# Appendix B-8: Specialty English of Civil Engineering Syllabus

Appendix B-8

# Specialty English of Civil Engineering Syllabus

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| Course title | Specialty English of Civil Engineering | | | | Course number | 9032113101 | |
| Applicable specialties | Civil Engineering (construction engineering direction ☑ , road bridge direction☐, urban rail transit direction☑) | | | | | | |
| Nature of the course | General education courses ☐ subject foundation courses ☑ professional core courses (elective ☐ required ☐ ) independent development courses (required☐ elective☐) concentrated practice courses☐ | | | | | | |
| Unit offering the course | School of Civil Engineering | | | | | | |
| Total class hours | 60 | credit | 2 | Contact hours | 32 | Self-study hours | 28 |
| Prerequisite courses | College English | | | | | | |
| Textbooks and so on teaching materials | Course materials: Chen Jingfeng. English for Civil Engineering [M]. Shanghai: China Machine Press, 2015.<br>reference material:<br>Teaching websites: CNKI, ASCE, Web of Science, ACI, ICE, Sciencedirect, Scopus | | | | | | |

## 1. Course Introduction

"English for Civil Engineering" is an essential foundational course in the field of civil engineering. It focuses on civil engineering as its main thread and comprehensively introduces the basic content related to civil engineering and its branches. The main topics include professional vocabulary and expressions in civil engineering, searching for English literature, using English databases, correct citation formats, and English writing standards. Through the study of various aspects, students will be able to explain fundamental concepts in mechanics, materials, structural forms, construction, and management in English, mastering key professional terms, expressions, and sentence structures. Upon completing this foundational learning, students will be able to read scientific literature and standards, initially possess the ability to translate civil engineering-related papers into English, and write professional English sentences by simulating common sentence patterns. They will also compare commonly used Chinese and English expressions in domestic and international standards, ultimately organizing their language to write English papers on civil engineering.

## 2. The graduation requirements supported by this course and the implementation path of this course

(1) The graduation requirements that this course can support

| order number | Graduation requirement indicators | Specific content of graduation requirement indicators |
|---|---|---|
| 1 | Graduation requirement 10.2 | Master a foreign language, have a basic understanding of the international status of civil engineering discipline and technology and related industries, and have the initial ability to communicate and exchange in a cross-cultural background. |
| 2 | Graduation requirements 12.2 | Have the ability to learn independently and adapt to the needs of industry development. |

(2) The implementation path of graduation requirement indicators in this course

1. Course objectives

Through the theoretical teaching of this course, students will have basic knowledge and ability. The specific course objectives are as follows:

Course objective 1: Master the professional vocabulary and terminology of civil engineering; understand the construction process of new materials in civil engineering and green buildings; master database search methods and stay informed about the forefront of the discipline; be able to distinguish between professional English and scientific paper writing styles; identify key technical issues in civil engineering structures; master Endnote literature management software and its usage methods.

Course objective 2: Master the reading method of scientific and technological literature, and organize and summarize the reading results; master the general principles of scientific and technological literature writing, and use professional vocabulary and sentence style to translate Chinese and English literature.

2. The corresponding relationship between the teaching objectives of the course and the graduation requirements

| Graduation requirement indicators | Course teaching objectives |
|---|---|
| Graduation requirement 10.2 | Course objective 1 |
| Graduation requirements 12.2 | Course objective 2 |

**3. Intended learning outcomes and details of teaching links**

(1) Intended learning outcomes (ILO)

The intended learning outcomes of this course are as follows

| train objective Knowledge units/competencies | | Knowledge points/ability items | Initial level | Degree of requirement | Intended learning outcomes | Corresponding course requirements |
|---|---|---|---|---|---|---|
| knowledge | Professional vocabulary and terminology | Civil engineering professional vocabulary and terminology | L1 | L2 | 1. Vocabulary and terminology: Correct use of common civil engineering vocabulary and terminology | 10.2 |
| | Explain the basic principles of civil engineering | Reinforced concrete structural system | L1 | L1 | 2. Reinforced concrete structure: understand the main composition of reinforced concrete structure and the role between steel and concrete | 10.2 |
| | | The force characteristics of different types of bridges | L1 | L2 | 3. Different bridge structures: identification and differentiation of different bridge structures in English. | 10.2 |
| | | The structural system of a building | L1 | L2 | 4. Structural system of building: English expression of different parts of the structural system of building | 10.2 |
| | Civil engineering materials | New materials for civil | L1 | L2 | 5. Understanding new materials in civil | 10.2 |

