# ASIIN Seal & European Label

# Accreditation Report

## Bachelor's Degree Programme
## *Civil Engineering*

Provided by
**Universidad de San Martín de Porres**
**Lima, Peru**

Version: September 24th, 2024

# Table of Content

# A About the Accreditation Process

| Name of the degree programme (in original language) | (Official) English translation of the name | Labels applied for [1] | Previous accreditation (issuing agency, validity) | Involved Technical Committees (TC)[2] |
|---|---|---|---|---|
| Ingeniería Civil | Civil Engineering | ASIIN, AR, EUR-ACE® Label | | 03 |
| **Date of the contract:** 29.03.2022<br>**Submission of the final version of the self-assessment report:** 24.02.2023<br>**Date of the onsite visit:** 29.-30.03.2023<br>**at:** Faculty of Engineering and Architecture, Lima | | | | |
| **Peer panel:**<br>Univ.-Prof. Dr.-Ing Tim Ricken, University of Stuttgart<br>Prof. Dr.-Ing. Johannes Weinig, University of Applied Sciences Bielefeld<br>Dipl.-Ing. Alfredo Barillas, Tichelmann & Barillas Ingenieure<br>Angelo Piero Puccio Arméstar, student representative from Pontificia Universidad Católica del Perú (PUCP) | | | | |
| **Representative of the ASIIN headquarter:** Yanna Sumkötter | | | | |
| **Responsible decision-making committee:** Accreditation Commission for Degree Programmes | | | | |
| **Criteria used:**<br>European Standards and Guidelines as of May 15, 2015<br>ASIIN General Criteria, as of December 7, 2021 | | | | |

[1] ASIIN Seal for degree programmes; EUR-ACE® Label: European Label for Engineering Programmes
[2] TC: Technical Committee for the following subject areas: TC 03 - Civil Engineering, Geodesy and Architecture

| | |
|---|---|
| Subject-Specific Criteria of Technical Committee 03 – Civil Engineering, Geodesy and Architecture as of September 28, 2012 | |

# B Characteristics of the Degree Programme

| a) Name | Final degree (original/English translation) | b) Areas of Specialization | c) Corresponding level of the EQF[3] | d) Mode of Study | e) Double/Joint Degree | f) Duration | g) Credit points/unit | h) Intake rhythm & First time of offer |
|---|---|---|---|---|---|---|---|---|
| Civil Engineering | Bachiller en Ingeniería Civil / Bachelor in Civil Engineering | | 6 | Full time | - | 10 Semester | 222 Peruvian credits (˜ 300 ECTS) | Every semester / 1982 |

The University of San Martín de Porres (USMP) is a private university located in Lima, the capital and largest city of Peru. In addition, there are the North Campus, in Chiclayo, and the South Campus, in Arequipa. It was established on 17th May 1962 and originally founded by the Dominican Order of the Catholic Church. Currently, the university has eight faculties and three institutes. More than 30.000 students are enrolled and about 41.058 graduated from USMP.

The Faculty of Engineering and Architecture of USMP was founded in 1983 and consists of five bachelor's degree programmes: Civil Engineering, Information Systems, Industrial Engineering, Architecture and Aeronautical Sciences. The faculty also offers two Master's degree programmes and one PhD programme. Furthermore, the faculty has several research institutes and centres such as the Research Centre (FIA), the Software and Interactive Technologies Research Laboratory, the Centre for Innovation and Development of Food Products (CIDPA).

For the Bachelor's degree programme Civil Engineering the institution has presented the following profile on the programme's website:

"Civil Engineering is the branch of engineering oriented towards the design and construction of infrastructure in buildings, road works, hydraulic works, etc. The Civil Engineer, graduated from the Civil Engineering programme of the Universidad de San Martín de Porres, is a professional who possesses a harmonious set of skills, attitudes and values, which qualifies him to develop solutions for all kinds of works and infrastructure studies, technically and economically feasible and sustainable, socially and environmentally compatible.

[3] EQF = The European Qualifications Framework for lifelong learning

MISSION

To train Civil Engineers in an integral way, with solid scientific, technological and humanistic training, who lead the profession to be able to perform the design, construction, supervision, consulting and management of projects and works, with skills for research and business formation, with ethics, social responsibility, respect for culture, the environment and sustainable development.

VISION

We will be […] dedicated to the integral formation of its professionals, with research skills, with technical capacity for planning, design, construction and management of infrastructure and civil works in general, as well as their maintenance and rehabilitation.

Graduates of the Civil Engineering degree programme will be able to:

- OE1: Design and execute comprehensive civil engineering projects.
- OE2: Research and develop their creative and entrepreneurial skills in the fields of civil engineering with critical thinking.
- OE3: Lead multidisciplinary teams, communicate rigorously.
- OE4: Participate in sustainable project proposals with professional ethics and social commitment.
- OE5: Consolidate their development and professional performance by staying up-to-date in the field of Civil Engineering."

# C Peer Report for the ASIIN Seal[4]

## 1. The Degree Programme: Concept, content & implementation

**Criterion 1.1 Objectives and learning outcomes of a degree programme (intended qualifications profile)**

**Evidence:**

- Self-Assessment Report
- Study plan of the degree programme
- Objectives-Module Matrices
- Module descriptions
- Webpage USMP
- Webpage Faculty of Engineering and Architecture
- Discussions during the audit

**Preliminary assessment and analysis of the experts:**
The experts refer to the respective ASIIN Subject-Specific Criteria (SSC) of the Technical Committee 03 Civil Engineering, Geodesy and Architecture, the objectives-module-matrices for the degree programme, and the modules as a basis for judging whether the intended learning outcomes of the degree programmes under review correspond with the competences as outlined by the SSC.

USMP has described and published programme educational objectives (OEs) and programme learning outcomes (REs) for the Civil Engineering degree programme. While the OEs are developed based on the vision and mission of the university as well as the respec-

[4] This part of the report applies also for the assessment for the European subject-specific labels. After the conclusion of the procedure, the stated requirements and/or recommendations and the deadlines are equally valid for the ASIIN seal as well as for the sought subject-specific label.

tive faculty and are rather general and concise, the REs describe in great detail the competences the students should acquire during their studies. By means of being published on the website of the degree programme, the OEs and REs are easily accessible for students as well as other stakeholders. Furthermore, there are regular revision processes in place that take into account feedback by external and internal stakeholders. A minor curriculum adjustment is done whenever needed whereas a major revision including consultations of stakeholders takes place every three years.

The peers note that the relationship between OEs and REs has been established in a comprehensible and logical manner. The development of REs of the study programme involves both internal and external stakeholders so that the curriculum can be adapted and modified according to the needs of the industry and the graduates on a regular basis. For example, USMP regularly conducts surveys, through which the different stakeholders get the chance to assess the programme and its main objectives and adapt them if necessary. Internal stakeholders include all of USMP members (students, teaching staff, and non-academic employees), while the external stakeholders include the industry, alumni, the government, and society.

According to the self-assessment report provided by the University, graduates of the Bachelor's degree programme Civil Engineering are able to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics. They know how to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental and economic factors. In addition, they have an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts. Furthermore, they are capable of developing and conducting appropriate experimentation, analyzing and interpreting data, and using engineering judgment to draw conclusions.

Next to the professional skills, the students of the Civil Engineering degree programme are supposed to acquire personal and social skills such as critical and creative thinking, communication skills, adaptability, the capacity to work in (international) teams, and leadership skills. In addition, they should be able to solve engineering problems through research and the application of different concepts and methods.

In the peers' opinion, the intended qualification profile of the degree programme under review is clear, plausible and allows students to take up an occupation, which corresponds to their qualification. They learn that the graduates of USMP are much sought after in the labor market. The representatives of industry emphasize the high quality of the graduates

of the programme under review and students as well as graduates are satisfied with and well aware of their good job perspectives.

In summary, the peers confirm that the learning outcomes of the Bachelor's degree programme Civil Engineering adequately reflect level 6 of the European Qualification Framework (EQF) and follow the EUR-ACE framework standards of engineering programmes. The programme learning outcomes of the programme are consistent with the respective ASIIN Subject-Specific Criteria of the Technical Committee of Civil Engineering, Geodesy and Architecture. They aim at the acquisition of specific competences and are well-anchored, binding and easily accessible to all stakeholders.

