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FINAL REPORT

UNIVERSIDAD SAN SEBASTIAN

CLUSTER ENGINEERING

CIVIL ENGINEERING (BACHELOR IN ENGINEERING SCIENCES)

CIVIL ENGINEERING IN MINING (BACHELOR IN ENGINEERING SCIENCES)

INDUSTRIAL CIVIL ENGINEERING (BACHELOR IN ENGINEERING SCIENCES)

INFORMATICS CIVIL ENGINEERING" (BACHELOR IN ENGINEERING SCIENCES)

JANUARY 2024



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DECISION OF THE AQAS STANDING COMMISSION ON THE STUDY PROGRAMMES

- “CIVIL ENGINEERING” (BACHELOR IN ENGINEERING SCIENCES)
 - “CIVIL ENGINEERING IN MINING” (BACHELOR IN ENGINEERING SCIENCES)
 - “INDUSTRIAL CIVIL ENGINEERING” (BACHELOR IN ENGINEERING SCIENCES)
 - “INFORMATICS CIVIL ENGINEERING” (BACHELOR IN ENGINEERING SCIENCES)
- OFFERED BY UNIVERSIDAD SAN SEBASTIÁN (CHILE)

Based on the report of the expert panel, the discussions of the AQAS Standing Commission in its 19th meeting on 4 December 2023, and the circulation procedure of 15 January 2024 the AQAS Standing Commission decides:

1. The study programmes “Civil Engineering”, “Civil Engineering in Mining”, “Industrial Civil Engineering”, and “Informatics Civil Engineering”, all leading to the degree of “Bachelor in Engineering Sciences” offered by Universidad San Sebastian, Chile are accredited according to the AQAS Criteria for Programme Accreditation (Bachelor/Master).

The accreditations are conditional.

The study programme essentially comply with the requirements defined by the criteria and thus the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG) and the European Qualifications Framework (EQF) in their current version. The required adjustments can be implemented within a time period of twelve months.

2. The conditions have to be fulfilled. The fulfilment of the conditions has to be documented and reported to AQAS no later than **31 January 2027**.
3. The accreditation is given for the period of **six years** and is valid until **31 January 2030**.

Conditions:

For all programmes:

1. To increase transparency on the character of the programmes and the acquired competencies basic course descriptions including Learning outcomes, extent, assessment form and basic content information have to be publicly available.

For the Civil Engineering in Mining programme

2. The programme has to assure that the yet not fully integrated mining standards are covered by its curriculum.
3. The programme has to assure graduates also possess mining specific synthesis skills, e.g. by introducing final projects.

The following **recommendations** are given for further improvement of the programmes:

For all programmes:

1. In the future development of the programmes the relevance of English should be adequately reflected as it is a key competency of graduates and a skill they require.
2. The faculty should develop the ratio of part time teachers vs. full time positions towards a stronger role for full timers.
3. The faculty should integrate courses specific to the respective programmes already in the first four semesters.
4. Initiatives to actively link students to the labour market should be extended and intensified, e.g. by initiating employment fairs.
5. For all programmes but the civil engineering programme the faculty should consider adjusting the names of the degrees towards titles that increase transparency for an international audience.
6. Results of evaluations and implemented adjustments should also be shared with students.
7. The programmes should further develop their approach to quality assurance and include students as partners in the process beyond benefiting from their input only but involve them in the process of development.
8. USS should carefully analyse the ratio of part time teaching staff for its future strategic development.

For the Civil Engineering programme:

9. Topics and qualifications connected to water should be stronger represented in the curriculum.
10. The number of elective courses genuine to civil engineering should be increased.

With regard to the reasons for this decision the Standing Commission refers to the attached experts' report.

EXPERTS' REPORT**ON THE STUDY PROGRAMMES**

- **“CIVIL ENGINEERING” (BACHELOR IN ENGINEERING SCIENCES)**
- **“CIVIL ENGINEERING IN MINING” (BACHELOR IN ENGINEERING SCIENCES)**
- **“INDUSTRIAL CIVIL ENGINEERING” (BACHELOR IN ENGINEERING SCIENCES)**
- **“INFORMATICS CIVIL ENGINEERING” (BACHELOR IN ENGINEERING SCIENCES)**

OFFERED BY UNIVERSIDAD SAN SEBASTIÁN (CHILE)

Visit to the university: 27 November – 1 December 2023

Panel of experts:

Prof. em. Dr.-Ing. Wolfgang Bogacki	University of Applied Sciences Koblenz (Germany), Department of Civil Engineering
Prof. Dr. Alonso Pizarro	Diego Portales University (Chile), Department of Civil Engineering
Prof. Dr.-Ing. Helmut Mischo	Technical University Freiberg (Germany), Institute of Mining and Civil Engineering
Prof. Dipl.-Ing. Thomas Mrokon	University of Applied Sciences Mainz (Germany), Institute for Architecture
Pablo Acuña Torres	Project Engineer, CONIC-BF, Santiago de Chile (representative of the labour market)
Helena Lendowski	University of Potsdam (Germany) (student expert)
Coordinator:	
Ronny Heintze / Patrick Heinzer	AQAS, Cologne, Germany

I. Preamble

AQAS – Agency for Quality Assurance through Accreditation of Study Programmes – is an independent non-profit organisation supported by more than 90 universities, universities of applied sciences and academic associations. Since 2002, the agency has been recognised by the German Accreditation Council (GAC). It is, therefore, a notified body for the accreditation of higher education institutions and programmes in Germany.

AQAS is a full member of ENQA and also listed in the European Quality Assurance Register for Higher Education (EQAR) which confirms that our procedures comply with the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG), on which all Bologna countries agreed as a basis for internal and external quality assurance.

AQAS is an institution founded by and working for higher education institutions and academic associations. The agency is devoted to quality assurance and quality development of academic studies and higher education institutions' teaching. In line with AQAS' mission statement, the official bodies in Germany and Europe (GAC and EQAR) approved that the activities of AQAS in accreditation are neither limited to specific academic disciplines or degrees nor a particular type of higher education institution.

II. Accreditation procedure

This report results from the external review of the Bachelor's programmes "Civil Engineering" (Bachelor in Engineering Sciences), "Civil Engineering in Mining" (Bachelor in Engineering Sciences), "Industrial Civil Engineering" (Bachelor in Engineering Sciences), and "Informatics Civil Engineering" (Bachelor in Engineering Sciences) offered by Universidad San Sebastian (Chile).

1. Criteria

Each programme is assessed against a set of criteria for accreditation developed by AQAS: the AQAS Criteria for Programme Accreditation (Bachelor/Master). The criteria are based on the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG) 2015. To facilitate the review each criterion features a set of indicators that can be used to demonstrate the fulfilment of the criteria. However, if single indicators are not fulfilled this does not automatically mean that a criterion is not met. The indicators need to be discussed in the context of each programme since not all indicators necessarily can be applied to every programme.

2. Approach and methodology

Initialisation

The university mandated AQAS to perform the accreditation procedure in March 2023. The university produced a Self-Evaluation Report (SER). In April 2023, the institution handed in a draft of the SER together with the relevant documentation on the programmes and an appendix. The appendix included e.g.:

- an overview over statistical data of the student body (e.g. number of applications, beginners, students, graduates, student dropouts),
- the CVs of the teaching staff/supervisors,
- information on student services,
- core information on the main library,
- as well as academic regulations.

AQAS checked the SER regarding completeness, comprehensibility, and transparency. The accreditation procedure was officially initialised by a decision of the AQAS Standing Commission on June 2023. The final version of the SER was handed in October 2023.

Nomination of the expert panel

The composition of the panel of experts follows the stakeholder principle. Consequently, representatives from the respective disciplines, the labour market, and students are involved. Furthermore, AQAS follows the principles for the selection of experts defined by the European Consortium for Accreditation (ECA). The Standing Commission nominated the aforementioned expert panel in September 2023. AQAS informed the university about the members of the expert panel and the university did not raise any concerns against the composition of the panel.