| train objective Knowledge units/competencies | | Knowledge points/ability items | Initial level | Degree of requirement | Intended learning outcomes | Corresponding course requirements |
|---|---|---|---|---|---|---|
| | and construction | engineering | | | engineering: an initial understanding of new materials in civil engineering in English | |
| | | Green construction | L1 | L2 | 6. Green construction: preliminary understanding of the English expression of green construction methods and key technologies in civil engineering | 10.2 |
| ability | Access to printed materials and electronic documents | Familiar with domestic and foreign databases (CNKI, ASCE, ACI, W eb of Science Sciencedirect, ICE, Springer, Scopus) | L1 | L2 | 7. Understand different databases: understand the basic content of different databases and how to use them | 12.2 |
| | | Use library tools (online search, database, search engine, etc.) to retrieve and obtain information, organize and classify the main | L1 | L2 | 8. Information analysis and extraction: Query relevant literature to obtain information, sort and classify the data, extract important | 10.2 |

| train objective Knowledge units/competencies | | Knowledge points/ability items | Initial level | Degree of requirement | Intended learning outcomes | Corresponding course requirements |
|---|---|---|---|---|---|---|
| | | information, and extract the key and innovative content of the information | | | and innovative content, and correctly list the references in the project report | |
| | Read English literature and standards | Understand the content structure of Chinese and English literature | L1 | L2 | 9. Extract questions: Extract questions when reading literature, grasp the overall structure of English writing, and remember specific expressions and sentence patterns. | 10.2 |
| | | Compare and distinguish between everyday English and professional English | L1 | L2 | 10. Expression: distinguish between everyday English and scientific paper expression | 10. 2 |
| | | Learn to use the reference insertion tool Endnote and edit the reference format | L1 | L2 | 11. Endnote Learning: Understand the functions of Endnote software, grasp the use method, and use Endnote to insert Chinese and English literature in | 10.2 |

| train objective Knowledge units/competencies | | Knowledge points/ability items | Initial level | Degree of requirement | Intended learning outcomes | Corresponding course requirements |
|---|---|---|---|---|---|---|
| | | | | | the literature | |
| | | Select the reference format of a journal and insert the literature into the paper using Endnote | L1 | L2 | 12. Literature insertion: According to the reference literature format of a certain journal, use Endnote to edit the reference literature format, and insert Chinese and English literature in the literature | 10.2 |
| | | Compare and understand the similarities and differences between Chinese and foreign norms, and use professional terms in norms | L1 | L2 | 13. Comparative understanding: compare the norms of China and foreign countries, and summarize the English expressions | 10.2 |
| | | Read English literature and obtain the content of the literature center | L1 | L2 | 14. Read literature: Read English literature in the correct way and summarize the central content of the literature | 10.2 |

| train objective Knowledge units/competencies | | Knowledge points/ability items | Initial level | Degree of requirement | Intended learning outcomes | Corresponding course requirements |
|---|---|---|---|---|---|---|
| | Translation of the paper | Translation of Chinese literature | L1 | L3 | 15. Translation of Chinese literature: Use standard vocabulary and idiomatic sentence patterns to translate Chinese literature | 12.2 |
| | | Translation of English literature | L1 | L3 | 16. Translation of English literature: Use standard vocabulary and idiomatic sentence patterns to translate English literature | 12.2 |

| Teaching unit (2 periods) | Intended learning outcomes(ILO) | Content of courses (knowledge point) | Implementation link (In class, experiment, etc.) | Instructional strategies |
|---|---|---|---|---|
| 1 | 1. Vocabulary and terminology: Correct use of common civil engineering vocabulary and terminology | Civil engineering professional vocabulary and terminology | • In-class teaching<br>• Extracurricular practice | • lecture<br>• thesis<br>• Oral presentations<br>• lecture<br>• Problem-oriented<br>• plot |
| 2 | 2. Reinforced concrete structure: understand the main composition of reinforced concrete structure and the interaction between steel bars and concrete | Reinforced concrete structural system | • In-class instruction<br>• Extracurricular practice | • lecture<br>• deliberate<br>• thesis<br>• Oral presentations<br>• Problem-oriented |