## Criterion 1.2 Name of the degree programme

**Evidence:**

- Self-Assessment Report
- Sample of Diploma Supplement for the degree programme

**Preliminary assessment and analysis of the experts:**
According to the self-assessment report, the name of the programme – Civil Engineering (span. Ingeniería Civil) is in accordance with the criteria and standards for the evaluation of Engineering careers, within the framework of the accreditation processes conducted by the CNAP. The experts hold the opinion that the English translation and the original Spanish name of the Bachelor's degree programme Civil Engineering correspond with the intended aims and learning outcomes as well as the main course language.

## Criterion 1.3 Curriculum

**Evidence:**

- Self-Assessment Report
- Academic Guidelines
- Regulations for the Revision and Modification of the Curriculum and Syllabi
- Cooperation agreements (MoU)

- Study plan of the degree programme 2023-I
- Module descriptions
- Webpage USMP
- Webpage Faculty of Engineering and Architecture
- Discussions during the audit

**Preliminary assessment and analysis of the experts:**

*Content and Structure*

The Bachelor's degree programme Civil Engineering is a five-year programme each of which is divided in two terms of seventeen weeks, upon completion of which graduates are awarded a Bachelor in Civil Engineering. In order to obtain this degree, students have to fulfil university, faculty and departmental requirements and complete 222 Peruvian credits.

USMP presents the programme's curriculum in following table:

**PROGRAM OF CIVIL ENGINEERING**
**CURRICULUM 2023**

| CÓDE | TERM / COURSES | CREDITS | REQUIREMENTS |
|---|---|---|---|
| | **I** | | |
| 09066801051 | Discrete Mathematics | 05 | ---------- |
| 09066301040 | Analytic Geometry | 04 | ---------- |
| 09000301030 | Philosophy | 03 | ---------- |
| 09990601020 | Intercultural Citizenship | 02 | ---------- |
| 09066201020 | Introduction to Engineering | 02 | ---------- |
| 09000201020 | Spanish | 02 | ---------- |
| 09071001020 | Study Methods | 02 | ---------- |
| 09990501010 | Accessibility and Universal Design | 01 | |
| TR000501010 | Activities I | 01 | ---------- |
| TR000101010 | English I | 01 | ---------- |
| | | **23** | |
| | **II** | | |
| 09036602050 | Linear Algebra | 05 | ---------- |
| 09065502050 | Calculus I | 05 | Discrete Mathematics, Analytic Geomet |
| 09066102030 | Drawing and Graphic Design | 03 | Analytic Geomet |
| 09127402031 | Introduction to Economics | 03 | Intercultural Citizenship |
| 09127502030 | Topography | 03 | ---------- |
| 09025102020 | General Geology | 02 | Introduction to Engineering |
| TR000602010 | Activities II | 01 | Activities I |
| TR000202010 | English II | 01 | English I |
| | | **23** | |
| | **III** | | |
| 09065603050 | Calculus II | 05 | Calculus I |
| 09005603050 | Physics I | 05 | Linear Algebra, Calculus I |
| 09005403040 | Statistics and Probabilities I | 04 | Calculus I |
| 09003703030 | General Chemistry | 03 | Introduction to Engineering |
| 09127703030 | Materials Technology | 03 | General Geology |
| 09093903020 | Advanced Topography | 02 | Topography |
| | | **22** | |
| | **IV** | | |
| 09007404050 | Physics II | 05 | Physics I |
| 09041204040 | Differential Equations | 04 | Calculus II |
| 09025404040 | Statics | 04 | Calculus II |
| 09004904030 | Construction I | 03 | Materials Technology |
| 09025604030 | Dynamics | 03 | Physics I |
| 09026804030 | Concrete Technology | 03 | Materials Technology |
| | | **22** | |

| | | | |
|---|---|---|---|
| | V | | |
| 09026005050 | Material Resistance I | 05 | Statics |
| 09028205041 | Roads I | 04 | Construction I, Advanced Topography |
| 09006705040 | Construction II | 04 | Construction I |
| 09012205046 | General Accounting | 04 | Introduction to Economics |
| 09059705030 | Ecology and Environmental Impact | 03 | Construction I |
| 09093805021 | Electrical Installations in Building | 02 | Construction I, Physics II |
| | | 22 | |
| | VI | | |
| 09026506050 | Fluid Mechanics I | 05 | Dynamics, Differential Equations |
| 09128106051 | Pavements | 05 | Roads I |
| 09014506041 | Financial Management | 04 | General Accounting |
| 09026106040 | Soil Mechanics I | 04 | General Geology |
| 09026606040 | Material Resistance II | 04 | Material Resistance I |
| | | 22 | |
| | VII | | |
| 09026907050 | Fluid Mechanics II | 05 | Fluid Mechanics I |
| 09027107040 | Structural Analysis I | 04 | Material Resistance II |
| 09054807041 | Project Formulation and Evaluation | 04 | Financial Management Ecology and Envir |
| 09026707041 | Soil Mechanics II | 04 | Soil Mechanics I, Pavements |
| 09059507041 | Budget and Work Schedule | 04 | Construction II, Electrical Installations in Building and Financial Management |
| 09990707011 | Disability and Inclusion | 01 | Accessibility and Universal Design |
| | | 22 | |

| CÓDIGO | CICLO / ASIGNATURAS | CRÉDITOS | REQUISITOS |
|---|---|---|---|
| | VIII | | |
| 09029508040 | Structural Analysis II | 04 | Structural Analysis I |
| 09027508041 | Reinforced Concrete I | 04 | Structural Analysis I Soil Mechanics II |
| 09085208041 | Project Management - PMI | 04 | Project Formulation and Evaluation |
| 09013108042 | Cost Engineering | 04 | Budget and Work Schedule |
| 09059608030 | Hydrology | 03 | Fluid Mechanics II |
| 09009608031 | Sanitary Installations | 03 | Fluid Mechanics I |
| | | 22 | |
| | IX | | |
| 09028609041 | Reinforced Concrete II | 04 | Reinforced Concrete I |
| 09129009040 | Earthquake Engineering | 04 | Structural Analysis II |
| 09128909041 | Final Proyect of Civil Engineering I | 04 | Project Management - PMI |
| 09030909031 | Hydraulics | 03 | Hidrology, Sanitary Installations |
| 09129409031 | Valuation and Appraisal Engineering | 03 | Project Man - PMI Cost Engineering |
| 09027609020 | Steel and Wood Design | 02 | Structural Analysis II |
| | Elective | 02 | |
| | | 22 | |
| | X | | |
| 09129310041 | Water Supply and Sewerage | 04 | Hydraulics |
| 09129210041 | Final Proyect of Civil Engineering II | 04 | Final Proyect of Civil Engineering I Earthquake Engineering |
| 09129510031 | Organization and Management of Construction Companies | 03 | Valuation and Appraisal Engineering |
| 09028510031 | Bridges and Artworks | 03 | Reinforced Concrete II, Steel and Wood Design |
| 09003410022 | Ethics and Morals | 02 | 170 Approved Credits |
| 09991210013 | Preprofessional Practices | 01 | 154 Approved Credits and 6 months of preprofessional internships completed |
| | Elective | 05 | |
| | | 22 | |

| | Electives Courses | | |
|---|---|---|---|
| 09061700040 | Strategic Management | 04 | 120 Approved Credits |
| 090942E4040 | Foundations Engineering (*) | 04 | Structural Analysis II |
| 090600E4040 | Software Applied to Civil Engineering | 04 | 170 Approved Credits |
| 090292E2031 | Roads II | 03 | Roads I |
| 091300E2030 | Transportation Engineering (*) | 03 | Pavements |
| 090318E3031 | Normativity | 03 | Budget and Work Schedule |
| 090649E3031 | Construction Productivity | 03 | Budget and Work Schedule |
| 09060300030 | Safety in Civil Engineering Works | 03 | 120 Approved Credits |
| 090692E1020 | Photogrammetry and Aerial Exploration | 02 | Topography |
| 09086300022 | Innovation Management | 02 | Project Formulation and Evaluation |
| 090667E1021 | Leadershio and Oratory | 02 | 100 Approved Credits |
| 091299E1020 | Maintenance and Conservation of Civil Works (*) | 02 | Construction II |
| 091298E1020 | Alternative Construction Materials (*) | 02 | Construction II |
| 099913E1020 | Quechua (*) | 02 | 176 Approved Credits |

(*) Elective courses that are not taught in the 2023-I academic semester.