Preparation of the site visit

Prior to the site visit, the experts reviewed the SER and submitted a short preliminary statement including open questions and potential needs for additional information. AQAS forwarded these preliminary statements to the university and to all panel members in order to increase transparency in the process and the upcoming discussions during the site visit.

Site visit

After a review of the SER, a site visit to the university took place on 27 November – 1 December 2023. On site, the experts interviewed different stakeholders, e.g. the management of the higher education institution, the programme management, teaching and other staff, as well as students and graduates, in separate discussion rounds and consulted additional documentation as well as student work. The visit concluded by the presentation of the preliminary findings of the group of experts to the university's representatives.

One of the professors in the panel who was appointed for this procedure fell ill on short notice, AQAS and the university agreed to nevertheless proceed with the site visit. Consequently, the panel consisted of five members on site, and one panellist participating digitally.

Reporting

After the site visit had taken place, the expert group drafted the following report, assessing the fulfilment of the AQAS Criteria. The report included a recommendation to the AQAS Standing Commission. The report was sent to the university for comments.

Decision

The report, together with the comments of the university, forms the basis for the AQAS Standing Commission to take a decision regarding the accreditation of the programmes. Based on these two documents, the AQAS Standing Commission took its decision on the accreditation on 15 January 2024. AQAS forwarded the decision to the university. The university had the right to appeal against the decision or any of the imposed conditions.

In February 2024, AQAS published the report and the result of the accreditation as well as the names of the panel of experts.

III. General information on the university

Universidad San Sebastián (USS) was founded in 1989 and is a private institution. According to the self-evaluation report (SER) the strategic guidelines of USS emphasize: ensuring comprehensive development of the educational process focused on learning; continued advancement from a mainly teaching organization towards an organization more developed in research; upholding internal quality criteria and consistency with requirements of the external regulatory framework; maintaining the financial and economic sustainability of USS, and consolidating its position within the Chilean higher education.

USS operates with four branches in the cities of Concepción, Santiago (two campuses), Puerto Montt, and Valdivia. It is organized in nine Faculties or Colleges and administrative units to support students and faculty members. The educational offering is stated to currently comprise 57 undergraduate programmes, 35 Master's programmes, eight Doctorates, eleven medical specialties, eight dental specialties, and 64 programmes in continuous education offers (57 of them being called Diploma courses and seven postgraduate courses).

As of 2022, there were 43,630 students enrolled at USS, 5,916 of them being graduate students and 37,714 pursuing an undergraduate degree, as the SER states. As outlined in the SER, the number of postgraduate students has progressively increased since 2016. At the same time there is a teaching staff of 3,876, of whom 70% have at least a Master's degree, according to the SER. The functions of the academic body focus primarily on teaching and substantively on collaborative activities in the community. In addition, regular faculty members are increasingly encouraged to increase their research activities, USS also describes that they have progressed in the area of interaction with society. Since 2016 projects with various sectors of the community increased to over 100 collaborative projects in the sphere of education, production, culture, or services.

The SER states the Faculty of Engineering, Architecture and Design's core mission to train professionals of integrity and excellence in their specialities, to be prepared to take on complex challenges and to lead the transformations in the global society through knowledge, technology, and entrepreneurial spirit.

All four programmes reviewed are taught in Santiago and Concepción, with Industrial/Informatics Civil Engineering also taught in Puerto Montt and Industrial Civil Engineering additionally in Valdivia. According to the SER, all of them have the main goal to support sustainable development in Chile, give priority to water resources, clean energy or 4.0 technology.

IV. Assessment of the study programmes

1. Quality of the curriculum

Bachelor's/Master's degree

The intended learning outcomes of the programme are defined and available in published form. They reflect both academic and labour-market requirements and are up-to-date with relation to the relevant field. The design of the programme supports achievement of the intended learning outcomes.

The academic level of graduates corresponds to the requirements of the appropriate level of the European Qualifications Framework.

The curriculum's design is readily available and transparently formulated.

[ESG 1.2]

1.1 General information on the curricula

The SER states that all programmes are taught face-to-face, with duration of ten semesters (five years). Generally, the university writes, it takes students 11,8 semesters to finish their studies.

The schools and programmes plan their activities and lay out their strategic objectives and indicators in line with faculty/college development plans as well as the institutional development plan, as is written in the SER. They all apply standards that regulate their activities and implement mechanisms and formal instances for the equalisation of the educational processes at all campuses.

Following the descriptions in the SER, the curriculum for all study programmes under review is organised in three areas or curricular lines: Basic Sciences of Engineering and Technology, leading to the degree of Bachelor in Basic Sciences in Engineering, which involves 30 % - 40% of the STCs; the Disciplinary - Professional area, including two phases: the proper disciplinary and professional training, leading to the License Degree in Engineering Sciences, and then activities leading to the professional title/degree, including supervised practicum in a real work environment, and involve 50 % - 60% of the STCs; and the Integral or General Education area, which involves 9 % - 13 % of the STCs.

1.2 Civil Engineering (Bachelor in Engineering Sciences)

Description

The Civil Engineering Programme awards the degree of Bachelor in Basic Sciences in Engineering, the academic License degree in Engineering Sciences and the Professional Title/Degree of Civil Engineer. Graduates are able to work in fields such as civil works design, construction management and civil works project planning, according to the SER. The graduation profile includes skills such as the critical evaluation of orders of magnitude and meaning of numerical results, resolution of problems related to civil works, handling of computational and modelling tools, integration of multidisciplinary teams, effective communication, creativity, and innovation in the context of their speciality in the SER.

According to the university's SER, students need 318 STC to finish their degree with one STC equalling 30 hours of workload. 121 STCs are distributed onto the initial area, taking place from the first to the fourth semester. Students are to learn the exact sciences in these semesters as well as integral/general training subjects, computer skills or English. From semester five to eight, students learn in the professional-disciplinary area, which consists of 121 STCs. This phase is supposed to continue the initial area of the studies and establishes the fundamental concepts of engineering. The second phase of this area in semester nine and ten consists of 76 STCs, as the SER states and is supposed to culminate in the development of skills, attitudes and procedures of the discipline.

Throughout the first nine semesters, the curriculum is stated to have 62 subjects. Semester ten offers the possibility to either choose four or six subjects, each option leading to 30 STCs. Additionally, the study programme includes two mandatory practices. The SER informs about the industrial practice in semester six and the professional practice in semester eight. Both have a minimum duration of 180 hours, corresponding to twenty working days (one month), considering nine hours per day.

Experts' evaluation

After reviewing the documentation and discussing with all relevant stakeholders, it can be stated that the graduation profile for the Bachelor's programme "Civil Engineering" is based on a clear foundation in civil works design, construction management, and civil works project planning. The current curriculum successfully strives to impart basic sciences, engineering sciences and specific attributes according to the specialty students will choose. The experts have learned that generally graduation profiles are also assessed by external and internal stakeholders, such as the sectoral council (per campus), the 2030 Engineering guidelines or national entities, e.g. the Chilean College of Engineers or the Chilean Institute of Engineers. Based on the documentation and the discussions on site, the experts conclude that the graduation profile meets the required standards. The

follow-up discussion with the labour market representatives confirmed that impression by the experts. Consequently, it can also be concluded that the intended learning outcomes on the programme level are in line with the European Qualifications Framework (EQF) level 6.

