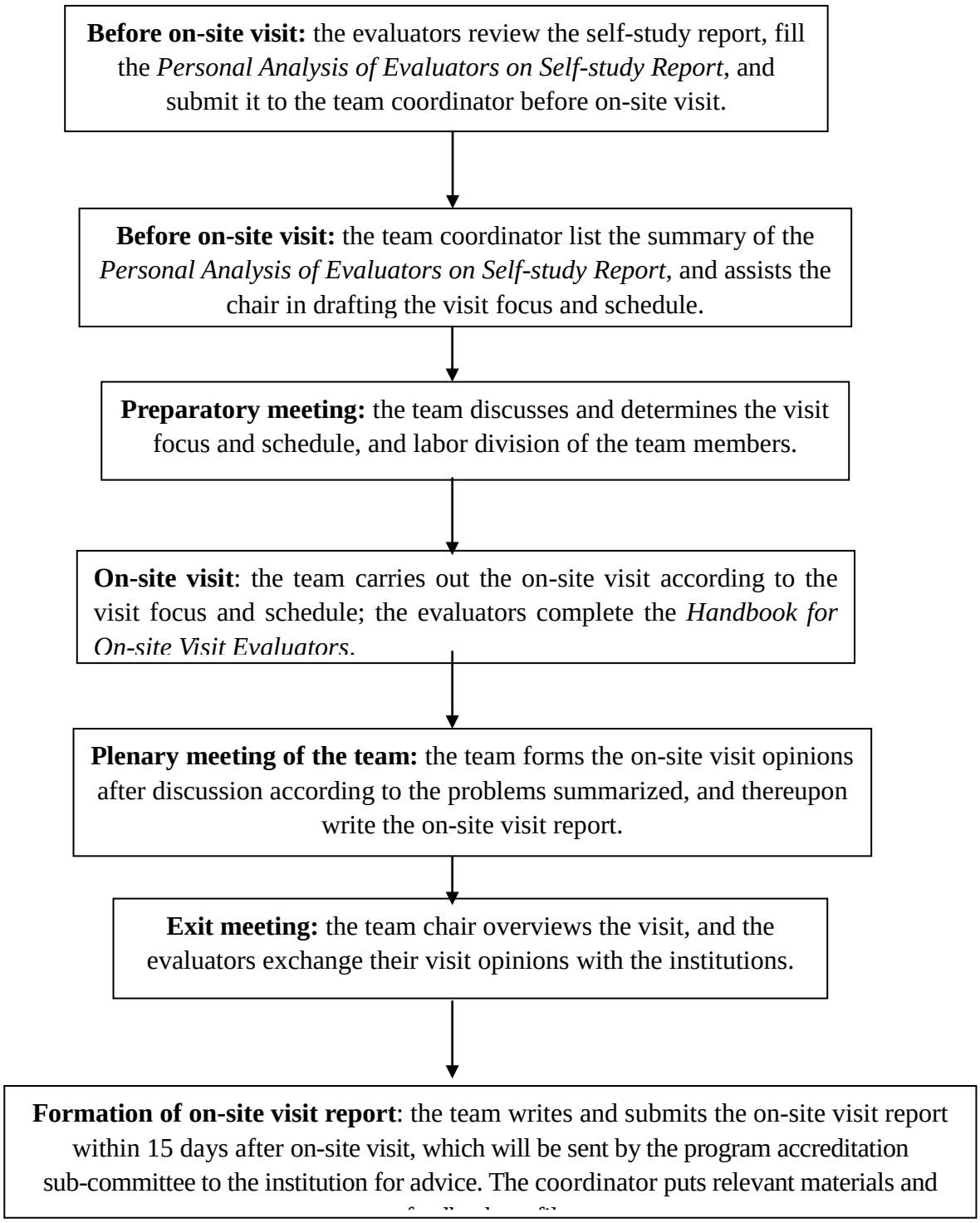
Program:

Date:

Team chair (Signature):

Made by the Secretariat of China Engineering Education Accreditation Association

Work procedure for On-site Visit of Engineering Education Accreditation



Summary of Personal Analysis of Evaluators on Self-study Report for On-site Visit of Engineering Education Accreditation

Notice: this form is a summary of the *Personal Analysis of Evaluators on Self-study Report*, and constitutes the basis for forming the visit focus, and each member shall have one copy during the visit.

