



Presentation of the study programme

1st CYCLE ACADEMIC STUDY PROGRAMME

CIVIL ENGINEERING (BA)

Valid from 2021/2022 | Valid study programme from 20/01/2021

INFORMATION ABOUT THE STUDY PROGRAMME CIVIL ENGINEERING

1. Basic data

| | |
|-----------------------------------|--|
| Programme name | Civil Engineering |
| Programme characteristics | |
| Type | academic |
| Cycle | first cycle |
| KLASIUS-SRV | Academic higher education (first Bologna cycle)/Academic higher education (first Bologna cycle) (16204) |
| ISCED | <ul style="list-style-type: none"> • architecture, urbanism and civil engineering (58) |
| KLASIUS-P | <ul style="list-style-type: none"> • Civil Engineering (not specified in detail) (5820) • Materials and structures (5821) • Construction management (5822) • Traffic structures (5823) • Hydrotechnics (5824) • Civil Engineering (other) (5829) |
| Frascati | <ul style="list-style-type: none"> • Technical sciences (2) |
| Level SOK | Level SOK 7 |
| Level EOK | Level EOK 6 |
| Level EOVK | First cycle |
| Areas/modules/orientations | <ul style="list-style-type: none"> • No subdivision (study programme) • Hydraulics (module) • Municipal Engineering (module) • Structures (module) • Traffic (module) • Buildings (module) |
| Member of University of Ljubljana | <ul style="list-style-type: none"> • Faculty of Civil and Geodetic Engineering, Jamova 2, 1000 Ljubljana, Slovenia |
| Duration (years) | 3 |
| Number of ECTS per year | 60 |
| Implementation of study | full time, part time |

2. Basic goals of the programme

- The graduate acquires general basic knowledge and understanding in the wider area of civil engineering.
- The graduate is motivated for further study at the postgraduate level.
- The graduate understands the creative relation necessary for designing built environment in natural or existing urban environment.
- The graduate has wider knowledge of civil engineering allowing interdisciplinary connection with several other areas.
- The graduate acquires education comparable to related study programmes in Slovenia and in wider European area.
- The student is allowed to change to related undergraduate studies.
- The programme is harmonised with the principles of the Bologna Declaration and follows the recommendations by EUCEET and the FEANI Engineering Association.
- Progression conditions and educational practices that encourage regular study as well as the tutorship system assure good progression rate of the students.

3. General competences

General competences of the graduate after the finished university bachelor degree programme of Civil Engineering are mainly the following:

- Ability to define, understand and creatively solve professional challenges.
- Development of the ability of critical, analytical and synthetic thinking.
- Development of professional responsibility and ethics.

- Skills related to professional understanding and written expression, including the use of foreign technical language (beside literature reading, this competence is supported by lectures of foreign visiting professors, field trips abroad, work on projects in cooperation with foreign partners; unfortunately, the legislation prevents larger scope of teaching activities/courses in English).
- Ability to use information-communication technology.
- Ability to use the acquired knowledge for independent solving of technical problems in civil engineering.
- Ability to find sources, critically evaluate information, independently upgrade the acquired knowledge and deepen the knowledge in individual specialised areas of civil engineering.
- Ability to establish interdisciplinary connections.
- Taking into account the aspects of safety, functional, economic and ecological principles at work.

4. Course-related competences

The graduate of the first cycle study of Civil Engineering acquires mainly the following course-related competences:

- Managing the basic professional knowledge from the area of civil engineering and essential complementary sciences (geology, geodesy, organisation of works, information science).
- Basic qualifications in the area of civil engineering that allow continuation at the second cycle study.
- Ability to individually acquire new skills.
- The graduate is capable of individual performance of less demanding works and solving individual well defined tasks in civil engineering in the areas of design and realisation of works (for buildings as well as engineering structures), spatial planning, laboratory testing of building materials, etc., and is as such a good co-worker in a wider expert team, although generally not capable of independent project management.
- Specific competences are given within the description of individual subjects (see study plans).