The modules included in the curriculum belong to three main areas: 21.5 % mathematics and basic sciences, 63.5 % engineering topics and 15 % basic education as of which 210 Peruvian credits are mandatory courses and 12 Peruvian credits are electives.

The students of the study programme get an overview of drawing and graphic design, analytic geometry, topography, accessibility and universal design, analytic geometry as well as Mathematics (calculus, discrete mathematics, linear algebra), intercultural citizenship, philosophy and languages (Spanish and English) in the first two semesters. Over the course of the first six semesters, they take mandatory courses in the different areas of civil engineering, such as hydraulics, structures, transportation, construction and management. Besides the theoretical classes, they also acquire practical competences through projects in various areas and internship. Moreover, in semesters 9 and 10, the students can choose from a wide range of electives covering contents of strategic or innovation management, leadership and oratory, transportation engineering, photogrammetry and aerial exploration and alternative construction materials. The last semester also contains the mandatory pre-professional practice. The students prepare their undergraduate thesis, which is written in the final semester, by drafting a topic and handing in a proposal.

During the audit, the experts learn that there has been a recent update of the Civil Engineering curriculum. For instance, the structure of the modules have initially been less practice-oriented. It is not until semester 4 that subject-related - but purely construction-related - modules are offered (such as Statics, Construction I, Dynamics and Concrete Technology. This area accounts for 13 of a total of 90 credits by the end of the fourth semester. In the fifth semester there are for the first time the modules Roads1 and Ecology and Environmental Impact that are worth 3 credit points. The classical focal points of civil engineering besides the constructive part were weakly developed. For example, the Water/ Environment part (Ecology and Environment, Fluid Mechanics I and II, Hydrology, Sanitary Installation, Hydraulics, Water supply and Sewage) is worth almost 26 credits. The Management part, including the modules General Accounting, Financial Management, Budget and work schedule, cost engineering, organization and Management of construction companies spans over 19 credits.

The programme coordinators explain that these improvements can be traced to results from the different stakeholder surveys as well as from the results of previous accreditation procedures of similar degree programmes. They remark that the course “Pre-professional practices” is a six-month mandatory internship which was before not included in the curriculum. In Peruvian HEIs, the internship was used to be outside of the curriculum and only a pre-requisite for other courses and for the graduation. The experts take note that there is an application for the registration of the internship and that after conclusion of the internship, the students present a report.

The students express their satisfaction with the curriculum during the audit. They appreciate, in particular, courses with social relevance and the variety of electives choices. They confirm that they have been informed about the changes in the curriculum.

Moreover, the experts discuss with the programme coordinators and teachers about some contents that are, in their opinion, underrepresented in the curriculum. They ask where fundamentals of vibration theory are covered in the curriculum, because they are important in order to study the impact of earthquakes on buildings. From the programme coordinators, they learn that aspects of vibration theory are taught by a specialist in seismography. However, theoretical contents of Dynamic II as well as related experiments in the labs for example, single- and multiple-mass oscillator with and without damping , conservation of angular momentum (Spinning Wheel on Spinning Chair) and/or unilaterally sus-pended rotating wheel. Therefore, the experts recommended to implement a module about vibration theory and multibody dynamics (Dynamics II).

Additionally, the experts note that programming languages are only treated marginally in the degree programme under review. An introduction to the programming languages Python or C++ is recommended, as these tools are nowadays an essential and absolutely necessary basis for engineering calculations.

The industry representatives share this opinion and confirm that these skills are a lot sought after in the labour market. Therefore, the experts recommend to include a module on computer languages into the curriculum (FORTRAN, Python, C++, etc.).

Furthermore, the experts ask to what extent aspects of Finite Element Methods (fundamentals of calculation for structural analysis) are taught. From the students, they learn that this subject block is not covered by any of the modules of the degree programme. Moreover, they do not use any calculation software. Since commercial programmes such as Abaqus, Nastran or Ansys are essential tools for structural calculations, the experts recommend including their fundamentals of the linear finite element method (FEM) in the curriculum.

Another issue that was not clear to the experts was why the compulsory subject Physics II focuses on electric and magnetic fields, as these topics are rather marginal for a civil engineer. It is recommended to reduce this content in favour of dynamics or programming languages.

In addition, the expert group notices some points related to the study plan: since not only automotive individual mobility is essential for a modern transport infrastructure, the experts recommend to change the content of the modules of the cluster “transport” into the

cluster “mobility” (public transportation, sustainable mobility). Moreover, they recommend to rename the blue cluster “hydraulics” into “water management” in the study plan of the programme, because sustainability aspects and urban planning should also be included in the curriculum in this field. Furthermore, with reference to the points just mentioned, it seems reasonable to the experts to reorganize the structure of the study plan clustering in order to make it clearer.

Finally, the peers discuss with USMP the ways in which the students can improve their English proficiency. They learn that in the Bachelor’s degree programme under review English literature is used occasionally as can be seen from the literature suggested for the individual modules in the module descriptions. Students have the possibility to join the English study club, which is offered by the Language Centre. Students are also obliged to complete “English I and II” courses in order to graduate from their studies. The peers appreciate these efforts. However, the industry representatives also underline that the English skills of the students who absolve internships in their companies or of the graduates who are employed in these could still be improved. The students themselves confirm this impression and wish for a more targeted training. Therefore, the peers recommend to strengthen the English speaking skills of the students., e.g. by practicing speaking English in designated courses and also in usual lecture classes.

*Periodic Review of the Curriculum*

According to the self-assessment report provided by USMP, the curriculum of the programme under review is revised and updated every three years or when appropriate depending on the scientific or technological advances in the area in accordance with Article 7 of the Regulations for Revision and Modification of the curriculum.

For the revision and modification of the curriculum under review, the dean or director of the academic unit forms a commission. This commission is consists of the programme director, the heads of academic departments, one teacher for each of the curricular areas (general, basic, specialized, etc.), the director of research, a representative of the programme, a last year student, a graduate, a representative of the main organizations representing the professional practice of the study programme and a representative of the External Advisor Committee of the academic programme or unit. If the dean deems it convenient for the purposes of the commission, he or she may appoint additional members of the commission.

In addition, the civil engineering degree programme has implemented a continuous improvement system. For instance, a review of the programme results is carried out every

year by the programme accreditation committee, which is formed by the programme director and the teachers of the final project. In this procedure, they collect and analyse information on student achievement and graduate profile. They submit the proposal for evaluation to the programme's constituents commission.

*International mobility*

The self-Assessment report as well as the discussions make it very clear that international recognition is one of USMP's primary goals for the next years. The experts point out that international mobility, with regard to lecturers as well as students, is a key factor in these efforts.

The experts learn that the university already provides various mobility opportunities for students. These include semesters abroad, short programmes, internships, and international conferences. To foster these, there are cooperation agreements with a lot of partner institutions worldwide, with a certain focus on Latin America, but also including some institutions in Europe and North America. Specifically, for Civil Engineering, agreements for student mobility with the Andres Bello University in Chile and CAPECO, the Iberoamerican University of the Dominican Republic have been initiated. There are incoming students from University-Bucaramanga in Colombia. The programme has also student exchange with Colombian universities and received students from different Mexican universities.

Partly due to the COVID-19 pandemic, the number of students participating in mobility programmes in 2020 - 2022 was relatively low, but is expected to markedly increase again after the pandemic. Moreover, the university provides scholarships for international mobility pro-grammes and manages various external scholarships sponsored by the government. Qualifications obtained at other universities in Peru or abroad are recognized in line with the courses at USMP. Before a stay abroad, the university concludes a learning agreement with the respective student to ensure that the courses taken are relevant to the study programme and can thus be recognized.