Criterion	Contents which have not been fully described in the self-study report, shortcomings against the accreditation criteria	Verification focus and review methods to be taken	Remarks
Students			
Educational objectives			
Graduate outcomes			
Continuous improvement			
Curriculum			

Faculty			
Supporting resources			
Others			

On-site Visit Focus of the On-site review team of Engineering Education Accreditation

Notice: this form is formulated on the basis of the summary of the *Personal Analysis of Evaluators on Self-study Report*, and each member should have one copy during the visit.

Criterion	Verification focus and review methods to be taken	Remarks
Students		
Educational objectives		
Graduate outcomes		
Continuous improvement		
Curriculum		
Faculty		
Supporting resources		
Others		

Schedule of the On-site Review team of Engineering Education Accreditation

Timeline	Work content	Participants	Main tasks
Four weeks before on-site visit	Review the self-study report.	All members of review team	1. Review the self-study report, and note on content to be reviewed during the on-site visit 2. The team chair drafts the content of on-site visit of the team on the basis of the notes from each team member.
Two weeks before on-site visit	Determine the visit schedule	The coordinator, team chair and the institution	1. The coordinator assists the team chair in communicating with the institution and determining the visit schedule; 2. The institution submits the list of interviewees and documents required by the on-site visit.
Evening of arriving at the institution 19:30-21:30	Preparatory meeting of the team	All team members	1. Discuss and determine the on-site visit content and focus; 2. Negotiate and determine and visit arrangements; 3. Prepare for the visit.
Morning of the first day of visit 8:30-10:45	Entrance meeting between the institution and the review team	All review team members, relevant personnel of the institution, director and relevant personnel of the program	1. Introduction of the evaluators and the purposes of on-site visit; 2. Inquiry of evaluators;

Timeline	Work content	Participants	Main tasks
Morning of the first day of visit 10:45-12:00	On-site visit	All team members	1. Visit labs, practical bases and specific teaching sites and facilities.
Afternoon of the first day of visit 14:00-17:30	On-site visit	All review team members	Visit contents: 1. Review the examination papers, graduation project (thesis), course design and experiment and practice report; 2．Review the teaching management documents and materials; 3．Interview with employers and alumni.
Evening of the first day of visit 19:30-21:30	Team meeting	All review team members	1. Discuss the shortcomings found in the first day of visit, exchange opinions, and determine the visit schedule of the second day; 2. The evaluators fill in relevant forms in the *Handbook for On-site Visit Evaluators*.
Morning of the second day of visit 8:00-12:00	On-site visit	All review team members	Visit contents: 1. Interview with teachers and administrative staff; 2. Interview with students.
Afternoon of the second day of visit 14:00-15:00	The evaluators briefly summarize their visit.	All review team members	1. The evaluators independently complete the *Handbook for On-site Visit Evaluators*;

Timeline	Work content	Participants	Main tasks
Afternoon of the second day of visit 15:00-16:00	Team meeting	All review team members	Meeting contents: 1. Discuss and determine the shortcoming found during the on-site visit; 2. Discuss and prepare exit statements.
Afternoon of the second day of visit 16:00-17:00	Exit meeting	The review team members, and relevant personnel of the institution, school/ department and the program	1.make exit statements
Morning of the third day of visit	Evaluators leave the institution.		
Within 15 days after on-site visit	Form the on-site visit report		The on-site visit report will be submitted to the program accreditation sub-committee, which will be sent to the institution for feedback.
Within 15 days after the institution receives the visit report	Feedback on the on-site visit report.		If the institution fails to feed back in 15 days, it will be deemed to agree on the content of the on-site visit report.

Remarks:

- This schedule mainly aims at on-site visits lasting for two days. For on-site

visits lasting for 2.5 days, the visit progress may be moderately adjusted on the basis of this schedule.

- Unless otherwise required, some visit processes, such as evaluators attend lectures and visit public facilities, will no longer be arranged.

- It is suggested that the evaluators should focus on the following work: entrance meeting, visit of program labs, review of teaching documents and materials, interview with students, teachers/administrators, employers and alumni. It is suggested that the interview with alumni and employers should be conducted through telephone or video before on-site visit.