The curriculum's structure is based on three components, namely the basic sciences in engineering component of 121 Chilean credits (leading the Chilean *bachillerato* degree), the first professional area with again 121 Chilean credits (leading to the Chilean *licenciado* degree), and the second professional area with 76 Chilean credits (leading to the Chilean professional degree). The experts confirm the overall adequacy of the curriculum's structure which are in line with ILOs on the programme level and the graduation profile. However, the discussion showed that at national and international level, Civil Engineering programmes commonly have certain specialisation integrated in the curricula, e.g., Structural Engineering, Infrastructure, construction management, or water resources (hydraulic engineering, water resources management, hydrology, among others). Especially in the light that Chile faces significant challenges related to water scarcity and management, this topic should be stronger represented in the curriculum (**Finding 1**). By integrating a robust representation of water-related topics into the curriculum, students will be well-equipped to tackle issues such as efficient water use, sustainable management of water resources, and solutions to mitigate the impact of water scarcity. This is particularly relevant given the country's climate and the necessity for effective water resource management. From the expert's perspective, a curriculum that places adequate emphasis on water-related qualifications ensures that students are knowledgeable about environmentally friendly practices, water treatment technologies, and methods for reducing the environmental impact of civil engineering projects.

The experts have learned that the study programme is soon facing an update, which will be implemented as part of the continuous curricular improvement. The discussion with internal and external stakeholders showed that the elimination of yet compulsory English courses is internally currently debated. However, the experts want to express their concerns eliminating the chance for students to level up their English proficiency. Still, the experts have learned the university's strategy to expand internationalisation and research activities. Therefore, the experts point out that in the ongoing development of the programmes, the university must actively emphasise the significance of English, recognising it as a key competency for graduates and an essential skill they require (**Finding 2**). Consequently, the experts highly recommend keeping the existing English language courses as mandatory in the curriculum.

Overall, the experts confirm that the faculty and the department are constantly focusing on the further development of the programme, which is a positive sign for an active approach from the relevant people involved. The curriculum's review of the experts and the follow-up discussion were also focusing on elective options for students. From the expert's perspective, the curriculum does not include sufficient possibilities to enable more flexible learning paths of students in the light of the specific discipline. The expert's panel would expect that more elective opportunities which are genuine for the discipline are offered to students in the curriculum (**Finding 3**). This would enhance the attractiveness of the programme and would allow the programme to outline its specific strengths in a clearer way.

The experts were supplied with syllabi for all courses outlining the different content of courses and the variety in evaluation types. The review of the submitted material showed on one hand a good overview for the *licenciado* and the professional degree equipping students with detailed information on the courses. On the other hand (equal to the other three programmes), it became evident that particularly for an external audience the level of information of the character of the programme in general and the acquired skills and competencies in basic courses in the degree is insufficient and must be made publicly available including the intended learning outcomes, course extent and examination methods (**Finding 4**). Even beyond this required additional transparency the Faculty should consider publishing the basic course descriptions also in English language.

The consistent use of syllabi and course content across the campuses (the programme is taught in two different campuses, namely in Santiago de Chile and Concepción) is a positive asset. While the syllabi and course documentation are harmonised between the campuses, the discussion focused on the challenges in the equalisation process in terms of teaching and learning mechanisms. Although there might be differences for the teaching material, the syllabi and the examination questions are harmonised. The review of final examinations that the intended learning outcomes on the programme level are in line with the achieved learning outcomes at the end of the programme at the different locations. Consequently, initial concerns by the panel of experts could be mitigated.

In terms of number of students for class delivery the panel learned that there are around 30 students per class in Santiago and Concepción campus. Consequently, courses are small; fostering an active interaction among students and professors. Even though the latter may seem perfectly fine, the number of full-time professors available in comparison to part-time professors' is an area of future consideration. This ratio is around 60% / 40%. While the panel of experts understands that part-time professors can better transfer their personal working experience to students, at the same time it creates potential instabilities to the courses due to possible dropouts. On the long run the development of research might benefit from a higher number of full-time staff **(Finding 5)**.

Conclusion

The criterion is partially fulfilled.

1.3 Civil Engineering in Mining (Bachelor in Engineering Sciences)

Description

According to the SER, the study programme in Civil Engineering in Mining leads to the degree of Bachelor in Basic Sciences in Engineering, the academic License degree in Engineering Sciences and the Professional Title of Civil Engineer in Mining. The programme's graduation profile includes being trained in the knowledge areas of basic sciences and engineering sciences of the specialty. The graduate also has training in the areas of professional performance, namely: Extraction of Mineral Resources, Mining and Metallurgy Management, all with a focus on safety and sustainable development. Furthermore, graduates are prepared to work in open pit and/or underground mining sites, designing, planning, and actively managing the development stages of a mining project from pre-feasibility studies to the site closure plan.

The study programme follows the same three stages as the other programmes of initial phase, disciplinary/professional training and integral or general education. To achieve the professional title of Civil Engineer in Mining, students have to achieve 309 STC, according to the SER.

Recently, as mentioned in the SER, the study programme has been revised to include project work and project learning during a larger part of the curriculum, strengthen the outreach with the surroundings and include English subjects with a profession specific perspective.

Experts' evaluation

The expert panel found the programme and structure to be overall convincing and well established. The paper-based impressions were confirmed by the interviews with the different status groups and stakeholders. The panel of experts confirms that the presented programme is highly relevant and to a very large extent the content and structure are in accordance with international standards on mining engineering education which overall is in line with the awarded degree. The analysed documents come up particularly also the consideration of student work supports the conclusion that the programme reaches the requirements specified in the European qualifications framework for the bachelor level.

There are several points that further support the overall positive impression, particularly the fact that the structure of the programme enables the student to follow a clearly defined route that allows them to finish their studies within the predefined time frame. Furthermore, the learning facilities, student- and research laboratories are modern, well equipped and thus capable of being useful for addressing all relevant subjects of mining engineering.

Positive mentioning should also be given to the high level of practical student work and projects that is key for the development of skills in students and combined with relevant internships during the studies that expose students to their later work environment these practical parts provide students with valuable insights into the industry realities of today.

The panel of experts also found that there are close and positive ties to the industry, with an industrial Advisory Board in place thus maintaining a steady inflow of feedback from industry into the further programme development.

Within this overall positive impression, the panel of experts believe that there might be some room to increase the mining related contact hours for students also early in the programme (e.g. replacing the civil engineering project with an early mining related engineering project). This might clearly require a reconsideration of the very static approach of the faculty towards the first semesters which are basically equal for all of the programmes combined under the umbrella of civil engineering. While the panel agrees that a certain basics and fundamentals are required for all further fields of engineering studies, the currently chosen approach ignores factors of student motivation, developments of field specific skills over a longer time, and also combines some of the most challenging courses of studies all in the early semesters. The panel of experts was not surprised to hear potential solutions to this structural challenge in very constructive interviews with students that do not only focus on student interest, but also admitted the benefits of the current system wild outlining potential ways to include some specific courses already in the first semesters. The panel of experts highly encourages the faculty to consider adding earlier options of specialisations in the first semesters **(Finding 6)**.

As discussed during the interviews with the faculty and teaching staff the current representation of some mining related subjects should is not yet 100% clear or sufficient and must be better implemented and/or the content increased. This is particularly true for a) Electrical drives and motors, b) Surface mining equipment, c) Underground mining equipment, d) DMEs, Gases, e) Mining infrastructures (utilities, workshops), f) Mine rescue and mine emergency management and handling, g) Fluid mining **(Finding 7)**.

The panel of experts also appreciates the constructive discussion during the visit on the issue of Ethics in mining /social license to operate that in the future could be part could be part of anthropology. Furthermore, reflection should be given to the discussion on the relevance of English language for the curriculum. The panel of experts wants to encourage the Faculty to prepare the future graduates for an increasing globalized mining industry, and on the long run consider to teach at least some of the mining specific subjects in English language, using English terminology **(see Finding 2)**. This aligns with room for a significant increase on international collaboration, both for staff and students.