During the audit, students report that they access information about exchange opportunities primarily through the university's website. The faculty itself does not provide a direct point of contact to support the students in the planning and administration of international mobility. In addition, they explain that the number of cooperation agreements is still quite low, which is why a large proportion of those interested complete an exchange semester in Spain. The representatives from the rectorate and the programme under review emphasize that they are working currently to increase the number of international agreements and to promote mobility among students. The experts appreciate the efforts undertaken by the university to foster student mobility, but as international mobility is one of USMP's

primary goals for the future, they recommend to increase the efforts to further internationalise USMP by establishing more international cooperations and exchange programmes, by offering more and better-endowed scholarships and by better communicating the existing offers to the students.

**Criterion 1.4 Admission requirements**

**Evidence:**

- Self-Assessment Report
- Admission Regulations
- Study plan of the degree programme
- Webpage USMP
- Webpage Faculty of Engineering and Architecture
- Discussions during the audit

**Preliminary assessment and analysis of the experts:**
Admission of new students to programmes offered by USMP is carried out according to the University Law N° 30220 and the University Admission Regulations. The admission process is managed by the Admission Office, which is responsible for planning, organizing, implementing, controlling and evaluating the procedure. According to the admission regulations, every person who has finished school education (secondary level) is allowed to apply for a university place. There are different modalities for the admission to a USMP study programme that are described in following table:

| TYPE OF ADMISSION | SELECTION TEST |
|---|---|
| **A) REGULAR ADMISSION EXAM** | Admission Exam |
| **B) STUDENTS EXEMPTED FROM THE REGULAR ADMISSION EXAM**<br>b.1 First Choice<br>b.2 Excellence Agreement<br>b.3 Academic Excellence School (CEA)<br>b.4 First or Second Place in High School<br>b.5 Top Third of the Class<br>b.6 Academic Complementation<br>b.7 Applicant with a Degree from the University System<br>b.8 National External Transfer<br>b.9 International External Transfer<br>b.10 Internal Transfer<br>b.11 National or International Agreement<br>b.12 National and International Athlete<br>b.13 Skill and Experience-based Education (ECEL) | Special Exam |
| b.14 Schools affiliated to International Baccalaureates | Personal Interview |
| b.15 Internal Transfer between Campuses (TIES) | (*) |
| **C) PRE-UNIVERSITY CENTER** | Permanent Evaluation |

(*) **The general weighted average of the student substitutes the Selection Test.**

The regular admission exam contains questions to general knowledge and culture as well as to specific skills according to the official contents of the high school curriculum. Applicants with a disability will be evaluated according to their limitations. In the types of admission of Academic Excellence Schools and Excellence Agreement, the applicants may be also evaluated at the facilities of their schools, at the request of the Principal's Office. The interview is personal and assesses the applicant's proficiency and their knowledge of the professional programme they wish to apply for. The Admission Office is allowed to establish a minimum entrance score and determine the type of evaluation. According to the places offered, the vacancies will be filled strictly by ranking. The results of the selection are published on the university's website or other places that the Admission Office may deem advisable.

Generally, the number of applications in the Bachelor's degree programmes is higher than the number of admitted students. In 2020, while 136 prospective students applied for the

Civil Engineering degree programme, only 103 enrolled in the programme. In 2021 and 2022, the ratio of the number of applicants and the number of enrolled students was 84 to 81 and 78 to 70. There are various options for scholarships offered that cover the tuition fees.

The admission requirements are published on the university's website and inform potential students in detail about the requirements and the necessary steps to apply for admission into the programme. Since the rules are based on official regulations, the experts deem them binding and transparent. They confirm that the admission requirements support the students in achieving the intended learning outcomes.

**Criterion 1.5 Workload and Credits**

**Evidence:**

- Self-Assessment Report
- Study plans of the degree programme
- Module descriptions
- Academic Guidelines
- Discussions during the audit

**Preliminary assessment and analysis of the experts:**
As explained in the self-assessment report submitted by the university, the Credit Points (CP) system in Peru only takes into account the hours spent by students in classroom and laboratory (or workshop) training. One credit represents one hour of theory (45 minutes) or two hours of practical or laboratory training (90 minutes). The academic year is divided into two academic semesters of 17 weeks each, and students can take up to 22 credits per semester, unless authorised by the admissions officer, in which case the student can take a maximum of 26 credits. It means 44 hours per week of study and students on average have a workload of 25.5 hours per credit.

USMP emphasizes that, in line with the accreditation process, they aligned this workload with that of the European Credit Transfer System (ECTS) which considers class hours as well as self-study time. Currently, a calculation based on European references is being used as an undergraduate equivalence, in which each hour of class requires 1.5 hours of individual study. Following conversion formula of credits points (CP) into ECTS used in the Freie Universität Berlin was taken over to calculate the equivalences: ECTS_course = CP_course*

(60*years_of_degree)/total_credits_of_degree). According to the university, based on this calculation, the equivalence between a Peruvian credit with an ECTS credit is 1.35.

The experts learn during the discussion with the programme coordinators that the study programme is usually completed in a maximum of 6 years. Additionally, the experts see that almost all students complete the degree programme as there have only been 20 % of the students of the Bachelor's degree programme Civil Engineering who dropped out of the degree programme in the last 3 years. The data verifies that the degree programme under review can be completed in the expected period.

Furthermore, the experts note that the pre-professional internship is only worth 1 Peruvian credit (1.35 ECTS credits) and discuss this aspect during the on-site visit. According to USMP's academic regulations 1 Peruvian credit equals 25.5 hours of student work. The pre-professional internship is worth 1 Peruvian credit, which corresponds in theory to 25.5 hours of student work. However, the experts learn that the duration of the internship is actually 6 months. The internship is carried out in 5 working days and 30 hours per week. The programme coordinators explain that the internship is evaluated, but not credited. 1 Peruvian credit refers to the internship report. The students note that in the course "Pre-Professional Practice", for which the 6-month practice is a prerequisite, they learn how to write a report and discuss the experiences and results. Although the students expressed their satisfaction with the internship and do not find the relation between workload and credits awarded for the pre-professional internship inconvenient, the experts point out that USMP must ensure that the credits awarded for the internship ("pre-professional practice") correspond with the actual workload of the students.

**Criterion 1.6 Didactic and Teaching Methodology**

**Evidence:**

- Self-Assessment Report
- Study plans of the degree programme
- Module descriptions
- Discussions during the audit

**Preliminary assessment and analysis of the experts:**
As USMP explains in the self-assessment report, various student-centered learning methods are utilized in the degree programme under review. Besides the regular lectures, methods such as group discussions, project- and problem-based learning, simulations etc. are

used. The students confirm that these methods are actually in use and that they are satisfied with the variety of teaching methods, which support them in achieving the learning outcomes.

During the classes, active and interactive teaching methods (e.g. lectures, discussions, reports, presentations, and group work) are applied. USMP wants to encourage the students to gain knowledge from different scientific areas and to introduce them to research activities. Teaching and learning is supported by a broad range of media, both traditional (books, papers) and online (videos, presentations etc.). The university's online learning management system supports teachers and students in communicating and disseminating learning material. In the course of the Covid-19 pandemic, the university has swiftly switched to online learning with videoconferences, recorded videos and other media.

The peers consider the teaching methodology employed in the degree programme to be diverse, interactive and to show a healthy mixture between traditional and modern/alternative methods. They are well adapted to the aims and conditions of the individual courses and suitable to support the students in achieving the intended learning outcomes.

**Final assessment of the experts after the comment of the Higher Education Institution regarding criterion 1:**

[…]

# 2. Exams: System, Concept and Organisation

**Criterion 2 Exams: System, concept and organisation**

**Evidence:**

- Self-Assessment Report
- Module descriptions
- Examination Regulations ("Reglamento de Evaluación del Aprendizaje")

- Samples of exams, project works and theses
- Academic Guidelines

**Preliminary assessment and analysis of the experts:**
Exams in the Bachelor's degree study programme under review follow the examination rules as stated in the examination regulations of USMP. According to these, in the curriculum of the degree programme, the procedures for the assessment of competences are defined. The learning assessment procedures are aimed at determining the level of achievement of the competences defined in the graduate profile. The syllabus of each subject shall include the assessment procedures for the learning outcomes, indicating precisely the type and number of assessments and academic tasks to be carried out by the students. Depending on course frequency and objectives, the types of assessment are: entrance assessment, continuous assessment, partial assessment, final assessment and graduation assessment. According to the module handbook for the Civil Engineering degree programme, the modules include different types of exams such as written and oral exams as well as quizzes, reading controls, laboratory practices, team and project work.