5. Conditions for enrolment

To enrol to the first cycle of the university bachelor degree programme Civil Engineering the candidates are required to:

- a) pass the general matura exam;
- b) pass vocational matura exam from one of the secondary school programmes Electrician, Surveyor, Geotechnician, Civil Engineering Technician, Graphic Technician, Chemical Technician, Ship Mechanical Technician, Wood Technician, Logistic Technician, Media Technician, Metallurgical Technician, Navigation Technician, Mechanical Technician, Technician of Economic Communications, Mechatronic Technician, Computer Technician, Glazier Technician, Security Technician, and exam from the general matura exam from mathematics;
- c) finish any of the four-year secondary school programs before 1. 6. 1995.

The study programme is also available for candidates who acquired equivalent education abroad.

6. Selection criteria when enrolment is restricted

In the event of limited enrolment:

- the candidates from items 5. a) and 5. c) shall be selected according to:
 - general success in general matura exam or school-leaving exam 60 %
 - general success in the 3rd and 4th years of the secondary school 40 %
- the candidates from item 5. b) shall be selected according to:
 - general success in professional matura exam 40 %
 - general success in the 3rd and 4th years of the secondary school 40 %
 - success in extra matura examination 20 %

7. Criteria for recognising knowledge and skills acquired before enrolment in the programme

Knowledge conforming in contents and scope to the contents of the courses in the programme Civil Engineering may be acknowledged. The recognition of knowledge and skills acquired before the enrolment is subject to the decision by the Study Board of the Department of Civil Engineering of UL FGГ based on student's written application, certificates

and other documents proving successful acquisition of knowledge and the contents of the knowledge, and in accordance with the Rules on procedure and criteria for the recognition of informally acquired knowledge and skills, adopted at the 15th meeting of the Senate of UL, 29. 5. 2007.

Based on the approval of the acquired knowledge by the departmental Study Board, the knowledge will be evaluated with the same number of ECTS credit points as defined for the related course.

8. Assessment methods

The assessment methods are in accordance with the Statute of University of Ljubljana and listed in the Course Syllabi.

9. Conditions for progression through the programme

Conditions for progression from one year to another

Students are allowed to enrol to the second study year after completing by the end of the academic year all the obligations foreseen by the study plan thus achieving 60 credit points according to ECTS. Students may enrol to the third study year after completing by the end of the academic year the obligations foreseen by the study plan and achieving at least 54 credit points according to ECTS.

Considering the conditions from the above paragraph, students may also enrol to the next year when they accumulate at least 45 credit points according to ECTS. The enrolment according to the above paragraph is subject to the decision by the Study Board of the Department of Civil Engineering at UL FGG.

Faculty of Civil and Geodetic Engineering has been offering tutorship and supervision for its students for several years. From the very first year students have designated supervisors for each class, and smaller groups of students can also have individual tutors consisting of teachers or students from higher classes, who help them select orientation, elective courses, etc.

Students with above-average study results are allowed to advance at a faster rate. An adequate decree thereof shall be adopted by the UL FGG Senate based on a candidate's application and opinion of the UL FGG Study Board. The decree also defines the principles of faster advancement.

Conditions for repeated enrolment in the same year

Failing to meet all the obligations defined by the study programme for the advancement in the next year, students may enrol in the same year for the second time, provided that they have obtained at least 30 credit points according to ECTS.

10. Transfers between study programs

Transfer between programmes shall mean termination of education in the student's original study programme (first programme) and continuation of education in the first cycle academic study programme of Civil Engineering (second programme), in which a part of the completed study requirements from the first study programme are recognised as completed.

Transfers are possible from the first cycle study programmes, and until their expiration also from the undergraduate study programmes adopted after June 11 2004, where the competences of the finished studies are comparable and according to the acknowledgement criteria at least half of the obligations according to ECTS from the first study programme related to compulsory courses of the second study programme can be acknowledged. Considering the scope of acknowledged obligations from the first study programme in the Republic of Slovenia or abroad student may enrol to the same or higher year in the second study programme. Transferring students shall fulfil the conditions for the enrolment to the second study programme.

Applications of candidates for the transfer to the first cycle academic study programme Civil Engineering and the scope of acknowledged obligations in the study programme will be examined individually by the Study Board of the Department of Civil Engineering. If in the procedure of acknowledging obligations for the purpose of transfer the candidate is approved at least the amount of credit points and those point that are required for the enrolment to a higher year of the first cycle academic study programme Civil Engineering, the candidate may enrol to the higher year of the first cycle academic study programme Civil Engineering.

11. Requirements for completion of the study

Students finish the study by accomplishing the foreseen obligations totalling 180 credit points according to ECTS, including practical training and diploma thesis.