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| 3 | 3. Bridges with different structural forms: Identify and distinguish the English expressions of different bridge structures. | The force characteristics of different types of bridges | • learn by watching video<br>• Extracurricular practice<br>• In-class discussion | • learn by watching video<br>• Problem-oriented<br>• deliberate<br>• Oral presentations |
| 4 | 4. Structural system of building: English expresses different parts of the structural system of building | The structural system of a building | • In-class instruction<br>• Extracurricular practice | • lecture<br>• Problem-oriented guidance |
| 5 | 5. Understanding new materials in civil engineering: use English to get an initial understanding of new materials in civil engineering | New materials for civil engineering | • In-class instruction<br>• In-class discussion | • lecture<br>• Problem-oriented<br>• deliberate<br>• Project guidance<br>• Oral presentations |
| 6 | 6. Green construction: preliminary understanding of English expressions in green construction methods and key technologies in civil engineering | Green construction | • learn by watching video<br>• Extracurricular practice | • Online learning videos<br>• Problem-oriented guidance |
| 7 | 7. Understand different databases: understand the basic content and usage of different databases | Familiar with domestic and foreign databases (CNKI, ASCE, ACI, W eb of Science Sciencedirect, ICE, Springer, Scopus) | • In-class instruction<br>• Extracurricular practice | • lecture<br>• Problem-oriented<br>• Oral presentations |
| 8 | 8. Analysis and extraction of information: Query relevant literature to obtain information, | Use library tools (online retrieval, database, search engine, | • In-class instruction<br>• Extracurricular practice | • Practice after class<br>• Problem-oriented |

| | | | | |
|---|---|---|---|---|
| | sort and classify the data, extract important and innovative content, and correctly list the references in the project report | etc.) to retrieve and obtain information, organize and classify the main information, and extract key and innovative content from the information | | |
| 9 | 9. Extract questions: Extract questions when reading literature, grasp the overall structure of English writing, and remember specific expressions and sentence patterns. | Understand the structure of English literature | • In-class instruction<br>• Extracurricular practice | • lecture<br>• Problem-oriented<br>• Oral presentations |
| 10 | 10. Expression: distinguish between everyday English and scientific paper expression methods | Compare and distinguish between everyday English and professional English | • In-class instruction<br>• Extracurricular practice | • lecture<br>• Problem-oriented<br>• deliberate<br>• Project guidance |
| 11 | 11.Endnote Learning: Understand the functions of Endnote software, grasp the use of Endnote, and insert Chinese and English documents in Endnote | Learn to use the reference insertion tool Endnote, and edit the literature format | • In-class instruction<br>• Extracurricular practice<br>• In-class instruction | • lecture<br>• Problem-oriented<br>• deliberate<br>• Project guidance<br>• Oral presentations |
| 12 | 12. Literature insertion: According to the reference literature format of a certain journal, use Endnote to edit the reference literature format, | Select the reference format of a journal and insert the literature into the paper using Endnote | • Reading of classic literature (online and offline)<br>• Explain foreign norms<br>• English writing exercises | • Project guidance<br>• deliberate<br>• final report<br>• Oral presentations<br>• deliberate |

| | | | | |
|---|---|---|---|---|
| | and insert Chinese and English literature in the literature | | | |
| 13 | 13. Comparative understanding: Compare the norms in China and foreign countries, and summarize the English expressions | Compare and understand the similarities and differences between Chinese and foreign norms, and use professional vocabulary | | |
| 14 | Read literature: Read English literature in the correct way and summarize the central content of the literature | Read English literature and obtain the content of the literature center | | |
| 15 | 15. Translation of Chinese documents: Use standard vocabulary and idiomatic sentences to translate Chinese documents | Translation of Chinese literature | | |
| 16 | 16. Translation of English literature: Use standard vocabulary and idiomatic sentence patterns to translate English literature | Translation of English documents | | |

(2) Teaching content, teaching hours, expected learning results (ILO), implementation links (in class, projects, etc.), teaching strategies

## 4. Course assessment (Assessment Scheme)

(1) Course assessment structure

| Examination items | | Scale | Requirement |
|---|---|---|---|
| usual performance | Homework | 60% | Knowledge units (1-12) at least 4 times, knowledge units 13-16 once; completed independently by individuals |
| | Big | 40% | Read an English paper and translate it. Focus on the |

| train objective Knowledge units/competencies | Knowledge points/ability items | Initial level | Degree of requirement | Intended learning outcomes | Corresponding course requirements |
|---|---|---|---|---|---|
| | assignments | | ability of students. | | |
| Total | | 100% | | | |

Note: If the final exam score is less than 50 (excluding), the regular score is not higher than 60.