The grading system uses a vigesimal scale from zero (00) to twenty (20) and the minimum passing grade is eleven (11). A half (1/2) point in favour of the student will be taken into account when averaging the final grades. The Academic Coordination Office prepares an examination schedule for some courses and for the final written exam of all courses. For the other courses, called unscheduled evaluation, teachers propose the evaluation schedule. The grades are entered by the teachers in the system "SAP Academic Portal". The Academic Records Office monitors and controls this procedure.

The final grade is the sum of the sub exams. Although this means that the total number of tests taken during a semester is comparatively high, the students do not complain about this workload and instead appreciate that there are several short exams instead of one big exam as this requires them to continuously study during the entire semester and not having to solely work for one final exam at the end of the semester. Moreover, during the audit, the students explain that the exams include the contents that have been taught in class. They emphasize that the teachers give them valuable recommendations during the lessons and, if they have any doubts about the exam preperation, the teachers give them useful advice. They are informed during the first class session about assessment forms and conditions for completing the module.

Every student is required to do a final project in the last year of studies. Prior to the actual research work, the students are required to write a research proposal and present it in a seminar attended by lecturers and other students who form a research group. The research

proposal has to be accepted by the Dean and the supervisor committee who will then appoint the research supervisors. Usually, there are one or two research supervisors for each student. One will act as the principal supervisor and the other act as co-supervisor. In case the student writes her or his final project or thesis in collaboration with the industry, she or he is also assigned a supervisor from the industry. After completing the work on the final project, the student has to present and defend the results in front of teachers and fellow students.

The experts discuss with the programme coordinators, the members of the teaching staff, and the students about the process of finding suitable topic of the final project or thesis. There are two possibilities: either students can propose their own ideas or they can ask their academic advisor or other teachers for suggestions.

During the on-site visit, the experts were provided with a selection of exams and final projects to check. They confirm that these represent an adequate level of knowledge as required by the EQF level 6 for the Bachelor's degree programme Civil Engineering. The forms of exams are oriented toward the envisaged learning outcomes of the respective courses, and the workload is distributed in an acceptable way.

The experts conclude that the criteria regarding the examinations system, concept, and organization are fulfilled and that the examinations are suitable to verify whether the intended learning outcomes are achieved or not.

**Final assessment of the experts after the comment of the Higher Education Institution regarding criterion 2:**

[…]

# 3. Resources

**Criterion 3.1 Staff and Development**

**Evidence:**

- Self-Assessment Report
- Staff Handbook
- Study plan of the degree programme
- Module descriptions
- Discussions during the audit

**Preliminary assessment and analysis of the experts:**
The academic position of each staff member is based on research activities, publications, academic education, supervision of students, and other supporting activities. For example, there are lecturers who hold a Master's degree and lecturers who hold a PhD degree. A full professor needs to hold a PhD degree. The main difference of tasks and responsibilities based on academic staff position lies on the proportion of teaching and research activities. The higher the academic staff position is, the greater is the proportion of research activities, but the lower is the proportion of teaching activities. The latter may become professors once they have earned a certain amount of credits with regard to their academic work.

There are 34 teaching staff for the Bachelor's degree programme Civil Engineering (ten doctors, seventeen professors with a Master's degree and seven professors in the process of obtaining their master's degree). The university encourages the teaching staff with a Master's degree to pursue further qualification. These numbers mean that the ratio between academic staff and students is 1:12 in the degree programme under review. In addition, the faculty regularly invites visiting lecturers from Peru and abroad to facilitate academic exchange. The academic staff is supported by a considerable number of administrative and technical employees at department, faculty, and university level.

Recruiting new teaching staff follows a defined procedure starting with a needs analysis of the degree programme, the proposal for new positions to the university, a public announcement and finally the recruitment based on the results of a basic competence test, a field competence test and an interview.

The academic staff is actively involved in research projects funded by grants from the Peruvian government, the university itself or other research funds, which results in a reasonable number of publications per year. USMP positions itself as a university with a research focus, which the peers appreciate. They also learn that students can be involved in research projects, for instance through their theses.

With regard to the staff development, workshops are held to refresh and to deepen various didactic competences in each semester. The lecturers can also regularly participate in external didactical trainings offered and funded by the government. Moreover, the teaching staff is encouraged to study abroad or to participate in international research projects and conferences in order to enhance their knowledge, increase their English proficiency and to build international networks. For this purpose, the university informs about possible scholarships to support academic mobility. Particularly for junior lecturers with a master's degree, USMP offers training to prepare them for acquiring a PhD abroad, for instance through English courses, information on foreign education systems, administrative sup-

port, and supporting (international) research collaborations. According to a statistical overview provided by USMP, in the last five years, lecturers of the study programme under review have been involved in international activities in order to conduct doctoral programmes and research collaboration.

Moreover, the experts learn from the teaching staff that there are many different options to apply for funding for research projects, not only from USMP but also from the government and big companies the university collaborates with.

In summary, the experts highlight the engaged staff members and confirm that the composition and scientific orientation of the teaching staff are suitable for successfully implementing and sustaining the degree programme. Both students and staff members confirm that in case of questions or problems, there is always an academic advisor available to solve the issues together with the student. The experts also appreciate the university's efforts in the further development of USMP employees and consider the support mechanisms for the continuing professional development of the teaching staff adequate and sufficient.

**Criterion 3.2 Funds and equipment**

**Evidence:**

- Self-Assessment Reports
- On-site visit of the facilities
- Discussions during the audit

**Preliminary assessment and analysis of the experts:**
Financial resources are derived principally from the study fees with additional income from associated companies. Income is collected in the central budget which is distributed to the department budget and in turn spent, according to a mid- and long-term investment plan on improving the study conditions and equipment, staff salaries and new student loans. The panel considered the financial strategy and the resources available for the programme under review to be solid.

During the on-site visit, the peers took a look at some central facilities, relevant research and teaching facilities and, in particular, all the different laboratories available for the study programme. They considered the university's facilities and available equipment in the labs to be of appropriate standards. The facilities offer sufficient opportunities for the professional and individual development of students and teachers. The technical staff in the labs demonstrated a high degree of expertise and responsibility. Students confirmed that access to the necessary software resources is possible also from their private computers and from

home. However, since students must complete several software-related courses, industry representatives suggest awarding appropriate certificates as soon as students pass these courses, as this is relevant to working in industry and is a unique selling point. The peers agree and recommend this accordingly.

In terms of external collaboration, the panel noted that USMP has very close links to Peruvian companies. These are utilized in a three-fold way: firstly, industry representatives participate in the quality assurance and further development of the degree programme (see also criterion 5), secondly, for recruiting (part-time) teaching staff, and thirdly for offering internships and job opportunities to the students. All these activities aim at ensuring that the competence profile of graduates and the curriculum meet the relevant requirements of the labour market in the country.

In summary, the peer group judges the available funds, the technical equipment, and the infrastructure (laboratories, studios, library, seminar rooms etc.) – besides the mentioned small restriction - to comply with the requirements for adequately sustaining the degree programme.

**Final assessment of the experts after the comment of the Higher Education Institution regarding criterion 3:**

[…]

# 4. Transparency and documentation

**Criterion 4.1 Module descriptions**

**Evidence:**

- Self-Assessment Report
- Module descriptions
- Webpage USMP
- Webpage Faculty of Engineering and Architecture

**Preliminary assessment and analysis of the experts:**
The module handbook for the Civil Engineering degree programme is published on the university's website and is thus accessible to the students as well as to all stakeholders.

The experts observe that they contain the necessary information about the persons responsible for each module, the teaching methods, the credit points awarded, the intended learning outcomes, the applicability, the forms of assessment, the admission and examination requirements, the workload (incl. contact hours and self-study time) as well as the details explaining how the final grade is calculated.