12. Conditions for completion of individual parts of the programme

The study is uniform.

13. Qualification, professional or academic title

diplomirani inženir gradbeništva (UN) (first cycle graduate in civil engineering)

14. Qualification, professional or academic title (abbreviation)

- dipl. inž. grad. (UN)

STUDY PROGRAMME COURSES WITH FOORSEEN COURSE COORDINATORS

15. No subdivision (study programme)

1st year, mandatory

| | Code | Course title | Lecturers | Contact hours | | | | | Independent work | Total hours | ECTS | Semester | Elective |
|----|------|--------------------------------------|---|---------------|---------|-----------|--------------------|-------------------|------------------|-------------|------|----------|----------|
| | | | | Lectures | Seminar | Tutorials | Clinical tutorials | Other study forms | | | | | |
| 1. | 1010 | Introduction to Civil Engineering | | 45 | 0 | 0 | 0 | 0 | 45 | 90 | 3 | Winter | no |
| 2. | 1581 | Physics | Zvonko Jagličić | 75 | 15 | 45 | 0 | 0 | 135 | 270 | 9 | Winter | no |
| 3. | 1007 | Construction and Building Materials | Violeta Bokan-Bosiljkov | 60 | 0 | 0 | 60 | 0 | 120 | 240 | 8 | Winter | no |
| 4. | 1629 | Mathematics I | Marjeta Kramar Fijavž, Gašper Jaklič | 75 | 0 | 75 | 0 | 0 | 150 | 300 | 10 | Winter | no |
| 5. | 1583 | Mathematics II | Marjeta Kramar Fijavž, Ganna Kudryavtseva | 60 | 0 | 60 | 0 | 0 | 120 | 240 | 8 | Summer | no |
| 6. | 1012 | Engineering Communication | Žiga Turk | 30 | 0 | 15 | 0 | 0 | 45 | 90 | 3 | Summer | no |
| 7. | 1015 | Computer Science and Informatics | Matevž Dolenc, Vlado Stankovski | 30 | 0 | 0 | 30 | 0 | 60 | 120 | 4 | Summer | no |
| 8. | 1014 | Introduction to Statics and Dynamics | Dejan Zupan, Igor Planinc | 75 | 0 | 60 | 0 | 0 | 135 | 270 | 9 | Summer | no |
| 9. | 1616 | Buildings I | Mitja Košir, Vlatko Bosiljkov | 45 | 15 | 30 | 0 | 0 | 90 | 180 | 6 | Summer | no |
| | | Total | | 495 | 30 | 285 | 90 | 0 | 900 | 1800 | 60 | | |

2nd year, mandatory

| | Code | Course title | Lecturers | Contact hours | | | | | Independent work | Total hours | ECTS | Semester | Elective |
|-------|------|---|------------------------------------|---------------|---------|-----------|--------------------|-------------------|------------------|-------------|------|----------------|----------|
| | | | | Lectures | Seminar | Tutorials | Clinical tutorials | Other study forms | | | | | |
| 1. | 1215 | Roads | Peter Lipar | 45 | 0 | 0 | 45 | 0 | 90 | 180 | 6 | Winter | no |
| 2. | 1136 | Hydromechanics | Matjaž Četina | 45 | 0 | 0 | 30 | 0 | 75 | 150 | 5 | Winter | no |
| 3. | 1655 | Technologies in Civil Engineering | Andrej Kryžanowski | 30 | 15 | 30 | 0 | 0 | 75 | 150 | 5 | Winter | no |
| 4. | 1656 | Strength of Materials | Igor Planinc | 75 | 0 | 75 | 0 | 0 | 150 | 300 | 10 | Winter | no |
| 5. | 1009 | Spatial Development | Maruška Šubic-Kovač | 30 | 0 | 30 | 0 | 0 | 60 | 120 | 4 | Winter | no |
| 6. | 1011 | Geodetic Engineering | Dušan Kogoj | 30 | 0 | 0 | 30 | 0 | 60 | 120 | 4 | Summer | no |
| 7. | 1133 | Soil Mechanics and Engineering Geology | Boštjan Pulko, Vladimir Vukadin | 60 | 0 | 0 | 40 | 5 | 105 | 210 | 7 | Summer | no |
| 8. | 1216 | Organisation and Management of Construction Works | Jana Šelih | 45 | 0 | 45 | 0 | 0 | 90 | 180 | 6 | Summer | no |
| 9. | 1139 | Structural Analysis | Matej Fischinger, Tatjana Isaković | 45 | 0 | 45 | 0 | 0 | 90 | 180 | 6 | Summer | no |
| 10. | 1657 | Buildings II | Mitja Košir | 30 | 0 | 0 | 15 | 0 | 45 | 90 | 3 | Summer | no |
| 11. | 1533 | External elective course | | 30 | 0 | 30 | 0 | 0 | 60 | 120 | 4 | Summer, Winter | yes |
| Total | | | | 465 | 15 | 255 | 160 | 5 | 900 | 1800 | 60 | | |