On-site Visit Report of Engineering Education Accreditation (Template)

(Since this Report is not the final accreditation report, it is not available for the public. The on-site review team will submit it to the program accreditation sub-committee within 15 days after the visit, and the program accreditation sub-committee will send it to the institution for advice. The program accreditation sub-committee will develop the accreditation conclusions and recommendations according to this report and feedback of the institution, as well as the self-study report and other materials submitted by the institution, and form the accreditation report.)

Institution:

Program:

Date:

I. Program Profile

1．Briefly introduce the institution, including its history, its affiliation, mission, number of undergraduate programs, and number of full-time students and teachers.

2．Briefly introduce the program, including 1) history; 2) number of students; 3) profile of program faculty; and 4) basic running conditions of the program.

3．Briefly introduce the accreditation experience of the program, and describe the continuous improvement of the program during the validity period of the previous accreditation.

II. Review Opinions on the Self-study Report and Issue Verification

1．Briefly introduce the basis and major work of the on-site visit;

2．Describe the results verified during the on-site visit one by one according to the verification focus formed by the team on the basis of the self-study report, and there is no need to describe the review process and contents.

III. Program Attainment

Notes:

1. The review team should judge the criteria attainment conclusions one by one against the accreditation criteria, and write the “weakness and concerns” according to the criterion of the accreditation criteria;

2. Once it is judged that criterion 3 is attained, the basis judgment that the graduate outcomes of the program cover twelve graduate outcomes of the general criteria of CEEAA should be described one by one. Once it is judged that criterion 4.1 is attained, the main basis judging attainment of such criterion should be described. Once it is judged that criterion 5.0 is attained, the main basis judgment of mapping from the curriculum to attainment of the graduate outcomes should be described;

3. In this form, in order to guarantee consistency of the conclusions, the review team should judge the attainment conclusions by referring to the following definitions, and describe the criteria in light of the program reality, reflect the perspective of evaluators, and should not copy terms of the criteria:

- The term “attainment” means that the current status of the program completely meets (or exceeds) requirements of the criteria, and are free of shortcomings.
- The term “attainment with concerns” means that the current status of the program meets requirements of the criteria, but has issues required attention. Such shortcomings will have potential impact on the program’s maintenance of the attainment state. Evaluator should clearly state the basis for judging such concerns and potential impact on maintenance of the attainment state. (e.g., with regard to criterion 6.1, though the enrollment scale of the program has expanded continuously in recent three years, no adjustment has been made to

the faculty scale. The program will face the faculty shortage. From the perspective of student training, there is a potential risk of faculty shortage.)

- The term “attainment with weakness” means that the current status of the program meets requirements of the criteria, but has weakness for improvement. Such shortcomings will affect program attainment, and require improvement during the validity period of the accreditation. The team should realistically describe the weakness, judgment basis and impact on attainment of relevant criteria. Ambiguous terms, such as insufficient, weak and subject to improvement, should be avoided in shortcoming description. (e.g., with regard to criterion 2.2, in the assessment on the consistency of educational objectives with the institutional mission and social & economic development, the correlation between contents of the questionnaire and social needs & expectations of stakeholders is not clear enough, and the investigation results have not been analyzed in depth, which affect the validity of the evaluation results.)
- The term “Accreditation Failed” means that the current status of the program fails to meet requirements of the criteria, namely, the program has shortcomings failing to meet the criteria. The team should clearly describe such shortcomings and the judgment basis according to the criteria. (e.g., with regard to criterion 4.1, the attainment evaluation mechanism of the educational objectives and graduate outcomes established by the program have not been implemented in the real sense. There is no evidence proving the implementation of the mechanism in the past three years. A small number of course evaluation reports provided show that the evaluation data are lack of correlation with the educational objectives, and cannot prove students’ attainment of relevant abilities.)

1. Students

【Criterion】1.1 The program must have policies and procedures to attract outstanding students.

Criterion attainment:

Existing weakness and concerns:

【Criterion】1.2 The program must have enforced policies and procedures on learning advising, career planning, employment guidance and psychology counseling for students.

Criterion attainment:

Existing weakness and concerns:

【Criterion】1.3 The program must track and evaluate student's outcomes throughout the learning process, and to ensure and document that students achieve the graduate outcomes through formative evaluation.