Moreover, the experts note that the majority of the literature references in the study programme under review are in Peruvian. The experts learn from the programme coordinators that the teaching staff of the study programme continuously encourage their students to also study independently by looking for current international literature in the library or the internet. Moreover, they explain that the teaching staff regularly shares English literature references with their students. The experts understand that the literature actually used in the study programme goes beyond the literature listed in the module descriptions. Furthermore, they also learn that contents such as BIM are also covered by several modules in the curriculum. However, this is not reflected in the module descriptions. Consequently, the experts recommend to update the module descriptions in terms of content (for instance BIM, sustainability) and literature references. Moreover, they believe that it could be useful to describe the modules also in terms of "knowledge" and "skills/abilities".

**Criterion 4.2 Diploma and Diploma Supplement**

**Evidence:**

- Self-Assessment Report
- Sample Diploma for the degree programme
- Sample Diploma Supplement for the degree programme
- Sample Transcript of Records for the degree programme

**Preliminary assessment and analysis of the experts:**
The experts confirm that the students of the Civil Engineering degree programme are awarded a Diploma and a Diploma Supplement after graduation. The Diploma consists of a Diploma Certificate and a Transcript of Records. The Transcript of Records lists all courses that the graduate has completed, the achieved credit points, grades, and cumulative GPA. The Diploma Supplements contain all necessary information about the degree programme.

**Criterion 4.3 Relevant rules**

**Evidence:**

- Self-Assessment Report
- Academic Guidelines
- Webpage USMP
- Webpage Faculty of Engineering and Architecture

**Preliminary assessment and analysis of the experts:**
The experts confirm that the rights and duties of both USMP and the students are clearly defined and binding. All rules and regulations are published on the university's website in Peruvian as well as in English and hence available to all stakeholders. In addition, the students receive all relevant course material in the language of the degree programme at the beginning of each semester.

**Final assessment of the experts after the comment of the Higher Education Institution regarding criterion 4:**

[…]

# 5. Quality management: quality assessment and development

**Criterion 5 Quality management: quality assessment and development**

**Evidence:**

- Self-Assessment Report
- Academic Guidelines
- Discussions during the audit

**Preliminary assessment and analysis of the experts:**
Every programme at the Faculty of Engineering and Architecture of the San Martin de Porres University has an Academic Committee responsible for the quality assurance. The evaluation is carried out by the Academic Committee of the Faculty. For the evaluation process, USMP has defined the following stages:

Modules are assessed by students', faculty's, graduates' and employers' surveys as well as by the assessment of course files (i.e. samples of tests, exams or students' work) and project course works. The results from these surveys are classified according to their importance, all targeted at verifying whether the programme educational objectives, intended learning outcomes and course objectives have been achieved. In addition, the courses that are to be evaluated are chosen by the faculty. For these courses, students' work samples, exams, reports and presentations are assessed. This evidence is evaluated by the Accreditation Committee according to a set scheme of criteria and weighed according to the module assessment by the students. A final report that includes recommendations is sent to the department chair. The experts also noted the clear orientation towards programme objectives and learning outcomes in the surveys.

The results of the course evaluations are provided to the individual lecturers who confirm that they find them helpful in order to improve their teaching material, content and methods. The representatives of USMP relate that dismissals can also be a consequence of continuous negative evaluations. Additionally, annual meetings with all teachers take place where teaching tools, book use etc. are discussed and suggestions are made to the directors of the schools. The panel found that the responsible committees as well as the teaching staff members themselves aim to clearly link their teaching activities, based on the results of surveys and performance criteria, on the achievement of the intended graduates' competences.

Several surveys were carried out among students to encompass certain aspects of teaching and learning. In the audit, the experts inquire whether the results of the surveys are also shared and discussed with the students. The students explain that they only partly receive the survey results. However, students report that although their feedback is not officially discussed, they generally feel that their criticism is noticed as they have witnessed changes in the curriculum. Some students, for example, who had suggested changes to some modules, were able to see how those changes were implemented subsequently. Generally students indicate to be satisfied with the programme to be accredited and confirm that the programme is very demanding but feasible. The experts are glad to hear that students are generally satisfied with the programme and that their feedback seems to be recognized. However, to create a closed feedback loop, the experts urge USMP to organise the teaching evaluation in such a way that a feedback of the results to the students is ensured.

Moreover, during the discussion with the students, the experts learn that before the COVID19-pandemic, students could contact student representatives in case of problems or needed assistance. According to the students, neither students nor graduates are repre-

sented in the Accreditation Committee to actively participate in the quality assurance process through meetings or focus groups where they can make their recommendations for the programme improvement and receive information on the evaluation process developed by the Accreditation Committee. Therefore, the experts recommend that students elected by the students take part in decision-making processes and be represented in the academic boards of the university.

In conclusion, the experts agree that USMP's quality management ensures a continuous assessment and improvement of the Civil Engineering programme. However, the experts identify a few deficits. Thus, a closed feedback loop must be implemented and formalized and the students should be involved in the academic boards of the university.

**Final assessment of the experts after the comment of the Higher Education Institution regarding criterion 5:**

[…]

# D Additional Documents

No additional documents needed.

# E Comment of the Higher Education Institution

The institution did not provide any statement.

# F Summary: Peer recommendations (18.08.2023)

Taking into account the additional information and the comments given by USMP the peers summarize their analysis and final assessment for the award of the seals as follows:

| Degree Programme | ASIIN Seal | Maximum duration of accreditation | Subject-specific label | Maximum duration of accreditation |
|---|---|---|---|---|
| Ba Civil Engineering | With requirements for one year | 30.09.2029 | EUR-ACE® | Subject to the approval of the ENAEE Administrative Council |

**Requirements**

A 1. (ASIIN 1.5) Ensure that the credits awarded for the internship ("pre-professional practice") correspond with the actual workload of the students.

A 2. (ASIIN 5) The teaching evaluation is to be organised in such a way that a feedback of the results to the students is ensured.

**Recommendations**

E 1. (ASIIN 1.3) It is recommended to strengthen the English speaking skills of the students., e.g. by practicing speaking English in designated courses and also in usual lecture classes.

E 2. (ASIIN 1.3) It is recommended to implement a module about vibration theory and multibody dynamics (Dynamics II).

E 3. (ASIIN 1.3) It is recommended to include a module on computer languages into the curriculum (FORTRAN, Python, C++, etc.).

E 4. (ASIIN 1.3) It is recommended to include fundamentals in linear Finite Element Method (FEM) in the curriculum.

E 5. (ASIIN 1.3) It is recommended to change the content of the modules of the cluster “transport” into the cluster “mobility” (public transportation, sustainable mobility).

E 6. (ASIIN 1.3) It is recommended to reduce the content of the module Physics II in favour of dynamics or programming languages.

E 7. (ASIIN 1.3) It is recommended to rename the blue cluster “hydraulics” into “water management” in the study plan of the programme.

E 8. (ASIIN 1.3) It is recommended to reorganize the structure of the study plan clustering in order to make it clearer.

E 9. (ASIIN 1.3) It is recommended to increase the efforts to further internationalise USMP by establishing more international cooperations and exchange programmes, by offering more and better-endowed scholarships and by better communicating the existing offers to the students.

E 10. (ASIIN 3.2) It is recommended to award students with certificates as soon as they pass software related courses.

E 11. (ASIIN 4.1) It is recommended to update the module descriptions in terms of content (for instance BIM, sustainability) and literature references.

E 12. (ASIIN 5) It is recommended that students elected by the students take part in decision-making processes and be represented in the academic boards of the university.

# G Comment of the Technical Committee 03 – Civil Engineering, Geodesy and Architecture (04.09.2023)

*Assessment and analysis for the award of the ASIIN seal:*

The Technical Committee discusses the accrediting procedure and follows the assessment of the peers without any changes.

*Assessment and analysis for the award of the EUR-ACE® Label:*

The Technical Committee deems that the intended learning outcomes of the Civil Engineering degree programme comply with the engineering specific parts of Subject-Specific Criteria of the Technical Committee 03 – Civil Engineering, Geodesy and Architecture.

