



## Guidance on Engineering Education Accreditation: Virtual Review

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## INTRODUCTION

To optimize the procedures of engineering education accreditation, adapt to the requirements of ongoing COVID-19 response, and guide the engineering education accreditation visit of review teams and institutions, this guidance is hereby formulated by China Engineering Education Accreditation Association (“CEEAA”) in accordance with relevant documents such as the *Policy and Procedure of Engineering Education Accreditation* and *the Guidance on Engineering Education Accreditation: On-site Visit*.

## I. REQUIREMENTS

**1. Scope of application.** The guidance serves as a direction for the virtual review, including a virtual review or virtual plus on-site review. Completely on-site visits should be conducted in accordance with *the Guidance on Engineering Education Accreditation: On-site Visit* and *Guidance on Engineering Education Accreditation: how to get accredited step by step* and other guidance documents distributed by CEEAA.

**2. Work objectives.** Focus on key points of accreditation, optimize accreditation procedures, improve work efficiency, ensure accreditation quality, and discover and accumulate review experience through gradually promoting the virtual review method in an organized way. The review team may select the visit method flexibly based on actual work requirements.

**3. Visit methods.** The methods of completely virtual review and virtual plus on-site review can be adopted, where partially virtual review can be intended for part of the personnel or for part of the process. Virtual review should be conducted via the

internet, telephone, e-mail, audio/video conference and other modern information technology means.

**4. Disciplinary requirements.** The review team should implement the relevant disciplinary requirements and reduce the burden on the institution as much as possible during the visit. The review team and the institution should strictly abide by the disciplinary requirements of the accreditation.

## **II. WORK HIGHLIGHTS**

### **1. Focus on the key points**

The accreditation visit should be carried out around the "formulation, implementation and evaluation of graduate outcomes oriented by the educational objectives", paying close attention to whether the program has really established and implemented the outcome-based internal evaluation mechanism and the continuous quality improvement mechanism, whether the results of program's self-evaluation on the attainment of the outcome (course learning outcomes and graduate outcomes) can support the expected objectives, and whether use the evaluation results as input for the continuous improvement of the program.

### **2. Review of materials**

There are two types of review materials, one is the self-study report and the attached materials, and the other is relevant original teaching materials such as randomly accessed examination papers, theses, teaching documents, etc.

**(1) Clarify the key review points of materials.** The self-study report review should focus on the establishment of the outcome-based educational system (an educational

program and syllabus) of the program; the review of materials randomly accessed online should focus on the key supporting teaching modules of the graduate outcomes, especially the implementation effect of the program's core courses and important practices (assessment and evaluation materials).

**(2) Strengthen the review of the self-study report and related materials.** The review team should strengthen the review of the self-study report and its supporting materials, and regularly exchange the review information via video conference, telephone and e-mail. As for the self-study report approved by the program accreditation sub-committees, the review team may propose suspension of the accreditation at any time if it believes that the program fails to meet the standard or the materials are found to be untrue based on further review of relevant materials, and upon confirmation by the program accreditation sub-committee, it shall report the suspension to CEEAA for approval.

**(3) Requirements for the materials accessing.** The duration of the material accessing should not exceed 1 week, and the review of the accessed materials should be completed before the virtual review. Material accessing should be arranged on working days as far as possible. The list of materials for accessing submitted by the review team should be summarized by the team coordinator and approved by the team chair, then request to the institution for material accessing.

The main materials to be accessed online should include the following:

1) Graduation design (thesis). Each evaluator selects at least 10 copies of graduation design (theses) (the program is required to submit a list of theses of the last three years' graduates, including supervisors and transcript for selection by evaluators);

2) Course or course design reports: Each evaluator selects at least 10 reports (the program is required to submit a list of design reports of the last three years' graduates, including supervisors and transcript, as well as project design assignments, and a description of assessment methods and results);

3) Examination and assessment information of around 10 core courses which is consistent with graduate outcomes (including descriptions of assessment methods, grading standards, examination papers, 5 examination samples for each of the categories of "Good", "Medium" and "Poor" grades, transcript, course evaluation report, etc.);

4) At least 5 main courses of the 10 core courses contain relevant evidence materials of other assessment methods besides examination, such as assignments, short essays, performance evaluation and other assessment materials (for example, the homework should include the times, samples of homework with different grades, correction and assessment methods, etc.).

See Attachment 1 for specific list and requirements of materials accessing.