The panel of experts further wants to highlight an area that offers room for improvement in the future development of the programme as it combines both critical thinking as well as “mining engineering design and synthesis” skills of students. Particularly in mining it is required to qualify future graduates to become self-sufficient and independent problem solvers in their later industrial career, capable of applying and combining their knowledge from all different fields of Mining engineering into the development of practical and feasible solutions. Consequently, the curriculum requires “synthesis” elements which requires students to bring together end combine the knowledge is from the different fields into one project and demonstrate their ability to critically reflect and synthesise mining specific content **(Finding 8)**.

Yet unused potential lies in increased interaction between students and the industry. The panel learned that the faculty and its staff is in a healthy exchange with the labour market. However, interaction between students and industry (projects, internships) could be fostered even more by the faculty respectively USS, e.g. by organizing industry/internship fairs. This observation is not only relevant for this specific programme, but also applies to the three other programmes under review (**Finding 9**).

Conclusion

The criterion is partially fulfilled.

1.4 Industrial Civil Engineering (Bachelor in Engineering Sciences)

Description

The Industrial Civil Engineering programme awards the License degree in Engineering Sciences and the Professional Title/Degree of Industrial Civil Engineer. Its graduation profile, states the SER, means that graduates are prepared to work in the areas of production management and continuous improvement, organisational management and decision making and innovation and entrepreneurship. They have professional training in areas of knowledge of basic sciences, engineering and their specialty, including production and operations management, organisational management, economic and financial management, handling of systems and information technology, and intermediate level English.

The SER states that this programme can be studied in two modalities one for regular students usually coming from High School, taught during daytime, and another one for adult students and workers with previous formal studies, taught at evening time. Whereas the daytime modality is taught in ten semesters equal to the other programmes under review, the curriculum of the evening time modality is taught in nine trimesters, ten if a levelling trimester is needed.

The daytime study programme is said to contain 63 subjects as well as two practices, an industrial and a professional one. This version of the programme leads to a total of 313 STCs. For the evening time study programme only 131 STCs are needed to graduate, in case a levelling semester is needed, and 118 STCs, in case no levelling is needed.

To achieve the professional title, students of the daytime modality must either complete an individual degree project or a project at an enterprise, as the SER states, whereas students of the evening time modality have to complete a degree project, such as resolving a real problem at an enterprise; carrying out a research or an evaluation of a potential new business or product.

Students' progression is monitored via curriculum feed matrixes as well as learning assessments in the different subjects.

Experts' evaluation

The review of the programme showed that the programme has some roots in the "Civil Engineering", which seems to be related to a national and historical perspective of the discipline. From the expert's point of view, the consequence of this roots which might have led to the name "Industrial Civil Engineering" as the programme's title is plausible, but from an international perspective partially misleading because it might bring misunderstandings as the curriculum does not include civil engineering-related qualifications. Consequently, this might hinder international exchange with similarly structured programme in other countries. Therefore, not only increased expectations towards the transparency and information on learning outcomes and qualifications are appropriate (**see Finding 4**) but the Faculty should carefully investigate pros and cons of the current name

of the degree which is nationally rooted and accepted while rethinking the name of the programme might be more in line with international trends. This conclusion is true for all but the “true” civil engineering programme under review in this procedure (**Finding 10**).

The expert’s panel has reviewed the curriculum, and it can be stated that the learner’s progression is plausibly implemented, offering the same structure of providing students with a *bachillerato*, a *licenciado*, and a Chilean professional degree. The discussion on projects developing during the study programme raised the expert’s attention. The examples given, e.g., the optimisation of mail logistics, forestry-company issues, or subway-related projects are meaningful and serve as good examples of the department’s responsiveness to current matters in the discipline. The curriculum outlined that USS offers two different study modalities, namely daytime studies (a full-time programme), and an evening modality (as a part-time programme). Based on the student’s background of these modalities, it can be stated that the curriculum exposes students sufficiently to practical input of the discipline. Full-time students will have the chance to take an internship, while there is no need to have an internship implemented in the evening modality since these students are already working in discipline-related working environments. While the overall structure of the programme is evaluated as fitting to the labour market and academic needs in Chile, and achieved learning outcomes of graduates at the end of the programme which makes the programme comparable with EQF level 6, it has to be stated that English competencies are currently underrepresented in the curriculum. Comparably to the other programmes, the expert’s panel believe that English will be one of the core competencies of students in the future which cannot be neglected by USS. Thus, the significance in the curriculum should be raised in the curriculum to ensure that USS graduates are equipped with comparable competencies which are relevant for the discipline on a global but also on a national scale (**see Finding 2**).

The structural and in-depth analysis of the syllabi submitted to the experts enabled the experts to get a good understanding of the core competencies in the programme. As outlined in the chapters above, there is a misbalance of information available regarding the three degrees within the curriculum. While the *licenciado* and the professional degree offers clarity in terms of ILOs, examination methods or workload, the *bachillerato* does not use the full potential that is available at USS. From the expert’s perspective, the harmonisation of the information made available has to be considered due to the fact that it would allow a higher level of information about the programme at an early stage (**see Finding 4**).

Conclusion

The criterion is partially fulfilled.

1.5 Informatics Civil Engineering (Bachelor in Engineering Sciences)

Description

As the SER states, the Informatics Civil Engineering Programme grants the academic degrees of Bachelor in Basic Sciences in Engineering and the License Degree in Engineering Sciences, as well as the Professional Title/Degree of Informatics Civil Engineer. Graduates of this programme are said to have solid disciplinary training supplemented with skills for interdisciplinary teamwork. More specifically this means that the graduates have training in basic sciences of engineering and disciplinary in the area of information technologies, qualitative and quantitative tools, modelling, and technological as well as skills for abstraction, synthesis, communication, and mastery of the English language.

The ten semesters of this study programme consist of 64 subjects, which lead to 313 STC as the SER says, and to the professional title/degree of Informatics Civil Engineer. The academic degree of Bachelor in Basic

Sciences in Engineering is awarded in the fourth semester (initial cycle) and corresponds to 121 STCs, and the License degree in Engineering Sciences is received in the eighth semester, corresponding to 256 STCs.

The SER mentions several revisions in this programmes' curriculum in recent years, such as redesigning it to include learning through projects as well as a reviewed graduation profile.

Experts' evaluation

Overall, the panel of experts found that the documents made available show a well-structured curriculum with all necessary information including a typical course plan for interested students. Relevant content that is part of the curriculum equally balances academic requirements with requirements that relevant for the future career of graduates. The curriculum lies foundations that are broad and required to develop a deeper understanding of the latter specific courses.

With the current curriculum the criteria for the professional degree of "Informatics/Computer Science (Civil Engineer)" are generally fulfilled in terms of specific subjects as well as the scope of the programme. This was also proved by a careful investigation of student work which supports the achievement of the bachelor level of the European Qualifications Framework.

During the site visit quite intensive debate was given to the basic structure of the curriculum which for all programmes under review foresees the first two years to be almost identical. Questioning this concept brought the knowledge that most of the Chilean universities used to implement similar basic modules to level young students to compensate different qualities in school education. The panel agrees with the line of argumentation of the faculty that basic fundamentals and skills are required particularly also with regards to the need to level the different incoming qualifications of the fresh students. Nonetheless, this levelling should be considered as a continuous process combined with more specific courses at early semester to help the students getting familiar with their specific programme. The current structure also has impacts on student workload, the clustering of basic sciences that indeed are the foundation for later competencies, but students hardly relate to "their" field of study this way. Having some more disciplinary contents in the beginning could also lead to a reduction of dropouts because as it takes students as partners and helps them relate to their field (**see Finding 6**).