The Technical Committee 03 – Civil Engineering, Geodesy and Architecture recommends the award of the seals as follows:

| Degree Programme | ASIIN Seal | Maximum duration of accreditation | Subject-specific label | Maximum duration of accreditation |
|---|---|---|---|---|
| Ba Civil Engineering | With requirements for one year | 30.09.2029 | EUR-ACE® | Subject to the approval of the ENAEE Administrative Council |

**Requirements**

A 1. (ASIIN 1.5) Ensure that the credits awarded for the internship (“pre-professional practice”) correspond with the actual workload of the students.

A 2. (ASIIN 5) The teaching evaluation is to be organised in such a way that a feedback of the results to the students is ensured.

**Recommendations**

E 1. (ASIIN 1.3) It is recommended to strengthen the English speaking skills of the students., e.g. by practicing speaking English in designated courses and also in usual lecture classes.

E 2. (ASIIN 1.3) It is recommended to implement a module about vibration theory and multibody dynamics (Dynamics II).

E 3. (ASIIN 1.3) It is recommended to include a module on computer languages into the curriculum (FORTRAN, Python, C++, etc.).

E 4. (ASIIN 1.3) It is recommended to include fundamentals in linear Finite Element Method (FEM) in the curriculum.

E 5. (ASIIN 1.3) It is recommended to change the content of the modules of the cluster “transport” into the cluster “mobility” (public transportation, sustainable mobility).

E 6. (ASIIN 1.3) It is recommended to reduce the content of the module Physics II in favour of dynamics or programming languages.

E 7. (ASIIN 1.3) It is recommended to rename the blue cluster “hydraulics” into “water management” in the study plan of the programme.

E 8. (ASIIN 1.3) It is recommended to reorganize the structure of the study plan clustering in order to make it clearer.

E 9. (ASIIN 1.3) It is recommended to increase the efforts to further internationalise USMP by establishing more international cooperations and exchange programmes, by offering more and better-endowed scholarships and by better communicating the existing offers to the students.

E 10. (ASIIN 3.2) It is recommended to award students with certificates as soon as they pass software related courses.

E 11. (ASIIN 4.1) It is recommended to update the module descriptions in terms of content (for instance BIM, sustainability) and literature references.

E 12. (ASIIN 5) It is recommended that students elected by the students take part in decision-making processes and be represented in the academic boards of the university.

# H Decision of the Accreditation Commission (22.09.2023)

*Assessment and analysis for the award of the subject-specific ASIIN seal:*

The Accreditation Commission discusses the accreditation procedure and make editorial changes to the recommendations E 3 and E 5. As for the recommendation E 3, these editorial changes are supposed to broaden the scope of the topic concerned. Besides that, the AC follows the assessment of the peers and the TC without any changes.

*Assessment and analysis for the award of the EUR-ACE® Label:*

The Technical Committee deems that the intended learning outcomes of the Civil Engineering degree programme comply with the engineering specific parts of Subject-Specific Criteria of the Technical Committee 03 – Civil Engineering, Geodesy and Architecture.

The Accreditation Commission decides to award the following seals:

| Degree Programme | ASIIN Seal | Maximum duration of accreditation | Subject-specific label | Maximum duration of accreditation |
|---|---|---|---|---|
| Ba Civil Engineering | With requirements for one year | 30.09.2029 | EUR-ACE® | Subject to the approval of the ENAEE Administrative Council |

**Requirements**

A 1. (ASIIN 1.5) Ensure that the credits awarded for the internship ("pre-professional practice") correspond with the actual workload of the students.

A 2. (ASIIN 5) The teaching evaluation is to be organised in such a way that a feedback of the results to the students is ensured.

**Recommendations**

E 1. (ASIIN 1.3) It is recommended to strengthen the English speaking skills of the students., e.g. by practicing speaking English in designated courses and also in usual lecture classes.

E 2. (ASIIN 1.3) It is recommended to implement a module about vibration theory and multibody dynamics (Dynamics II).

E 3. (ASIIN 1.3) It is recommended to include a module on basic programming/coding skills in the curriculum.

E 4. (ASIIN 1.3) It is recommended to include fundamentals in linear Finite Element Method (FEM) in the curriculum.

E 5. (ASIIN 1.3) It is recommended to transfer the contents of the modules of the cluster “transport” into the cluster “mobility” (public transportation, sustainable mobility).

E 6. (ASIIN 1.3) It is recommended to reduce the content of the module Physics II in favour of dynamics or programming languages.

E 7. (ASIIN 1.3) It is recommended to rename the blue cluster “hydraulics” into “water management” in the study plan of the programme.

E 8. (ASIIN 1.3) It is recommended to reorganize the structure of the study plan clustering in order to make it clearer.

E 9. (ASIIN 1.3) It is recommended to increase the efforts to further internationalise USMP by establishing more international cooperations and exchange programmes, by offering more and better-endowed scholarships and by better communicating the existing offers to the students.

E 10. (ASIIN 3.2) It is recommended to award students with certificates as soon as they pass software related courses.

E 11. (ASIIN 4.1) It is recommended to update the module descriptions in terms of content (for instance BIM, sustainability) and literature references.

E 12. (ASIIN 5) It is recommended that students elected by the students take part in decision-making processes and be represented in the academic boards of the university.

# I Fulfilment of Requirements (24.09.2024)

## Analysis of the experts and the Technical Committee (09.09.2024)

### Requirements

A 1. (ASIIN 1.5) Ensure that the credits awarded for the internship ("pre-professional practice") correspond with the actual workload of the students.

| **Initial Treatment** | |
|---|---|
| Experts | Fulfilled.<br>Justification: Pre-professional internships will no longer continue to be considered as a subject within the curriculum. On February 20, 2024, through Rectoral Resolution No. 054-2024-CD-P_USMP, the University of San Martín de Porres modified the General Regulations of Degrees and Titles. In accordance with this new regulation, the curriculum of the Bachelor's degree Civil Engineering got updated by choosing that pre-professional practices are no longer included as a subject within the curriculum and become a direct requirement for obtaining the academic Bachelor's degree. This has been equally considered in the past and allowed two other FIA -USMP programs to be evaluated by ASIIN, for accreditation purposes, on two occasions (2009 and 2016) and approved without having observations in this regard. |
| TC 03 | Fulfilled.<br>Vote: unanimous<br>Justification: The TC follows the assessment of the experts without any changes. |
| AC | Fulfilled.<br>Vote: unanimous<br>Justification: The AC follows the assessment of the experts and the TC without any changes. |

A 2. (ASIIN 5) The teaching evaluation is to be organised in such a way that a feedback of the results to the students is ensured.

| **Initial Treatment** | |
|---|---|
| Experts | Fulfilled. |

| | |
|---|---|
| | Justification: In accordance with the continuous improvement plan, USMP has proceeded to create a page on the university website, associated with the Teams format, in which the learning results (outcomes), surveys applied to students, programme accreditations, and student consultations are found. There are also academic notices about 2024-II and others. In this application, students can interact through the different folders and communicate with the director and teachers of the program, receiving or providing the necessary feedback on topics of interest to them. For better guidance, the quick guide called "Quick guide to enter the microsoft teams communication platform for Civil Engineering USMP- FIA Students" has been provided by the university. |
| TC 03 | Fulfilled.<br>Vote: unanimous<br>Justification: The TC follows the assessment of the experts without any changes. |
| AC | Fulfilled.<br>Vote: unanimous<br>Justification: The AC follows the assessment of the experts and the TC without any changes. |

# Decision of the Accreditation Commission (24.09.2024)

| Degree programme | ASIIN-label | Subject-specific label | Accreditation until max. |
|---|---|---|---|
| Ba Civil Engineering | All requirements fulfilled | EUR-ACE | 30.09.2029 |