### **3. Conduct virtual review**

The virtual review can be conducted in two ways—virtual or on-site, and the visit includes two parts: firstly, verify and prove relevant problems through talks, interviews, etc.; secondly, examine teaching and practice places. The duration of virtual review should not exceed three days in principle. Below are the requirements for virtual review:

(1) The team coordinator should communicate with the institution to ensure that the institution makes adequate preparation for the meetings and interviews, including

pre-commissioning of video conference rooms, preparatory plans or equipment in place and technical support; the interviews should be arranged in tandem as far as possible, with fixed meeting numbers, fixed machine positions, and smooth connection.

(2) The entrance meeting and exit meeting with the institution should focus on the shortcomings, highlight the key points, improve the effectiveness, and irrelevant topics and personnel should not be included.

(3) Only arrange necessary meetings with institution administrators, dean of the college, head of the department, faculty and students to enhance the efficiency.

(4) Interviews with alumni of the program and the employers can be conducted in one-to-one, one-to-all and all-to-all online.

(5) It is recommended to conduct on-site visits to various teaching and practice places such as laboratories, classrooms and practice bases in principle. Live streaming can be adopted for virtual review, supplemented by the use of video, pictures, text introduction, etc.

(6) If not necessary, the activities such as lectures for evaluators and visits to public facilities can be cancelled.

#### **4. Internal communication of the review team**

For the virtual review, the review team should establish online communication during the virtual review, and communicate with each other on the self-study report review, material accessing, virtual review and other matters at any time. At the same time, the review team should timely exchange the verification information based on the division

of labor to ensure full consultation and form unanimous visit opinions. The team chair should take control of the work progress, keep close contact with the review team members via video conference, WeChat, telephone, etc., communicate and coordinate tasks in a timely manner to ensure efficient and orderly visits. During the virtual review, it is recommended that the review team meeting be held via video conference at least twice a day. The team coordinator should assist the team chair to establish communication and coordinate the matters for online meetings.

### **5. Strictly abide by accreditation disciplines**

The visit should try to avoid disturbing the institution's normal teaching and working order, and the materials should be accessed with the least time and batches; except the virtual review, arbitrarily ask the institution to organize video conferences or telephone interviews should be avoid. The review team should ensure that they are fully engaged in the virtual review. Once determined, the schedule of meetings and interviews shall not be changed at will, and the evaluators should not be late, leave early or midway.

The institution should ensure the authenticity of various accreditation materials such as self-study report, attached materials, and the materials accessed by the review team. The original teaching documents should be provided, and all of the audio and video materials should be made based on daily real scenes.

The work related to material accessing and organization of video communication should be done by the coordinator via contact with the institution, and the members of the review team should not directly contact the institution in principle.

### III. ORGANIZATION FORM

**1. Review team.** The review team shall consist of 1-3 evaluators (including at least one evaluator from enterprises), and a coordinator. The list of the review team is proposed by the program accreditation sub-committee (the coordinator is proposed by the Secretariat of CEEAA) and sent to the institution upon approval by CEEAA.

**2. Program selection.** All programs can adopt the virtual review according to the review team's opinions. If completely online visit is adopted, priority will be given to the following types of programs based on the program's voluntariness: (1) programs with adequate preparation for the accreditation; (2) renewing accreditation programs that have performed well in the self-evaluation; (3) programs with a high level of IT-based management of teaching materials and can firmly support virtual review.

**3. Visit duration:** The virtual review has three stages: Self-study Report Review, Material Accessing and Review, and Virtual review. All virtual review should be completed within three weeks after issuance of the visit notification. Among them, the time spent on "Self-study Report Review" and "Online Material Accessing and Review" should be no less than 20 days, and the time spent on "Virtual review" should not exceed 3 days. The review team should submit an on-site visit report and related materials to the program accreditation sub-committee within 15 days after the end of the virtual review.

**4. Joint visit:** For different programs under review of the same institution, it is encouraged to conduct the virtual review in a way of joint accreditation to enhance the consistency of the accreditation decisions.



## **IV. VISIT PROCESS**

### **1. Self-study report review and material accessing**

After issuance of the visit notification, the institution for accreditation and the review team should make the following preparations.

(1) Program: After the visit notification is issued, the program shall submit the list of materials to be accessed. See Attachment 1 for specific requirements.

(2) Review team members of the review team: After carefully reviewing the self-study report and attached materials submitted by the program, the review team members figure out visit focuses and prepare a list of verification materials, and submit it to the team chair. The team coordinator assists the team chair to consult with the program to determine the visit schedule within one week prior to the virtual review.