The panel of experts found the programme and its content to be overall very much in line with the current trends and needs of the market as well as the academic development. Interestingly enough the areas addressed cover relevant areas of data science, cloud computing as well as computer engineering. This however is in a certain contrast to what one could expect from an informatics civil engineer, who would cover a match more specific area of the use of informatics in civil engineering (e.g., hardware-close programming languages). The panel learned that this is a specific naming topology in the Chilean higher education system and clearly had wished to understand the nature of the programme before analysing the detailed syllabi that were available in Spanish language. Besides the clear need to increased international transparency on the nature of the programmes (**see Finding 4**) the faculty should reflect to what extent this programme is a civil engineering programme beyond the national context (**see Finding 10**). In this context, the panel wants to highlight the helpful information provided in the diploma supplement that was provided by USS. Furthermore, as the panel learned during the interviews the main motivation of students for this study programme differs from the program's orientation. The students want to work as computer scientists, but the university does not yet offer a pure computer science programme at Bachelor level.

During the site visit and particularly in comparison of different interviews with students, the labour market, and the teaching staff there overcoming the gap between the academic research and the labour market orientation was a challenge in the past years. The panel learned and can also confirm from a careful analysis of the curriculum that now the demands of the labour market are very closely connected to the development of the

programme. This is stated through meetings with representatives as well as the teaching staff. But the possibility of a more academic focus and research is not well established yet. It seems that this need for more research activities is also explicitly demanded from the students' side who have a very strong interest for innovation and developments in the field of information technology. The panel of experts is positive that in the future the faculty will develop generic applied research projects that also enable as stronger academic implementation of applied research.

During the accreditation process, the discussion about internationalization and supporting students to develop their English-speaking skills had different perspectives. Especially for the programme of informatics the specific English language is very important and needs to be a substantial part of the education. This need is covered with the actual curriculum and its consecutive courses in English which start in the 3rd semester and continue constantly until the 7th semester with specialized English for engineers. In total the weight of mandatory English modules in the curriculum with 24 STC is close to 10% of the complete programme. This strategy of developing language skills is an essential asset for this study and helps the graduates to be trained for international activities (**see Finding 2**).

Conclusion

The criterion is partly fulfilled.

2. Procedures for quality assurance

Bachelor's/Master's degree

The programme is subject to the higher education institution's policy and associated procedures for quality assurance, including procedures for the design, approval, monitoring, and revision of the programmes.

A quality-oriented culture, focusing on continuous quality enhancement, is in place. This includes regular feedback mechanisms involving both internal and external stakeholders.

The strategy, policies, and procedures have a formal status and are made available in published form to all those concerned. They also include roles for students and other stakeholders.

Data is collected from relevant sources and stakeholders, analysed, and used for the effective management and continuous enhancement of the programme.

[ESG 1.1, 1.7 & 1.9]

Description

Universidad San Sebastián has implemented a quality assurance policy and system which is applied centralised across all study programmes and at all branches as outlined in the SER.

On an institutional level, the quality assurance system is based on four pillars (institutional inputs, functional processes, evaluation processes, and education outcomes). These pillars aim to detect shortcomings concerning the mission of USS, the expectations and interests of the faculty, and the needs of the relevant stakeholders. As the pillar for institutional input focusses on organisational aspects of USS as a whole (e.g. mission, strategic plan, policies, resources, or quality standards and criteria) and the pillar for functional processes focusses on faculty related aspects (e.g. curricula, academic management, research, community outreach, financial allocation, or governance), the pillars for evaluation processes and education outcomes are more linked to study programme perspectives, such as internal and external evaluations or stakeholders consultations (in the case of evaluation processes), and indicators of progression and graduation, stakeholder satisfaction, graduate development, or recognition (education outcomes).

The responsibility of the study programme-related perspectives lies according to the SER with the respective faculties, especially with the management teams and teams for the programmes and branches. These processes are facilitated by the Vice-Rector for Quality Assurance. USS foresees several instruments and processes to verify the quality of its programmes, such as mechanisms for quality assurance (MQA), external accreditation, continuing improvement instruments, graduate student monitoring, monitoring student progress through the curriculum, information for quality management, and processes to assure the integrity of staff and students.

The MQAs cover eight main areas, which are study programme specific. By definition, the MQAs I) ensure the consistency of the graduation profile with the discipline requirements and trends, II) provide mechanisms for diagnosing and supporting first year student progression, III) analyse information on indicators of curricular progression (e.g. retention, pass rates, graduation), IV) verify the level of requirements for each programme while ensuring equalisation among the branches, V) guarantee student assessment of teaching staff performances, VI) monitor systematically the availability and quality of physical resources and materials, VII) promote the quality of the teaching staff quality by, e.g. allocating resources for academic improvement, and VIII) support and monitor collaborative projects as part of USS' commitment for community outreach projects.

USS aims towards constant improvement for each study programme. In order to do so, the instruments cover a systematic review of the graduation profile and in consequence, an adaptation to ensure consistency with the learning outcomes on course level. For the study programmes under review, it is stated that clinical simulations being an essential part of the practical amount of the respective study programme. Changes are made transparent in log directories to follow the development of the respective study programme.

Feedback regarding the respective study programme and the appropriateness of the study programme outcome will be collected by graduate student monitoring procedures. The SER indicates that USS has implemented an institutional graduate policy that is using different follow-up mechanisms, such as graduate surveys (by using a graduate network platform), a graduate contact programme, or by using sectoral councils. Sectoral councils consist of professionals in the area of engineering, who can be contacted by the faculties.

Furthermore, the university states that policies are implemented that focus on the integrity of students, faculty members, and administrative staff. These policies outline university-wide standards on transparency, internal regulations, or regulations on science ethics, a protocol for reporting violence or sexual harassment, or regulations on spin-offs or licensing procedures.

Experts' evaluation

As described in the provided documents and discussed during the site visit, the university has several internal mechanisms for quality assurance, which the university states are applied equally across all their campuses. In order to apply an open and fair evaluation of each student, USS explained that the corresponding syllabus of each course is readily available for all students, anytime during their studies. This syllabus contains information regarding summary of the course, table of contents, academic requirements, number of credits (academic workload), number and type of evaluations, software's employed, complementary literature, etc, in all cases indicating the main objective of the course (in the context of the graduation profile) and the desired learning outcomes. The panel of experts carefully reviewed the syllabi as part of the curricular assessment but also with regards to their importance as elements documenting the baseline for internal quality assurance. The panel concludes that they are sufficient for the professional use of students and internal stakeholders. The transparency for external stakeholders was already discussed above (**see Finding 4**).

With the quality assessments and experiences coming from professors and business collaborators, both in formal instances (internship surveys) and informal instances (joint collaboration between professors and business representatives for specific projects), the university takes decisions regarding the suitability of the study

programmes, mostly on terms of addition/modification of courses, and even re-designing of study programmes. The panel found adequate evidence for the implementation of these processes.

Regarding the student's perspective, the university demonstrated that there are surveys for the students for each course (and before getting their grades), in order to evaluate their professor's performance (while not being biased towards their own performance in the course). Depending on the results, the university decides and executes different actions to address the corresponding academic shortcomings. In this regard the panel learned that students rarely have an idea on the results of the evaluation they fill in. It seems to the panel that here the internal quality assurance system has not yet fully closed the information loop. Consequently, the faculty, and potentially USS is encouraged to develop means of sharing evaluation results and implemented measures also with those who provide the input i.e. students (**Finding 11**).

The same observation can be taken a step further as the panel of experts was left with a generally positive impression on the relationship of students and staff and the dedication of the teaching staff for the development of their students was impressive. This is also achieved through open dialogue and an open-door policy. The panel learned about the good responsiveness of staff on students request and a positive attitude of dialogue. From an experts point of view this spirit has not yet materialized in the formal quality assurance system which benefits from student input, however does not yet accept them as partners in the next step of discussing results and deciding on measures to be implemented. During the interviews the panel was impressed by the differentiated perception of students when it came to areas of improvement and clearly encourages USS to also structurally take the next step and involve students as partners in quality assurance and also include them in the development and update of programmes (**Finding 12**).