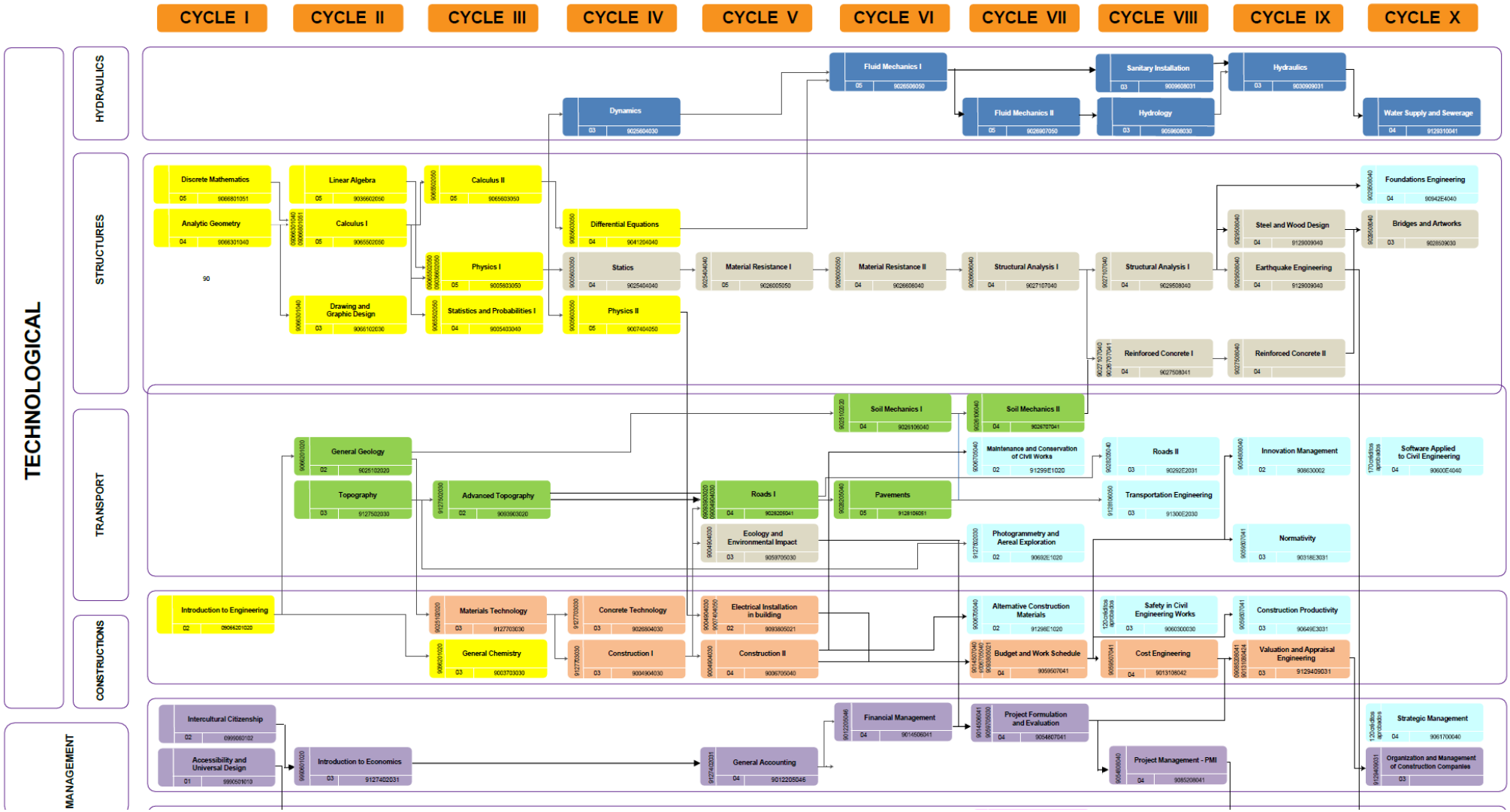
# Appendix: Programme Learning Outcomes and Curricula

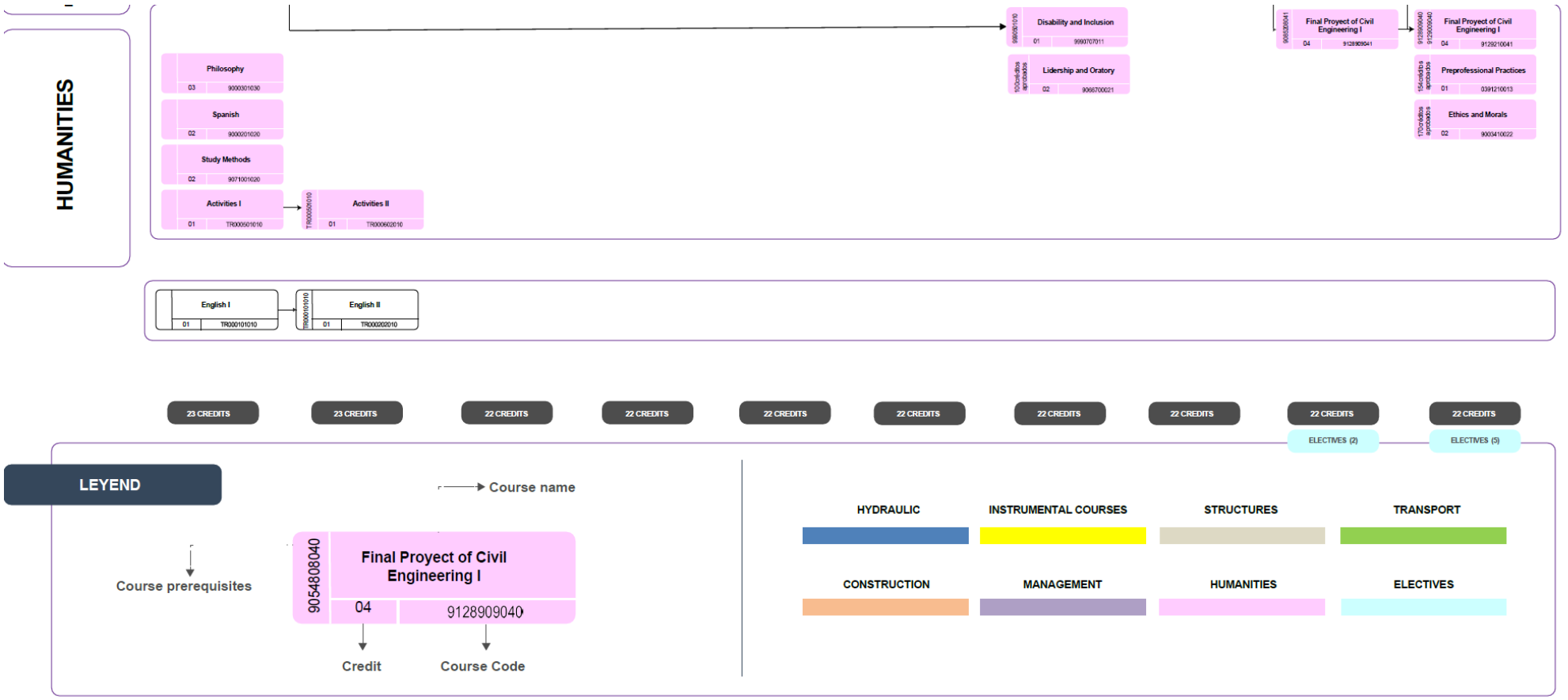
According to the programme's website the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor's degree programme Civil Engineering:

Learning Outcomes are:

RE1: An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
RE2: An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
RE3: An ability to communicate effectively with a range of audiences.
RE4: An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
RE5: An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
RE6: An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
RE7: An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

The following **curriculum** is presented:




HUMANITIES
Philosophy
03
9000301030
Spanish
02
9000201020
Study Methods
02
9071001020
Activities I
01
TR000501010
Activities II
01
TR000602010
Disability and Inclusion
01
9990707011
Lidership and Oratory
02
9066700021
Final Proyect of Civil Engineering I
04
9128909041
Final Proyect of Civil Engineering I
04
9129210041
Preprofessional Practices
01
0391210013
Ethics and Morals
02
9003410022
English I
01
TR000101010
English II
01
TR000202010
23 CREDITS
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ELECTIVES (2)
22 CREDITS
ELECTIVES (5)
LEYEND
Course name
Course prerequisites
9054808040
Final Proyect of Civil Engineering I
04
9128909040
Credit
Course Code
HYDRAULIC
INSTRUMENTAL COURSES
STRUCTURES
TRANSPORT
CONSTRUCTION
MANAGEMENT
HUMANITIES
ELECTIVES