(2) Course assessment rules:

| Assessment items | primary coverage (Knowledge units/points) | Intended learning outcomes (ILO) | Ability items |
|---|---|---|---|
| Homework | All knowledge units | • Vocabulary and terminology: Use common civil engineering vocabulary and terminology correctly<br>• Different steel structure buildings: understanding the main vocabulary and expression of steel structure<br>• Different bridge structures: identification and differentiation of different bridge structure English expressions.<br>• Structural system of building: English expression of different parts of the structural system of building<br>• Understanding new materials in civil engineering: an initial understanding of new materials in civil engineering in English<br>• Green construction: preliminary understanding of the English expression of green construction | |

| Assessment items | primary coverage (Knowledge units/points) | Intended learning outcomes (ILO) | Ability items |
|---|---|---|---|
| | | methods and key technologies in civil engineering<br>• Understand different databases: understand the basic content of different databases and how to use them<br>• Information analysis and extraction: Query relevant literature to obtain information, sort out and classify the data, extract important and innovative content, and correctly list the references in the project report<br>• Extract questions: Extract questions when reading literature, grasp the overall structure of English writing, and remember specific expressions and sentence patterns.<br>• Expression: distinguish between everyday English and scientific paper expression<br>• Endnote Learning: Understand the functions of Endnote software, grasp the use of Endnote, and use Endnote to insert Chinese and English documents in the literature<br>• Literature insertion: According to the reference literature format of a certain journal, use Endnote to | |

| Assessment items | primary coverage (Knowledge units/points) | Intended learning outcomes (ILO) | Ability items |
|---|---|---|---|
| | | edit the reference literature format, and insert Chinese and English literature in the literature<br>• Comparative understanding: compare the norms of China and foreign countries, and summarize the English expressions<br>• Read literature: Read English literature in the correct way and summarize the central content of the literature<br>• Translation of Chinese literature: Use standard vocabulary and idiomatic sentence patterns to translate Chinese literature<br>• Translation of English literature: Use standard vocabulary and idiomatic sentence patterns to translate English literature | |
| Big assignments | Translate English articles | • Read literature: Read English literature in the correct way and summarize the central content of the literature<br>• Translation of Chinese literature: Use standard vocabulary and idiomatic sentence structure to translate Chinese literature<br>• Translation of English literature: Use standard vocabulary and idiomatic sentence patterns to translate | Ability to effectively express complex civil engineering problems with drawings, charts and words/ ability to analyze and reason complex engineering problems/ ability to read, query and apply industry standards and literature/ ability to communicate effectively and work in a team/ ability to |

| Assessment items | primary coverage (Knowledge units/points) | Intended learning outcomes (ILO) | Ability items |
|---|---|---|---|
| | | English literature | learn independently |

(3) Course assessment criteria

Assessment item 1: regular assignments

Homework must be submitted within the time specified by the teacher, and late homework will be counted as zero points. Each assignment is graded on a percentage basis as follows:

| Execution | Score |
|---|---|
| Complete the work in strict accordance with the requirements, have a clear basic concept, have a correct and reasonable solution to the problem, be able to find and solve problems, be able to summarize and generalize, and write in a standard way | 90-100 points |
| Complete according to the assignment requirements, the basic concept is clear, the solution to the problem is correct and reasonable, the writing is standard | 80-89 points |
| The assignment was basically completed according to the requirements, the basic concepts were basically clear, the solution to the problem was basically correct and reasonable, and the writing was relatively standard | 70-79 points |
| The assignment was basically completed according to the requirements, the basic concepts were not clear, the solution to the problem was basically incorrect and unreasonable, and the writing was still standardized | 60-69 points |
| They cannot complete the assignment according to the requirements, have no clear basic concepts, cannot formulate correct and reasonable solutions to problems, and write in a non-standard way | 1-59 points |
| plagiarize | 0 |

Assessment item 2: major assignment

The major assignment is completed by the group collaboratively.