Criterion attainment:

Existing weakness and concerns:

【Criterion】1.4 The program must have specific requirements and processes for awarding appropriate academic credits of transfer students.

Criterion attainment:

Existing weakness and concerns:

2. Educational objectives

【Criterion】2.1 The program must have published educational objectives consistent with the mission of the institution and the needs of social and economic development.

Criterion attainment:

Existing weakness and concerns:

【Criterion】2.2 The program must periodically review the educational

objectives to ensure they remain consistent with the institutional mission and social & economic development. The review process must involve experts from industry or enterprises.

Criterion attainment:

Existing weakness and concerns:

3. Graduate outcomes

【Criterion】The program must have clearly documented, published and assessable graduate outcomes. The documented graduate outcomes prepare graduates to attain the program educational objectives. The documented graduate outcomes must include:

3.1 Engineering knowledge: Apply knowledge of mathematics, natural science, engineering fundamentals and engineering specialization to solve complex engineering problems.

3.2 Problem analysis: Identify, formulate, research literature and analyze complex engineering problems reaching substantiated conclusions using basic principles of mathematics, natural sciences and engineering sciences.

3.3 Design/development of solutions: Design solutions for complex engineering problems and design systems, components, or processes that meet specified needs with appropriate societal, public health and safety, legal, cultural and environmental considerations.

3.4 Investigation: Conduct investigations of complex problems using research-based knowledge and research methods, including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

3.5 Modern tool usage: Create, select and apply appropriate techniques, resources, modern engineering and IT tools for complex engineering problems, including prediction and modeling of complex engineering problems, with an understanding of the limitations.

3.6 Engineer and society: Apply reasoning informed by the contextual

knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice and solutions to complex engineering problems.

3.7 Environment and sustainability: Understand and evaluate the sustainability and impact of professional engineering work in solving complex engineering problems in societal and environmental contexts.

3.8 Professional ethics: Have humanities and social science qualities, social responsibility, apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.

3.9 Individual and team work: Function effectively as an individual, team member and principal in a multi-disciplinary team.

3.10 Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions. Have a particular international perspective, communicate and exchange in the cross-cultural context.

3.11 Project management: Understand and master engineering management principles and economic decision-making methods, and apply them in a multi-disciplinary environment.

3.12 Lifelong learning: Recognize the need for, have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Criteria attainment:

Existing weakness and concerns:

4. Continuous improvement

【Criterion】4.1 The program must establish regulations and mechanism to monitor teaching quality. There must be clear quality standards of main

teaching process. The program must periodically evaluate curriculum and its quality. The program must establish regular, appropriate, documented process and mechanism to assess and evaluate the extent to which the graduate outcomes are being attained.

Criterion attainment:

Existing weakness and concerns:

【Criterion】4.2 The program must have the feedback mechanism from industry and society, including graduates and employers, to evaluate the extent to which the educational objectives are being attained.

Criterion attainment:

Existing weakness and concerns:

【Criterion】4.3. The results of periodical evaluation must be systematically utilized as input for program's continuous improvement actions.

Criterion attainment:

Existing weakness and concerns:

5. Curriculum

【Criterion】5.0 The curriculum must be consistent with graduate outcomes. The design of the curriculum must involve experts from the enterprises or industry. The curriculum must include:

Criterion attainment:

Existing weakness and concerns:

【Criterion】5.1 Courses on mathematics and natural sciences consistent with the graduate outcomes (accounting for at least 15% of the total credits).

Criterion attainment:

Existing weakness and concerns:

【Criterion】5.2 Courses on engineering fundamentals, courses on subject

fundamentals and subject courses (accounting for 30% of the total credits). Courses on engineering fundamentals and courses on subject fundamentals may provide training in the ability to apply mathematics and natural science in solving complex problems related to the professional discipline. Subject courses can fully assume the role of training abilities in system design and operation.

Criterion attainment:

Existing weakness and concerns:

【Criterion】5.3 Engineering practice and graduate design (thesis) (accounting for 20% of the total credits). The program has a well-established practice education system and cooperate with enterprises to educate students on practical and innovative abilities. The topics of graduate design (thesis) are oriented from the practical engineering problem to educate students engineering awareness, cooperation and abilities to systematically utilize what they have learned to solve complex engineering problems. The guidance and evaluation of graduation design (thesis) involve experts from industry or enterprises.