Finally, it is important to note that the university has all the relevant information online within their internal websites/database. This allows for good data management and internal transparency in order to provide information when discussing to introduce further changes to the program. USS also follows up on some metrics of interests of the student's progression, such as first/second year employability and professional path of graduated students. For example, the panel learned that a huge number of civil engineers' students end up working for structural and construction companies, which also explains the large dedication in the corresponding programme to these areas. Consequently, the panel believes that the implemented quality assurance system is fit for purpose and enables the faculty to manage their programmes based on well-established data collection.

Conclusion

The criterion is fulfilled.

3. Learning, teaching and assessment of students

Bachelor's/Master's degree

The delivery of material encourages students to take an active role in the learning process.

Students are assessed using accessible criteria, regulations, and procedures, which are made readily available to all participants and which are applied consistently.

Assessment procedures are designed to measure the achievement of the intended learning outcomes.

[ESG 1.3]

Description

The SER states that in all study programmes under review, participatory classes as well as practical ones are taught. Practical training is given high priority, with Industrial Civil Engineering having practical components in over 65% of all subjects. For other study programmes it is said that percentage of actual practical and theoretical-practical training hours approximately doubles the number of hours of strictly theoretical activities. Students are supposed to learn based real or simulated professional settings or contexts such as: Experiences in the world of enterprises, public and private; Modelling and simulation using specialised software; Field trips and laboratories, some of which are linked to Community Outreach projects.

Seen as a crucial mechanism for quality assurance for each study programme, USS uses traditional and non-traditional assessment methods for the study programmes under review. Traditional assessment methods are defined as written exams, oral exams, presentations, individual or group work, or reports. Non-traditional assessment methods are entry examinations for an internship, laboratory work, or seminars, reports on laboratory, field practice or internships, written or oral presentations of research work, or national cross-cutting assessments. For all branches, USS uses the same academic calendar which enables the university, on the one hand, to plan simultaneously and on the other hand, gives students in advance an overview regarding the assessments.

Students can appeal based on regulations that USS have developed in order to safeguard students. USS additionally declares that the staff responsible for the study programmes have an open-door policy, which can help to advise in special situations.

Experts' evaluation

Overall, there is a high level of different teaching methods implemented in the programmes with general lectures in the early semesters but also practical classes with experiments and laboratory work. The experts can find a wide variety of assessments that overall, also fit the different learning outcomes specified in the syllabi. The teaching staff mainly spoke about three assessments during the semester that make up 70% of the final grade, and the rest 30% can be attendance and other quizzes. The discussions with students revealed that they perceive the assessment 50/50 with 50% of high relevance for the learning outcomes and the remaining part assuring their participation while still being graded. On the long run USS could experiment to use attendance as a prerequisite for assessment instead of grading it and design small quizzes better suited for students' self-assessment instead of being part of the final grade. Particularly in higher semesters building on a more and more independent learner should also be supported by the assessment system instead of strictly making every piece of the puzzle relevant for the grade.

With all the laboratories and projects in the later semesters, the experts see a good contrast to the basic science subjects which fits well to the curricular involvement of students.

The university explained well how it is putting the students in the centre of education. Their personal development is supported by different courses as well as with small classes and a personal contact with professors

and teaching staff. Also, the facilities with their newly equipped labs offer different opportunities for students to develop their personal interests and their social skills with group projects.

During the site visit the panel of experts could visit many different laboratories which makes it obvious that the practical part in the education is important. Teaching and learning in small classes in the labs seem to be an important aspect of education and helps the teacher to support the students individually.

During the lab tour in Puerto Montt, the experts learned that the laboratory physics work is combined with computer science. For example, students collect the pressure resistance of materials with sensors which they can analyse afterwards. In other courses students with different backgrounds work together on one challenge. The experts clearly support the approach of interdisciplinary teaching.

Some practical projects are developed by researchers including undergraduates. Lecturers gave many real-world examples, like a water management project where a ship goes through the southern sea and collects water samples that are later on analysed.

Number of exams and quizzes are available in the syllabus of each course. Unfortunately, this information is available in Spanish only and not accessible to the public. The number of exams during the semester is usually three, covering all the contents of the courses. Additionally, some reading quizzes are also considered on some occasions. The panel of experts found a high level of alignment between the different interviews and the provided documentation enabling the panel to conform that overall assessment methods are fit for purpose.

The panel also learned that there are different possibilities and regulations to compensate students with special needs. This does not only include technical or organisational aspects of studying but also compensation during exams or assessments.

Conclusion

The criterion is fulfilled.

4. Student admission, progression, recognition and certification

Bachelor's/Master's degree

Consistently applied, pre-defined, and published regulations are in place which cover student admission, progression, recognition, and certification.

[ESG 1.4]

Description

As widely practiced by Chilean universities, USS uses a nationally wide admission procedure, the so-called single admission system (Sistema único de admisión). The system considers the grades from the secondary education of applicants, and the score in the university selection test (prueba de selección universitaria, PSU). By using these results, potential students can apply by stating the preferences concerning the higher education institution and study programme. The university selection test covers examinations in Spanish, mathematics, history, and history. USS outlines that potential students can either apply by using the regular admission or the special admission procedure. The regular admission procedure is based on the results of the PSU. For each programme, USS assigns weightings concerning each subject of the PSU. These weightings are outlined for each study programme and differ from branch to branch. According to the admission regulations at USS, the special admission procedure (disabilities) or students having professional experience or coming from another university. Details on the admission modalities and admission requirements are outlined on the USS website.

As the study programme of Industrial Civil Engineering in the evening time variation requires students to have prior knowledge, the admission prerequisites differ from the other study programmes under review. Applicants have to have at least 3.200 hours in an incomplete single programme or in related programmes implying a levelling trimester. Additionally, at least two years of labour experience in the pertinent field is required.

USS's study programmes are also published on the website of an external agency that manages the single admission system and the PSU. The final admission and the final enrolling procedure at USS is located at the USS admission and dissemination unit. When entering the respective study programme, students will take a diagnostic assessment to detect potential needs in an early stage.

Following a university-wide regulation on recognition of prior learning, students may hand in documents to be recognized. The responsibilities lie with the faculties, and the final decision of recognition of prior learning will be made by the study programme coordinators. By regulation, at least 40 % of the study programme has to be taken at USS. Furthermore, final graduation theses or research reports cannot be recognized.

Following the self-evaluation report, graduates of the study programmes receive a certificate and a document explaining the fulfilment of the requirements for achieving a bachelor's degree and a professional degree.

Experts' evaluation

The formal requirements for admission (and also the prerequisites by each study programme) are clearly defined and available on the institutional website (see, e.g., <https://admission.uss.cl/carreras/ingenieria-civil/> for the Civil Engineering programme). This information is complete and also helpful for students as confirmed by interviews.

Prerequisites of the study programmes depend on four different aspects: i) Marks in high school; ii) Mathematics; iii) Spanish language skills; and, iv) Chilean history knowledge. These aspects are generally convincing from the point of view of the expert panel and in terms of indispensable prerequisites, probably the most important is related to mathematical skills, motivating the high percentage required in students' applications (between 35% to 45%, depending on the study programme analysed).

Once enrolled, the progression of students is systematically monitored with an internal data management system come on that enables the faculty to carefully observe the progression and success of students, also indicating potential risks. The panel of experts is highly impressed with the high level of internal transparency and data available on student success which enables an efficient and effective management.

In terms of internationalisation (and this recognition), the university has several international agreements with different institutions. The panel also learned that further agreements are in progress. However, it seems that mobility of students is at early stages. The panel learned that mainly economic reasons hinder extended student mobility. Consequently, also the application of recognition regulations is very limited. This does not limit the ability of the institution and the faculty to continuously prepare also for incoming students by creating and increasing transparency for "non-traditional" students / incomings.