| Execution | Score |
|---|---|
| Be able to independently complete data search; be able to find and solve problems, and the solution is correct and reasonable; be able to skillfully use knowledge to clearly explain their own views with words, charts and other means; be able to summarize and generalize; write in a standard way with innovative thinking | 90-100 points |
| Ability to independently complete data search; able to find and solve problems, with correct and reasonable solutions; able to use knowledge to | 80-89 points |

| | |
|---|---|
| clearly explain their views with words and charts; able to summarize and write in a standard way | |
| Under the guidance of teachers, I can independently complete the data search; I can find and solve problems, and the solutions are basically correct and reasonable; I can use knowledge to explain my views clearly with words, charts and other means; I can summarize and summarize; my writing is standard | 70-79 points |
| Under the supervision of the teacher, I can complete the data search; under the teachers prompt, I can find and solve problems, and the solution is basically correct and reasonable; I can use knowledge to explain my views with words and charts; under the teachers prompt, I can summarize and conclude; my writing is basically standardized | 60-69 points |
| Under the supervision of the teacher, I can basically complete the data search; I can find and solve problems under the teachers prompt, but the solution is not correct or reasonable; the expression of views is unclear; the writing is not standardized | 1-60 points |
| Plagiarism, not submitted on time | 0 |

**5. The tasks undertaken in the cultivation of the ability to solve complex engineering problems**

In the teaching process, the focus is on introducing basic English expressions and sentence structures. The specific calculation procedures are not detailed. Multimedia tools are used, including lectures, discussions, and literature reviews. In this approach, students are the primary learners, guided to study independently. This method aims to cultivate students proactive investigative awareness, rigorous work attitude, and their ability to recognize and solve practical engineering problems and calculations, fostering innovative thinking. The teaching format emphasizes student self-study, with teachers providing private or public feedback on issues encountered during practice.

The main measures are as follows

1) The teaching philosophy of putting students first will be integrated into the whole process of teaching, emphasizing that students are the main independent completion of the design in the process of practice

Count tasks.

2) In the process of individual guidance, we should pay attention to the individual development of students and encourage students with spare capacity to think innovatively.

3) Pay attention to process control, so that students can really master the methods and steps of steel structure design in the process of course design.

**6. Non-technical ability training and observation**

This course mainly examines students ability to find, read foreign literature and obtain knowledge points from literature.

**7. Course ideological and political design**

While explaining specialized terms, images and introductions of current high-rise buildings and large bridges can be used, such as the worlds top ten skyscrapers, the Hong Kong-Zhuhai-Macao Bridge, and the Hangzhou Bay Bridge. This helps students understand the remarkable achievements in the field of civil engineering and the significant impact it has on social development. It also ignites their enthusiasm for learning and passion for contributing to social construction, fostering a sense of social responsibility and honor.

2. During each class, one to two relatively easy-to-understand professional research papers can be used as supplementary materials. This approach not only explains vocabulary and sentence structures but also delves into scientific research methods applied to specific scientific questions. It helps students gradually develop scientific thinking skills, fosters a rigorous and pragmatic scientific attitude, and enhances their innovative abilities and capacity to independently solve professional problems.

**8. Course evaluation and continuous improvement mechanism**

(1) Course evaluation

The course evaluation cycle is set once per semester.

1. The achievement of teaching objective 1 is evaluated through the post-class assignments and major assignments of knowledge points 1-16;

2. The achievement of teaching objective 2 is evaluated through the major assignment of knowledge points 14-16;

(2) Continuous improvement mechanism

(a) Establish a continuous improvement system

① Establish a continuous improvement group for this course.

② The head of the course continuous improvement group is responsible for organizing, implementing and supervising the continuous improvement process.

③ Develop continuous improvement measures.

(b) Establish a continuous improvement group for this course

Team leader: course leader Team member: course team member

(c) Continuous improvement method of this course

① Regular grade assessment mechanism: According to the academic situation of each class, teachers in the course group must summarize and collect all indicators of regular grade assessment every 4 weeks, adjust the status of students in time and make corresponding records.

② Final examination assessment mechanism: analyze the final examination paper, count the score of each part of the test, use the statistical results to analyze the whole course, and improve the students who take the make-up exam and those who will take the next class.

(d) Continuous improvement measures of this course

① For the regular assessment of grades, measures such as symposiums, discussion groups, the establishment of study groups, and individual exchanges with students are adopted to improve.

② For the final examination, according to the problems in students exams and the key content of this course, unified guidance and other measures are taken for students who take make-up exams to improve.

Formulator (signature):
Director of department (office) review (signature):
Professional person in charge review (seal):