Criterion attainment:

Existing weakness and concerns:

【Criterion】 5.4 Courses on humanities, social sciences and general education (accounting for at least 15% of the total credits) to enable students to consider the economic, environmental, legal, safety, health and ethical constraints in engineering practice.

Criterion attainment:

Existing weakness and concerns:

6. Faculty

【Criterion】 6.1 The faculty is sufficient and has a reasonable structure to

meet the program's teaching requirements. The program must have part-time faculty members from industry or enterprises.

Criterion attainment:

Existing weakness and concerns:

【Criterion】6.2 Each faculty member must have proper teaching, professional practice, communication, career development and engineering research abilities. The professional background of each faculty member must meet the program's teaching needs.

Criterion attainment:

Existing weakness and concerns:

【Criterion】 6.3 The faculty members must have sufficient time and effort devoted to undergraduate teaching and student advising and actively participate in research and reform on teaching.

Criterion attainment:

Existing weakness and concerns:

【 Criterion 】 6.4 The faculty members must provide student advising, counseling and service activities and accommodate adequate levels of career planning and professional education to the students.

Criteria attainment:

Existing weakness and concerns:

【Criterion】6.5 The faculty members must understand their responsibilities in the program's quality improvement and continuously improve their work.

Criterion attainment:

Existing weakness and concerns:

7. Supporting resources

【**Criterion**】7.1 Classrooms, laboratories, practice and exercise workshops, associated equipment are adequate to satisfy teaching needs. The program must have well-established management, maintenance and update mechanism of the facilities enabling students to access. The program cooperates with enterprises to establish practice and exercise bases and provide the engineering practice platform for the student during the teaching process.

Criterion attainment:

Existing weakness and concerns:

【**Criterion**】7.2 Computer facilities, network conditions, books and documents sufficient to satisfy the needs of teaching and scientific research of the students and faculty. These resources are systematically maintained and accessible, and have a high degree of sharing.

Criterion attainment:

Existing weakness and concerns:

【**Criterion**】7.3 Financial resources must be sufficient to meet the needs of teaching.

Criterion attainment:

Existing weakness and concerns:

【**Criterion**】7.4 The institution must attract and retain qualified faculty and effectively support faculty development, especially the guidance and training of young faculty.

Criterion attainment:

Existing weakness and concerns:

【**Criterion**】7.5 The institution must have sufficient infrastructure to meet the needs of graduate outcomes and support students' practice and innovation activities.

Criterion attainment:

Existing weakness and concerns:

【 **Criterion** 】7.6 The institution must have well-established teaching management and service to support the attainment of graduate outcomes.

Criterion attainment:

Existing weakness and concerns:

Complementary criteria: (review according to the complementary program criteria)

Criteria attainment:

Existing weakness and concerns:

Team Chair (Signature):

***Program Accreditation Sub-committee

*** Program On-site Review team

MM/DD/YY

Attachment:

Summary of Concerns and Weakness Found in On-site Visit of Engineering Education Accreditation

Notes:

1. This form is formulated on the basis of the shortcomings mentioned in the *Personal Analysis of Evaluators on Self-study Report* in the *Handbook for On-site Visit Evaluators*, and lists the weakness and concerns found by each evaluator in the on-site visit in details.

2. This summary should not be deemed as an official visit opinion of the team. It is just provided as reference to the sub-committees when discussing the accreditation reports and accreditation decisions, and concurrently to the Accreditation Decision Advisory Committee, and **will not be fed back to the institution**.

Criterion	Concerns and weakness description
Students	
Educational objectives	
Graduate outcomes	
Continuous improvement	
Curriculum	
Faculty	
Supporting	

resources	
Complementary criteria	

Team chair (Signature):

***Program Accreditation Sub-committee

***Program On-site Review team

MM/DD/YY

Attachment 5:

Engineering Education Accreditation Report

Institution:

Program:

On-site visit Date:

I. Program Profile

1. Briefly introduce the institution with a program for accreditation, including its history, its affiliation, mission, number of undergraduate programs, and number of full-time students and teachers.