(3) Team chair: The team chair collects opinions of the review team, holds a video conference of the review team, studies and determines the key issues to be verified by the review team, coordinates and arranges tasks, and send to the program the list of issues to be verified and the list of materials to be accessed within 10 days after issuance of the visit notification. The review team should carefully review the self-study report. The review team may apply to the program accreditation sub-committee for accreditation suspension when they recognize that the program cannot meet the criteria or finds out that the materials are untrue.

(4) Program: The program should complete two tasks within three days after receiving the feedback from the review team. One is to submit a clarification report for the issues raised by the review team, and the other is to upload the materials to be

accessed (including various electronic documents, video materials, etc.) onto the online storage system or send them to the review team members in other ways.

## **2. Review of the materials by the review team**

After receiving the materials, the review team members shall carry out virtual review of the materials. They may request the coordinator to contact the program to provide additional materials if necessary. During this period, the team chair should regularly organize the review team to discuss and exchange the review results online.

## **3. Virtual review**

(1) Day 1: Verify key problems.

Hold an entrance meeting with the institution/program, as well as interviews with relevant personnel such as students and alumni or employers (it is recommended that the interviews with employers and alumni shall be conducted online). Verify the problems found in the self-study report and online material accessing, etc., and may conduct further review of relevant materials if necessary. Visits to various teaching and practice places such as classrooms, laboratories and practice bases can be conducted by 1-2 evaluators on-site, or can be conducted through live streaming. In the evening, the review team exchanges verification results, determines interviewees and assigns tasks for the next day, etc.

(2) Day 2: Personal interviews, and discussion on the review results. The review team members separately conduct one-to-one interviews with the faculty, further review the accessed materials, discuss and determine verification results, and complete personal visit reports.

(3) Morning of the third day (it can also be the afternoon of the second day): The review team gives feedback to the program. For the programs completely visited online, if the review team believes that there are problems that cannot be verified during virtual review, it can apply to suspend giving opinions, and conduct an on-site visit and provide opinions when conditions permit.

After the virtual review, the evaluators fill in the *Handbook for On-site Evaluators*, and the team chair drafts the *On-site Visit Report* and *Handbook for On-site Review teams* according to the discussion results of the review team. The on-site visit report and related materials should be submitted to corresponding program accreditation sub-committee within 15 days after the virtual review. During the drafting of the report and materials, no more virtual review or material accessing should be arranged, and small amount of necessary material accessing should be arranged by the coordinator in a unified way.

See Attachment 2 for the proposed schedule of the virtual review.

CEEAA reserves the right to interpret this document.

## **Attachment 1:**

# **Requirements for Preparing the Materials for Virtual Review**

### **I. The materials that the program should provide to the review team within five days after issuance of the visit notification**

1. A list of graduation design (theses): a list of graduation design (theses) of the last three years' graduates, including the graduation design (thesis) title, subject type (Engineering Research, Engineering Design, and Others), supervisors (on campus/off campus), grade evaluation, etc.
2. A list of design reports: a list of course design and integrated design reports completed by the last three years' graduates, including the design report title, supervisor, grade evaluation, etc.
3. A list of practice reports: a list of practice reports of the last three years' graduates, including the practice location, supervisor, grade evaluation, etc.
4. A list of on campus students: a list of on campus students in grades 1-4 of the program, including name, class, gender, origin region, and GPA.
5. A list of course teachers: 1) a list of teachers who teach fundamental and compulsory courses, including course name, teacher's name, age, title, etc.; 2) a list of teachers who guide experiments, practice and graduation design (thesis), including course name, teacher's name, age, title, etc.

6. A list of administrative staff: 1) a list of people in charge of college/program; 2) a list of people in charge of college/program related to the accreditation.

7. Alternative alumni list: provide a list of 10-15 alternative alumni from different employers (preferably students who have graduated for about 5 years), including the name, gender, graduation time, employer, job duties, position/title, etc.

8. Alternative list of employers: Provide a list of representatives of 10-15 employers. The information to be provided includes the representative's name, position/title, name of the employer.

9. Video materials: A list of various types video materials of the program, which can include course videos, videos of various teaching laboratories, videos of practice bases, etc.