3rd year, mandatory

| | Code | Course title | Lecturers | Contact hours | | | | | Independent work | Total hours | ECTS | Semester | Elective |
|-------|------|--|-------------------------------------|---------------|---------|-----------|--------------------|-------------------|------------------|-------------|------|----------|----------|
| | | | | Lectures | Seminar | Tutorials | Clinical tutorials | Other study forms | | | | | |
| 1. | 1685 | Concrete Structures | Jože Lopatič | 60 | 0 | 60 | 0 | 0 | 120 | 240 | 8 | Winter | no |
| 2. | 1137 | Geotechnical Engineering | Janko Logar | 45 | 10 | 0 | 30 | 5 | 90 | 180 | 6 | Winter | no |
| 3. | 1138 | Engineering Hydraulics | Andrej Kryžanowski, Matjaž Mikoš | 45 | 15 | 30 | 0 | 0 | 90 | 180 | 6 | Winter | no |
| 4. | 1217 | Steel Structures I | Jože Korelc, Primož Može | 45 | 0 | 45 | 0 | 0 | 90 | 180 | 6 | Winter | no |
| 5. | 1218 | Fundamental Concepts of Earthquake Engineering | Matjaž Dolšek | 30 | 0 | 30 | 0 | 0 | 60 | 120 | 4 | Winter | no |
| Total | | | | 225 | 25 | 165 | 30 | 5 | 450 | 900 | 30 | | |

Elective courses

| | Code | Course title | Lecturers | Contact hours | | | | | Independent work | Total hours | ECTS | Semester | Elective |
|----|------|---|--------------------------|---------------|---------|-----------|--------------------|-------------------|------------------|-------------|------|----------------|----------|
| | | | | Lectures | Seminar | Tutorials | Clinical tutorials | Other study forms | | | | | |
| 1. | 1612 | English for Civil and Geodetic Engineering | Monika Kavalir | 15 | 15 | 30 | 0 | 0 | 60 | 120 | 4 | Summer, Winter | yes |
| 2. | 1637 | Digital Design | Tomo Cerovšek | 30 | 0 | 30 | 0 | 0 | 60 | 120 | 4 | Summer, Winter | yes |
| 3. | 1614 | Building Right and Building Contract | Miha Juhart, Peter Grilc | 30 | 0 | 30 | 0 | 0 | 60 | 120 | 4 | Summer, Winter | yes |
| 4. | 1613 | Entrepreneurship | Aleš Vahčič | 45 | 0 | 15 | 0 | 0 | 60 | 120 | 4 | Summer, Winter | yes |
| 5. | 1615 | Administrative Procedure and Administrative Dispute | Senko Pličanič | 45 | 0 | 15 | 0 | 0 | 60 | 120 | 4 | Summer, Winter | yes |
| 6. | 1620 | Physical Education | prof. dr. Branko Škof | 5 | 0 | 0 | 0 | 55 | 60 | 120 | 4 | Summer, Winter | yes |
| 7. | 1630 | From Idea to Building Structure | | 60 | 0 | 15 | 0 | 0 | 75 | 150 | 5 | Summer, Winter | yes |
| | | Total | | 215 | 60 | 105 | 0 | 55 | 435 | 870 | 29 | | |