2. Briefly introduce the program, including 1) its history; 2) number of students; 3) profile of program faculty; and 4) basic running conditions of the program.

3. Briefly introduce the accreditation experience of the program, and describe the continuous improvement of the program during the validity period of the previous accreditation.

II. Program Attainment

Notes:

1.The review team should judge the criteria attainment conclusions one by one against the accreditation criteria, and write the “weakness and concerns” against the secondary Criterion of the accreditation criteria;

2.Once it is judged that criterion 3 is attained, the team should make an overall description of the main basis for judging that the graduate outcomes developed by the program cover twelve graduate outcomes of the general

criteria of CEEAA, and there is no need to describe one by one; once it is judged that criterion 4.1 is attained, the team should describe the main basis judging attainment; and once it is judged that criterion 5.0 is attained, the team should describe the main basis judging support of the curriculum to attainment of the graduate outcomes;

3. In this report, in order to guarantee the consistency of the conclusions, the review team should judge the attainment conclusions by referring to the following definitions, and describe the criteria in light of the program reality, reflect the perspective of the team, and should not copy terms of the criteria:

- The term “attainment” means that the current status of the program completely meets (or exceeds) requirements of the criteria, and are free of shortcomings.
- The term “attainment with concerns” means that the current status of the program meets requirements of the criteria, but has issues required attention. Such shortcomings will have potential impact on the program’s maintenance of the attainment state. Evaluator should clearly state the basis for judging such concerns and potential impact on maintenance of the attainment state. (e.g., with regard to criterion 6.1, though the enrollment scale of the program has expanded continuously in recent three years, no adjustment has been made to the faculty scale. The program will face the faculty shortage. From the perspective of student training, there is a potential risk of faculty shortage.)
- The term “attainment with weakness” means that the current status of the program meets requirements of the criteria, but has weakness for improvement. Such shortcomings will affect program attainment, and require improvement during the validity period of the accreditation. The team should realistically describe the weakness, judgment basis and impact on attainment of relevant criteria. Ambiguous terms, such as insufficient, weak and subject to improvement, should be avoided in shortcoming description. (e.g., with regard to criterion 2.2, in the assessment on the consistency of educational objectives with the institutional mission and social & economic development, the correlation between contents of the questionnaire and social needs & expectations of stakeholders is not clear enough, and the investigation results

have not been analyzed in depth, which affect the validity of the evaluation results.)

- The term “Accreditation Failed” means that the current status of the program fails to meet requirements of the criteria, namely, the program has shortcomings failing to meet the criteria. The team should clearly describe such shortcomings and the judgment basis according to the criteria. (e.g., with regard to criterion 4.1, the attainment evaluation mechanism of the educational objectives and graduate outcomes established by the program have not been implemented in the real sense. There is no evidence proving the implementation of the mechanism in the past three years. A small number of course evaluation reports provided show that the evaluation data are lack of correlation with the educational objectives, and cannot prove students’ attainment of relevant abilities.)

1. Students

【Criterion】1.1 The program must have policies and procedures to attract outstanding students.

Criterion attainment:

Existing weakness and concerns:

【Criterion】1.2 The program must have enforced policies and procedures on learning advising, career planning, employment guidance and psychology counseling for students.

Criterion attainment:

Existing weakness and concerns:

【Criterion】1.3 The program must track and evaluate student’s outcomes throughout the learning process, and to ensure and document that students

achieve the graduate outcomes through formative evaluation.

Criterion attainment:

Existing weakness and concerns:

【Criterion】1.4 The program must have specific requirements and processes for awarding appropriate academic credits of transfer students.

Criterion attainment:

Existing weakness and concerns:

2. Educational objectives

【Criterion】2.1 The program must have published educational objectives consistent with the mission of the institution and the needs of social and economic development.

Criterion attainment:

Existing weakness and concerns:

【Criterion】2.2 The program must periodically review the educational objectives to ensure they remain consistent with the institutional mission and social & economic development. The review process must involve experts from industry or enterprises.

Criterion attainment:

Existing weakness and concerns:

3. Graduate outcomes

【Criteria content】The program must have clearly documented, published and assessable graduate outcomes. The documented graduate outcomes prepare graduates to attain the program educational objectives. The documented graduate outcomes must include:

3.1 Engineering knowledge: Apply knowledge of mathematics, natural science, engineering fundamentals and engineering specialization to solve complex engineering problems.