A very positive development that the experts can see in this regard is the provision of diploma supplements to graduates, facilitating their transfer into foreign labour markets and other higher education institutions internationally. This step to increasing transparency should be further continued as USS at this point clearly is at the early stages of its internationalisation and consequently many steps taken will only show an impact on the long run not mitigating the need to implement forward thinking policies already at this point.

Conclusion

The criterion is fulfilled.

5. Teaching staff

Bachelor's/Master's degree

The composition (quantity, qualifications, professional and international experience, etc.) of the staff is appropriate for the achievement of the intended learning outcomes.

Staff involved with teaching is qualified and competent to do so.

Transparent procedures are in place for the recruitment and development of staff.

[ESG 1.5]

Description

USS states in its SER that in 2022 a total of 3.876 faculty members taught in the different study programmes, 30% of which were contracted full time, while 70% had a part time contract. Whereas the university values its part time staff because of its connection to the professional world, it still tries to increase the number of full time faculty members by transforming part time staff into full time staff. All teaching staff has a Professional Title/Degree, a License Degree, and working experience, and increasingly (over 70%) higher academic degrees (Masters', Doctorate, Medical or Dental Specialisation) or other specialisation formal courses. It is the USS policy to hire faculty staff with at least a Master's degree, but increasingly preferring those with a doctorate and proved experience in research. All teaching staff is also given training in pedagogical subjects at USS.

The academic staff in each of the different study programmes under review is as follows:

Civil Engineering: Santiago 50 (27 fulltime positions), Concepcion 53 (27 fulltime positions); 36 out of 103 positions are directly linked to subjects of the speciality; teaching staff with Master's degree: 67, with doctorate: 20; Santiago: 14.3% associate professors, 3,6% tenured; Concepcion: 6,7% associate professors, no tenured positions

Industrial Civil Engineering: Santiago 53 (31 fulltime positions), Concepcion 54 (32 fulltime positions), Valdivia 19 (ten fulltime positions), Puerto Montt 21 (17 fulltime positions); 56 out of 147 positions are directly linked to the subject of the speciality; teaching staff with Master's degree: 107, with doctorate: 20; all campuses: 8,5% associate professors (none in Concepcion and Valdivia), 2,1% tenured (none in Concepcion and Valdivia)

Informatics Civil Engineering: Santiago 52 (30 fulltime positions), Concepcion 14 (12 fulltime positions), Puerto Montt 6 (all are fulltime positions); 16 out of 72 positions are directly linked to the subject of the speciality; teaching staff with Master's degree: 48, with doctorate: 10; 9,1% associate professors, 4,5% tenured (none of each position in Puerto Montt)

Civil Engineering in Mining: Santiago 49 (27 fulltime positions), Concepcion 44 (26 fulltime positions); 25 out of 93 positions are directly linked to the subject of the speciality; teaching staff with Master's degree: 58, with doctorate: 19; 11,5% associate professors, 4.9% tenured

Hiring new staff includes interviews, specialised public presentations, psychological/labour assessments, depending on the level and nature of the position to be filled, according to the SER. USS and its faculties have incentives and facilities for teaching innovation, carrying out research projects and community outreach projects, as well as further education or training in teaching. For the professional development of staff, they are to address the Office of the Academic Vice-Rector, which promotes this subject and which is backed up by provisions in the university's educational model.

Experts' evaluation

The numbers of academic staff given in the SER are increasing since the pandemic and 2022 numbers are in general sufficient to run the programmes and to cover the broad spectrum of subjects in each of the study

programmes. One initial concern that relates to all programmes is the high number of part-time staff. It is understood, that in contrast to full-time lecturers, part-time lecturers are not permanent employees of the university and have only 1 year contracts. In principle part-time lecturers, who partly work in the industry, are beneficial as they are familiar with recent technology and can add experience from the practice. Nevertheless, and although it is explained by the faculty, that many part-time lecturers are associated with the university for years, the high number of part-time lecturers poses a risk for the quality and continuity of the curriculum. Therefore, USS is encouraged to analyse to what extent this ratio is also healthy on the long run with an increased relevance of research (**Finding 13**). It is important to the panel of experts to highlight that at this time this is not an issue of quality (as explained above) but a question of risk assessment and overall match to parallel strategic developments at faculty / university level.

For the recruitment of lecturers, there is a commission at faculty level that reviews the candidates and together with the dean interviews the applicants. For part-time lecturers section criteria are a minimum number of publications (e.g. in theoretic physics at least five publications in three years, based on CNA regulations) and specific research activities. The final decision is made by the dean in consultation with the faculty. Students are not involved in the selection procedure. In view of the very competent and responsible students of the faculty, which the experts could meet during the site visit, it could also be considered to include their expertise, e.g. via example lessons by the applicants, in the decision process (**see Finding 12**).

Overall, the panel can confirm that with regards to quality and quantity staff resources are appropriate to achieve the learning outcomes of the four programmes under review.

Conclusion

The criterion is fulfilled.

6. Learning resources and student support

Bachelor's/Master's degree

Appropriate facilities and resources are available for learning and teaching activities.

Guidance and support is available for students which includes advice on achieving a successful completion of their studies.

[ESG 1.6]

Description

Students are said to receive support once they are enrolled at USS with facilitating levelling their knowledge and learning options, as well as access to cultural, recreational, and social activities that enrich their university experience. According to the SER, coaching has been extended to higher levels of the curriculum through counselling for support in areas such as *oral and written communication skills, academic assistantships and includes motivational workshops and activities.*

To foster the students' needs to study, classrooms, computer labs, auditorium, conference rooms, gyms are available as well as space for exhibitions, cafeterias, and meeting points. Laboratories are divided into those for common use in the courses of basic sciences as well as those specifically for one discipline.

The USS Library is said to have up-to-date resources, information services, and space for students to study individually or in groups. Furthermore, bibliographic, digital, and technological material is available as are trained professionals to support students if they need help.

Students are further supported financially if they need it, can find healthcare services on campus or receive special benefits such as upfront enrolment if they are parents to young children. All students, according to the SER, can ask the Student Wellbeing Unit for help learning how to achieve their goals. Students with disabilities and their inclusion is also taken into account, as the SER mentions. If students are interested in internationalisation, they can ask the International Affairs Office, which counts with experience in this area as well as agreements with universities outside of Chile.

Experts' evaluation

The panel of experts received confirmation during the interviews on site with students and lecturers, that students receive information about the assessment and the weight of each assessment to the final grade at the beginning of each course. The intended learning outcomes are part of the course syllabi that are available to internal stakeholders in Spanish language. The experts encourage the university to provide the (shortened) course descriptions also publicly and as part of the internationalization strategy also publish key course information in English (**see Finding 4**). When talking with the industry supervisors for internships, experts learned that there is also preparatory communication on tasks at the beginning of the joint courses / internships with the companies. From talks with the labour representatives and the dean, the experts conclude that the guidelines to evaluate the student's work are clear. The supervisors of the companies do not know the workload of the students on the university side. Therefore, the experts see room for future improvement to transparently inform the supervisors of the workload of students (e.g., the expected workload for the final report) so that all parties know.

To inform and support students' syllabi of all courses are available with contents descriptions as well as number and type of assessments. For the panel of experts, it was interesting to find that in the documentation not all courses with practical elements also indicate to have practical sessions. For instance, the course of "Hydrology and Sanitary Engineering" of the Civil Engineering programme has 6 hours of theoretical lectures and 2 laboratory hours per week. No information regarding laboratory activities was found in the syllabus. The panel encourages the faculty to discover that course descriptions do not only serve internal documentation but are also a relevant source of information for an outside audience to learn about the quality and level of education provided by USS. Hence correct provision of up to date information should be assured.