Hydraulics (module)**3rd year, mandatory**

| | Code | Course title | Lecturers | Contact hours | | | | | Independent work | Total hours | ECTS | Semester | Elective |
|-------|------|--------------------------------------|-------------------------|---------------|---------|-----------|--------------------|-------------------|------------------|-------------|------|----------------|----------|
| | | | | Lectures | Seminar | Tutorials | Clinical tutorials | Other study forms | | | | | |
| 1. | 1727 | Hydraulics | Mojca Šraj | 30 | 0 | 0 | 30 | 0 | 60 | 120 | 4 | Summer | no |
| 2. | 1726 | Hydrology | Franci Steinman | 30 | 15 | 0 | 30 | 0 | 75 | 150 | 5 | Summer | no |
| 3. | 1436 | Introduction to Sanitary Engineering | Franc Steinman | 30 | 0 | 0 | 30 | 0 | 60 | 120 | 4 | Summer | no |
| 4. | 1430 | Practical Training | Andreja Istenič Starčič | 6 | 0 | 0 | 0 | 80 | 34 | 120 | 4 | Summer | no |
| 5. | 1237 | Diploma work | | 0 | 0 | 0 | 0 | 75 | 75 | 150 | 5 | Summer | no |
| 6. | 1532 | External elective course | | 60 | 0 | 60 | 0 | 0 | 120 | 240 | 8 | Summer, Winter | yes |
| Total | | | | 156 | 15 | 60 | 90 | 155 | 424 | 900 | 30 | | |

Municipal Engineering (module)

3rd year, mandatory

| | Code | Course title | Lecturers | Contact hours | | | | | Independent work | Total hours | ECTS | Semester | Elective |
|----|------|-----------------------------------|-------------------------|---------------|---------|-----------|--------------------|-------------------|------------------|-------------|------|----------------|----------|
| | | | | Lectures | Seminar | Tutorials | Clinical tutorials | Other study forms | | | | | |
| 1. | 1440 | Municipal Economics | Maruška Šubic-Kovač | 45 | 0 | 0 | 30 | 0 | 75 | 150 | 5 | Summer | no |
| 2. | 1441 | Building Land Management | Maruška Šubic-Kovač | 30 | 0 | 0 | 30 | 0 | 60 | 120 | 4 | Summer | no |
| 3. | 1681 | Communal Technical Infrastructure | Maruška Šubic-Kovač | 30 | 0 | 0 | 30 | 0 | 60 | 120 | 4 | Summer | no |
| 4. | 1430 | Practical Training | Andreja Istenič Starčič | 6 | 0 | 0 | 0 | 80 | 34 | 120 | 4 | Summer | no |
| 5. | 1237 | Diploma work | | 0 | 0 | 0 | 0 | 75 | 75 | 150 | 5 | Summer | no |
| 6. | 1532 | External elective course | | 60 | 0 | 60 | 0 | 0 | 120 | 240 | 8 | Summer, Winter | yes |
| | | Total | | 171 | 0 | 60 | 90 | 155 | 424 | 900 | 30 | | |

Structures (module)

3rd year, mandatory

| | Code | Course title | Lecturers | Contact hours | | | | | Independent work | Total hours | ECTS | Semester | Elective |
|-------|------|---------------------------------|-------------------------------|---------------|---------|-----------|--------------------|-------------------|------------------|-------------|------|----------------|----------|
| | | | | Lectures | Seminar | Tutorials | Clinical tutorials | Other study forms | | | | | |
| 1. | 1431 | Plates and Shells | Boštjan Brank | 45 | 0 | 0 | 30 | 0 | 75 | 150 | 5 | Summer | no |
| 2. | 1432 | Concrete and Masonry Structures | Drago Saje, Sebastjan Bratina | 30 | 0 | 0 | 30 | 0 | 60 | 120 | 4 | Summer | no |
| 3. | 1433 | Timber Structures | Jože Lopatič | 30 | 0 | 0 | 30 | 0 | 60 | 120 | 4 | Summer | no |
| 4. | 1430 | Practical Training | Andreja Istenič Starčič | 6 | 0 | 0 | 0 | 80 | 34 | 120 | 4 | Summer | no |
| 5. | 1237 | Diploma work | | 0 | 0 | 0 | 0 | 75 | 75 | 150 | 5 | Summer | no |
| 6. | 1532 | External elective course | | 60 | 0 | 60 | 0 | 0 | 120 | 240 | 8 | Summer, Winter | yes |
| Total | | | | 171 | 0 | 60 | 90 | 155 | 424 | 900 | 30 | | |