3.2 Problem analysis: Identify, formulate, research literature and analyze complex engineering problems reaching substantiated conclusions using basic principles of mathematics, natural sciences and engineering sciences.

3.3 Design/development of solutions: Design solutions for complex engineering problems and design systems, components, or processes that meet specified needs with appropriate societal, public health and safety, legal, cultural and environmental considerations.

3.4 Investigation: Conduct investigations of complex problems using research-based knowledge and research methods, including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

3.5 Modern tool usage: Create, select and apply appropriate techniques, resources, modern engineering and IT tools for complex engineering problems, including prediction and modeling of complex engineering problems, with an understanding of the limitations.

3.6 Engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice and solutions to complex engineering problems.

3.7 Environment and sustainability: Understand and evaluate the sustainability and impact of professional engineering work in solving complex engineering problems in societal and environmental contexts.

3.8 Professional ethics: Have humanities and social science qualities, social responsibility, apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.

3.9 Individual and team work: Function effectively as an individual, team member and principal in a multi-disciplinary team.

3.10 Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions. Have a particular international perspective, communicate and exchange in the cross-cultural context.

3.11 Project management: Understand and master engineering management principles and economic decision-making methods, and apply them in a multi-disciplinary environment.

3.12 Lifelong learning: Recognize the need for, have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Criteria attainment:

Existing weakness and concerns:

4. Continuous improvement

【Criterion】 4.1 The program must establish regulations and mechanism to monitor teaching quality. There must be clear quality standards of main

teaching process. The program must periodically evaluate curriculum and its quality. The program must establish regular, appropriate, documented process and mechanism to assess and evaluate the extent to which the graduate outcomes are being attained.

Criterion attainment:

Existing weakness and concerns:

【Criterion】4.2 The program must have the feedback mechanism from industry and society, including graduates and employers, to evaluate the extent to which the educational objectives are being attained.

Criterion attainment:

Existing weakness and concerns:

【Criterion】4.3. c) The results of periodical evaluation must be systematically utilized as input for program's continuous improvement actions.

Criterion attainment:

Existing weakness and concerns:

5. Curriculum

【Criterion】5.0 The curriculum must be consistent with graduate outcomes. The design of the curriculum must involve experts from the enterprises or industry. The curriculum must include:

Criterion attainment:

Existing weakness and concerns:

【**Criterion**】5.1 Courses on mathematics and natural sciences consistent with the graduate outcomes (accounting for at least 15% of the total credits).

Criterion attainment:

Existing weakness and concerns:

【**Criterion**】5.2 Courses on engineering fundamentals, courses on subject fundamentals and subject courses (accounting for 30% of the total credits). Courses on engineering fundamentals and courses on subject fundamentals may provide training in the ability to apply mathematics and natural science in solving complex problems related to the professional discipline. Subject courses can fully assume the role of training abilities in system design and operation.

Criterion attainment:

Existing weakness and concerns:

【 **Criterion** 】 5.3 Engineering practice and graduate design (thesis) (accounting for 20% of the total credits). The program has a well-established practice education system and cooperate with enterprises to educate students on practical and innovative abilities. The topics of graduate design (thesis) are oriented from the practical engineering problem to educate students engineering awareness, cooperation and abilities to systematically utilize what they have learned to solve complex engineering problems. The guidance and evaluation of graduation design (thesis) involve experts from industry or enterprises.

Criterion attainment:

Existing weakness and concerns:

【**Criterion**】5.4 Courses on humanities, social sciences and general education (accounting for at least 15% of the total credits) to enable students to consider the economic, environmental, legal, safety, health and ethical constraints in engineering practice.

Criterion attainment:

Existing weakness and concerns:

6. Faculty

【**Criterion**】6.1 The faculty is sufficient and has a reasonable structure to meet the program's teaching requirements. The program must have part-time faculty members from industry or enterprises.

Criterion attainment:

Existing weakness and concerns:

【**Criterion**】6.2 Each faculty member must have proper teaching, professional practice, communication, career development and engineering research abilities. The professional background of each faculty member must meet the program's teaching needs.