It was confirmed during the interviews that the university predefines a clear course schedule so that course overlapping does not occur. The experts see that the general organization of the curriculum allows to study in the expected period. Like in other undergraduate programmes, the experts learned that the organization of the schedule is closer to the school model, where the university requires fewer student self-organization actions. Clearly, this facilitates the arrival in the new learning context and supports the students.

The panel of experts positively values the available materials at the university at all four campuses. There is support staff for each laboratory, and they are present all day long. For some laboratories, students receive a specific time slot during the week for their experiments because of security concerns. The experts appreciate the small groups of students conducting these experiments. Other labs, like the MakeIT lab, have an open-door policy. The expert group highly appreciates this strategy so that whenever a student has an idea, they can come by and prototype their ideas. The experts assess the facilities as good in some parts also with the newest technology (underwater robots, drones, 3D printers, laser cutters). The experts conclude that the facilities support a student-centred learning environment where students can experiment and work in teams. The small groups of students per year fit into the facilities, and the experts see and support the effort of the university to further expand the laboratory spaces (e.g., water experiments).

During the campus tour, the experts learned that the seats and booths in the library are popular and sometimes have waiting times to get to a workplace during the busy hours of the day. However, in the evening time, it is almost empty. Consequently, space sets a natural limit to a future increase of students' numbers. Furthermore,

there are many licenses for online access for relevant sources and databases. During the interviews the lecturers mentioned IEEE journal access, a main literature source for engineers. The expert panel randomly checked for sample literature of the physical books for e.g. mining engineers, and the literature meets international standards. Consequently, the panel of experts conclude that physical resources are adequate for the achievement of learning outcomes in all programmes under review.

The experts learned from the talks with the students that students know where to go if they have a problem. One student reported that he reached out to a professor after receiving a bad grade and asked for material to improve in this subject. The professor was reachable, provided a different approach to explain the topic, and gave him many exercises to practice. The experts see the overall effort of the teachers to support students, and the supervisor ratio is beneficial for the students.

The experts also carefully discussed how students are supported in finding internships with different status groups. The Civil Informatic Engineering students have no problem finding an internship due to the rising field. However, the Civil (Industrial) Engineering students reported difficulties finding the internship they are interested in. The university states that each student gets support if they reach out to them for help. Experts recommend making this information more transparent to students in case they don't know. Further, the experts support the idea of a job fair day at the university where interested students could go to the booth of invited companies (**see Finding 9**). When discussing this idea with the labour market representatives, they seemed quite supportive and saw different benefits from their perspective as they would meet potentially interesting candidates as well. Students of all programs state that they would like to see career paths early in their studies to get an understanding of the different fields of their studies. Experts think that inviting graduates of these programmes and letting them present where they went with this study programme could be one way to please that wish.

Finally, the experts learned that the university has important mechanisms to support student diversity. For example, teachers reported that they can access special training in case they have students with different needs where they learn how to adapt their teaching to these needs. Other personnel were mentioned to support that student in the university environment.

Conclusion

The criterion is fulfilled.

7. Public Information

Bachelor's/Master's degree

Impartial and objective, up-to-date information regarding the programme and its qualifications is published regularly. This published information is appropriate for and available to relevant stakeholders.

[ESG 1.8]

Description

As outlined in the SER, USS has different paths to inform the public about their study programmes, the activities at USS, community outreach projects, or additional information of any type. For all kind of external information, USS uses either nationally published reports on the Chilean higher education system, the distribution of printout material during school fairs, or the USS website which outlines the curricular content for each study programme, or the admission requirements for each study programme at each branch.

Internally, USS uses a platform with personalised access. This platform (MiPortal) contains information on grades, learning material, communication between faculty members and students, or assessments. Additionally, USS has implemented another platform (MiMundo) which can be used for the curricular follow-up or an overview of students' performances.

Experts' evaluation

The panel of experts positively assesses the internal platform used by USS as it provides several statistics of interests which allow the university to analyse and make decisions regarding the suitability of the study program, in terms of: grades, internship status, rates of approval, students success, etc. Clearly, with this amount of available information, data management and analysis are key.

As mentioned before, targeted information is readily available for all students at the beginning of each semester, and new students have introductory courses and tutorials to familiarize them with their programmes.

However, it is important to note that this information is mostly limited to already enrolled students and staff members, with only the most general information provided for the general public, in order to catch prospective student's attention.

On an individual level the panel of experts very positively highlights the implementation of a Diploma Supplement which provides clear information in the education graduates achieved. This relevant step clearly prepares USS graduates for easier acceptance of their degrees outside their home system. Beyond the individual transparency provided to graduates, structurally the Faculty still has room for the development on the field of public information. Due to the early stage of internationalization the information to the general public assumes that contextual information and local specificities are known to the potential audience. However, this cannot be taken for granted. E.g. "Civil Engineering" in Informatics could be seen as an unusual name for the programme but finds its reason in the Chilean regulations and traditions as the national market knows well what to expect from that. In some European contexts this degree would indicate a Civil Engineer who has specific qualification in the application of informatics to his field. For the reviewed programme this is however not the case. Consequently, there is no transparency for an external audience that might help to understand the true nature of the programmes based on the published information. This is particularly burdensome for recognition bodies so the University will have to assure transparency for an external audience by publishing relevant information and course descriptions (not fully syllabi) regarding their programmes. As the language of teaching is Spanish publishing it in Spanish might be sufficient, depending on the internationalization priorities of USS also publishing key information in English clearly will be helpful (**see Finding 4**).

Finally, as explained in previous sections, the university has explained that one of their main stakeholders is the industry, and based on the corresponding meetings, the panel concludes that indeed there is a stable interaction between the university and the labour market. However, the degree of information sharing between these groups differs highly depending on personal contacts and a more systematic approach to informing the public about the key elements of the programmes and courses will also provide a better level of information for the industry.

Conclusion

The criterion is partially fulfilled.

V. Recommendation of the panel of experts

The panel of experts recommends accrediting the study programmes “Civil Engineering”, “Civil Engineering in Mining”, “Industrial Civil Engineering” (morning and evening modality), and “Informatics Civil Engineering” all leading to the Degree “Bachelor in Engineering Sciences” offered by Universidad San Sebastian with conditions.

Commendation:

The panel of experts commends USS and the faculty for the active relationship of the teaching staff with the students, the continuous support for the development of the students beyond field specific elements and the continuous development of the programmes carried by a highly capable and devoted staff and leadership team.

Findings:

1. For the Civil Engineering programme topics and qualifications connected to water should be stronger represented in the curriculum.
2. For all programmes within the future development of the programmes the relevance of English should be adequately reflected as it is a key competency of graduates and a skill they require.
3. For the Civil Engineering programme the number of elective courses genuine to civil engineering should be increased.
4. For all programmes to increase transparency on the character of the programmes and the acquired competencies basic course descriptions including Learning outcomes, extent, assessment form and basic content information have to be publicly available.
5. For all programmes with the growing relevance of research as part of the strategic plan of the university the faculty should also develop the ratio of part time teachers vs. full time positions towards a stronger role for full timers.
6. For all programmes the faculty should integrate courses specific to the respective programmes already in the first four semesters.
7. The Civil engineering in mining programme has to assure that the yet not fully integrated mining standards are covered by its curriculum.
8. The Civil engineering in mining programme has to assure graduates also possess mining specific synthesis skills, e.g. by introducing final projects.
9. For all programmes initiatives to actively link students to the labour market should be extended and intensified, e.g. by initiating employment fairs.
10. For all programmes but the civil engineering programme the faculty should consider adjusting the names of the degrees towards titles that increase transparency for an international audience.
11. Results of evaluations and implemented adjustments should also be shared with students.
12. The programmes should further develop their approach to quality assurance and include students as partners in the process beyond benefiting from their input only but involve them in the process of development.
13. USS should carefully analyse the ratio of part time teaching staff for its future strategic development.