Traffic (module)**3rd year, mandatory**

| | Code | Course title | Lecturers | Contact hours | | | | | Independent work | Total hours | ECTS | Semester | Elective |
|----|------|----------------------------------|-------------------------|---------------|---------|-----------|--------------------|-------------------|------------------|-------------|------|----------------|----------|
| | | | | Lectures | Seminar | Tutorials | Clinical tutorials | Other study forms | | | | | |
| 1. | 1437 | Railways | Bogdan Zgonc | 45 | 0 | 0 | 30 | 0 | 75 | 150 | 5 | Summer | no |
| 2. | 1438 | Transportation Engineering | Tomaž Maher | 30 | 0 | 0 | 30 | 0 | 60 | 120 | 4 | Summer | no |
| 3. | 1443 | Geographical Information Systems | Marijan Žura | 30 | 0 | 0 | 30 | 0 | 60 | 120 | 4 | Summer | no |
| 4. | 1430 | Practical Training | Andreja Istenič Starčič | 6 | 0 | 0 | 0 | 80 | 34 | 120 | 4 | Summer | no |
| 5. | 1237 | Diploma work | | 0 | 0 | 0 | 0 | 75 | 75 | 150 | 5 | Summer | no |
| 6. | 1532 | External elective course | | 60 | 0 | 60 | 0 | 0 | 120 | 240 | 8 | Summer, Winter | yes |
| | | Total | | 171 | 0 | 60 | 90 | 155 | 424 | 900 | 30 | | |

Buildings (module)**3rd year, mandatory**

| | Code | Course title | Lecturers | Contact hours | | | | | Independent work | Total hours | ECTS | Semester | Elective |
|----|------|---------------------------------|----------------------------------|---------------|---------|-----------|--------------------|-------------------|------------------|-------------|------|-------------------|----------|
| | | | | Lectures | Seminar | Tutorials | Clinical tutorials | Other study forms | | | | | |
| 1. | 1444 | Introduction to Building Design | Mitja Košir | 30 | 0 | 0 | 45 | 0 | 75 | 150 | 5 | Summer | no |
| 2. | 1445 | Elements of Building Physics | Jožef Peternej | 30 | 0 | 0 | 30 | 0 | 60 | 120 | 4 | Summer | no |
| 3. | 1446 | Building Renovation | Mitja Košir, Vlatko Bosiljkov | 30 | 0 | 0 | 30 | 0 | 60 | 120 | 4 | Summer | no |
| 4. | 1448 | Bioclimatic Design | Mitja Košir | 30 | 0 | 0 | 30 | 0 | 60 | 120 | 4 | Summer | no |
| 5. | 1449 | Project Management | Jana Šelih, Primož Banovec | 30 | 0 | 30 | 0 | 0 | 60 | 120 | 4 | Summer | no |
| 6. | 1430 | Practical Training | Andreja Istenič Starčič | 6 | 0 | 0 | 0 | 80 | 34 | 120 | 4 | Summer | no |
| 7. | 1237 | Diploma work | | 0 | 0 | 0 | 0 | 75 | 75 | 150 | 5 | Summer | no |
| 8. | 1532 | External elective course | | 60 | 0 | 60 | 0 | 0 | 120 | 240 | 8 | Summer, Winter | yes |
| | | Total | | 216 | 0 | 90 | 135 | 155 | 544 | 1140 | 38 | | |

16. Possibilities of elective courses and mobility

Five elective courses are foreseen:

- two external elective courses in the 4th semester (4 ECTS) and in the 6th semester (5 ECTS) and
- elective module (Hydraulics, Municipal Engineering, Structures, Traffic and Buildings) consisting of 3 courses (5+4+4 ECTS) in the 6th semester.

Students can select external elective courses from any study programme at the University. Nevertheless, a list of elective courses is proposed also within the study programme Civil Engineering from the area of law, economy, administration, communicology, foreign languages, as well as specialised courses from the technical and natural sciences. At UL FGG students may also select courses from other study programmes: Geodesy and Geoinformatics, Technical Real Estate Management, Water Management and Municipal Engineering and Buildings.

Student may transfer 30 ECTS points of the programme (one study semester) from any other area of civil engineering, provided there exists an adequate agreement signed with UL FGG. As students are required to pass the mandatory exams at the institution of enrolment, such exchange is most appropriate in the 6th semester of the study.