Criterion attainment:

Existing weakness and concerns:

【**Criterion**】6.3 The faculty members must have sufficient time and effort devoted to undergraduate teaching and student advising and actively

participate in research and reform on teaching.

Criterion attainment:

Existing weakness and concerns:

【Criterion】 6.4 The faculty members must provide student advising, counseling and service activities and accommodate adequate levels of career planning and professional education to the students.

Criterion attainment:

Existing weakness and concerns:

【Criterion】6.5 The faculty members must understand their responsibilities in the program's quality improvement and continuously improve their work.

Criterion attainment:

Existing weakness and concerns:

7. Supporting resources

【Criterion】 7.1 Classrooms, laboratories, practice and exercise workshops, associated equipment are adequate to satisfy teaching needs. The program must have well-established management, maintenance and update mechanism of the facilities enabling students to access. The program cooperates with enterprises to establish practice and exercise bases and provide the engineering practice platform for the student during the teaching process.

Criterion attainment:

Existing weakness and concerns:

【Criterion】7.2 Computer facilities, network conditions, books and documents sufficient to satisfy the needs of teaching and scientific research of the students and faculty. These resources are systematically maintained and accessible, and have a high degree of sharing.

Criterion attainment:

Existing weakness and concerns:

【Criterion】 7.3 Financial resources must be sufficient to meet the needs of teaching.

Criterion attainment:

Existing weakness and concerns:

【Criterion】 7.4 The institution must attract and retain qualified faculty and effectively support faculty development, especially the guidance and training of young faculty.

Criterion attainment:

Existing weakness and concerns:

【Criterion】 7.5 The institution must have sufficient infrastructure to meet the needs of graduate outcomes and support students' practice and innovation activities.

Criterion attainment:

Existing weakness and concerns:

【Criterion】 7.6 The institution must have well-established teaching management and service to support the achievement of graduate outcomes.

Criterion Attainment:

Existing weakness and concerns:

Complementary criteria: (review according to the complementary program criteria)

Criteria attainment:

Existing weakness and concerns:

III. Accreditation Decisions

Voting results of accreditation decisions:

Accreditation Passed with a validity period of 6 years: ;

Accreditation Passed with a validity period of 6 years (conditional): ;

Accreditation Failed:

Accreditation decisions:

Notes:

The accreditation decision is reached by voting after discussion, more than

2/3 (including 2/3) attendees' approval will be deemed as valid. There are three types of accreditation decisions:

（1） Accreditation Passed with a validity period of 6 years: meet requirements of the criteria and have no shortcomings against the criteria.

（2） Accreditation Passed with a validity period of 6 years (conditional): meet requirements of the criteria, but the shortcomings (including existing and potential shortcomings) make the validity period less than six years, and an improvement report should be submitted in the third year, and continuity or suspension of the validity period is subject to the problem solving.

（3） Accreditation Failed: the program has obvious shortcomings against the criteria, which makes it fail the accreditation, and requires further construction, but the program may apply for another accreditation one year later.

***Program Accreditation Sub-committee

Director (Signature):

MM/DD/YY

Attached table:

Summary of Weakness and Concerns Mentioned in the Engineering Education Accreditation Report

Notice: this form is a summary of the existing shortcomings in Part II “Program Attainment” of the report, and is provided to the Accreditation Decision Advisory Committee for reference, and will not be fed back to the institution.

Criterion	Weakness and concerns description
Students	
Educational objectives	
Graduate outcomes	
Continuous improvement	
Curriculum	
Faculty	
Supporting resources	
Complementary criteria	

Attachment 5:

Commitment of the On-site review team of Engineering Education Accreditation

The on-site visit date of the _____(program) accreditation of (institution) is from MM/DD/YY to MM/DD/YY, I hereby commit as follows:

The team should strictly abide by the accreditation rules and requirements before, amid and after the visit, sign the commitment, and follow the requirements below:

(1) To consciously follow the rules and laws.

(2) To strictly abide by the *Policy and Procedure for Engineering Education Accreditation*, carry out the on-site visit according to the criteria, and conduct the accreditation fairly and justly;

(3) To strictly abide by *the Rules and Procedures on Supervision, Arbitration and Violation Treatment of Engineering Education Accreditation* and other regulations.

Committed by (Signature):

MM/DD/YY