## **II. The information that the review team should feed back to the program within 10 days after issuance of the visit notification**

1. The key problems to be verified by the review team.

2. The list of teaching materials, management materials and video materials to be accessed by the review team.

3. The list of various personnel to be interviewed by the review team.

## **III. Various materials to be provided by the program as per the request of the review team within three days after receiving feedback from the review team**

1. Graduation design (thesis): It should include the electronic documents such as assignments, theses, literature translation (source text and target text), graduation design (thesis) text, interim inspection, various evaluation records, defense records, grades, etc.<sup>1</sup>

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<sup>1</sup>In order to ensure the virtual visit quality, the capacity of electronic documents must be within the controllable range of the

At the same time, the syllabus, and the report of the last evaluation on the attainment of course learning outcomes, etc. should also be provided. For the programs that have realized fully informationalized (paperless) management of Graduation design (theses), the review team can be provided with a temporary access account to enter the institution's thesis management information system.

2. Course/integrated design report: It should include electronic documents such as design assignments, design report text and drawings, evaluation records, defense records, grades, etc. And at the same time, the syllabus, and the report of the last evaluation on the attainment of course learning outcomes should also be provided.

3. Practice report: It includes the electronic documents such as the students' practice diaries, practice reports, grade records, etc. And at the same time, the syllabus, teaching plans, and the report of the last evaluation on the attainment of course learning outcomes should also be provided

4. Course materials (include theoretical/experimental): Provide the following materials according to the requirements of the review team: 1) teaching materials of the course, including the syllabus, teaching plan (electronic version), name and catalog of textbook, report of the last evaluation on the attainment of course learning outcomes, etc.; 2) assessment materials of the course, including the requirements for various types of assessment on the course for the past three years (such as examination papers, assignments, short essays, experiment reports, etc.), grading standards of the course, students' transcript for the past three years. At the same time, a number of samples of the students' examination papers, assignments, experiment reports (to be selected by the

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server, and the sampling should meet the minimum set of statistical requirements. Unless specifically specified, the electronic documents provided by the program can include WORD files, recognizable photo files, PDF files, a small amount of video files, etc. Requirement of other electronic documents can refer to this document.

review team) should be provided.

5. Video materials: The video materials of laboratories and other teaching facilities should cover teaching facilities, teaching environment (area/layout), safety management, and the requirements specified by the evaluators.

6. Interview list: the program should provide the contact information of the interviewees according to the list of various types of interviews selected by the review team, and inform the interviewees to set aside time for the interviews.

**Attachment 2:**

## **Schedule for the Virtual Review of Engineering Education Accreditation**

<b>Time</b>	<b>Work contents</b>	<b>Notes</b>
<b>Day 0</b>	The review team begins to review the self-study report and the attached materials.	
<b>Days 1-3</b>	The program submits the list of materials that can be accessed.	
<b>Day 6</b>	First internal meeting of the review team, exchange the review opinions of the self-study report, discuss the lists of problems to be verified and materials to be accessed, and determines the visit method for each session.	Prior to the meeting, review team members should put forward preliminary review opinions on the self-study report, the lists of problems to be verified and materials to be accessed.
<b>Days 7-9</b>	The review team feeds back the lists of problems to be verified and materials to be accessed, and discusses the visit method for each session.	
<b>Days 10-12</b>	The institution provides a statement on the problems and the materials to be accessed by the review team.	
<b>Day 16</b>	Second internal meeting of the	



	review team, the review team discusses the review information of the materials accessed, puts forward the requirements for additional materials to be accessed and settles down the schedule.	
<b>Days 16-17</b>	Extract the additional materials as needed.	
<b>Days 18-19</b>	The review team reviews relevant materials, and the institution secures the conditions for the online or on-site visits.	
<b>Day 19</b>	Third internal meeting of the review team, the review team discusses focuses of the virtual review.	Prior to the meeting, formal review opinions on the self-study report and key points of the visits are to be submitted by review team members, and based on the discussion, the coordinator will feed back to the institution.
<b>Days 20-23</b>	Virtual reviews	It should not exceed 2.5 days. See the Guidance for the detailed schedule.
<b>Within three days after the end of virtual review</b>	Internal meeting of the review team, the review team exchanges opinions on the virtual review, confirms the visit report and the division of labor	The review team members should submit the handbook and related materials within seven days after the end of the virtual review.

<p><b>Within 15 days after the end of virtual review</b></p>	<p>The review team submits the visit report and related materials.</p>	
<p><b>Within 15 days after the institution receives the visit report</b></p>	<p>The institution feeds back opinions on the visit report</p>	<p>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.</p>

Notes:

(1) The review team may apply to the program accreditation sub-committee for accreditation suspension if the team believes that the program cannot meet the criteria or finds out that the materials are untrue.

(2) The reference schedule is based on the issuance date of the visit notification, and the visit tasks should be completed within three weeks.