

# Increasing International Activity Among Engineering Students



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An Interactive Qualifying Project

submitted to the Faculty of

WORCESTER POLYTECHNIC INSTITUTE

in partial fulfillment of the requirements for the

degree of Bachelor of Science.

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Date:

13 October 2022

Report Submitted to:

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*This report represents work of one or more WPI undergraduate students submitted to the faculty as evidence of a degree requirement. WPI routinely publishes these reports on its website without editorial or peer review.*

## **Abstract**

The Eastern Swiss University of Applied Sciences, or OST, has study abroad rates for engineering students much lower than their desired target of 20% participation. We surveyed OST's engineering and computer science students, and interviewed OST students who had studied abroad. The survey and interview data as well as an OST professor's input helped to pinpoint the crucial factors for why students travel abroad or not. We examined recruiting strategies of successful student exchange programs to provide recommendations to OST.

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## 1. Introduction

Study abroad programs are a common opportunity for university students. The ability to participate in these programs varies depending on factors such as economic availability, access to information, and appropriate coursework. In general, the mobilization of university students has a positive impact on the students' future socially, globally, and academically. It allows students to gain a deeper understanding of other languages and cultures and provides hands-on experience with international networks that they would not have access to on their campus. Engaging with these programs and cultural experiences, in turn, diversifies students' problem-solving skills in a context that enables them to construct solutions with an intercultural perspective. Studying abroad also allows students to reflect on their own national identity, build a network of connections, and learn to adapt to life in a foreign country without the presence of their close friends and family in their home country.

Students' reasons and motivations for pursuing study abroad programs may vary based on academic or cultural background. Some view the prospect of new experiences in a new culture, country, or language, with new connections as enticing. Other students are persuaded by the potential of being independent and developing their personal strengths. Career advancement and academic development through an opportunity abroad by performing studies or research also incentivizes students to be mobile. While several different motivations influence a student's decision to study abroad, certain hindrances can also dissuade them from participating. Many are discouraged by the thought of leaving their life at home - their friends, family, and way of life. Financial difficulties, especially the additional costs incurred through a study abroad program, and the lost opportunity cost of missing out on jobs and internships at home can prove to be too great. Students may also consider the academic timing of a potential study abroad program to be

inconvenient for their course of study and encounter difficulty finding classes that translate directly into transferable credits to be used at their home university.

At the Eastern Switzerland University of Applied Sciences (OST), students and staff are encouraged to spend time abroad. While the capacity for participation is currently limited, the university aims to promote internationalization, one of its eight main strategic goals. The institute offers international programs designed to give its students an experience at a partnering university to participate in another universities coursework or be a part of a research project for a semester. It is also part of SEMP (Swiss-European Mobility Programme), an alternative to the European ERASMUS Program which also offers students the opportunity to study abroad with financial compensation for their studies. Among the students seeking study abroad at OST, engineering students are one of the most underrepresented groups. Their participation in study abroad programs offered by the university remains lower than their peers in other majors and specialties, which the university plans to change with new strategies to promote their mobility.

The OST, being a technical school, recognizes that engineering students and staff are an integral part of the university. The institution also regards its study abroad programs as capable of enriching engineering students' competencies for the future: intercultural communication, exposure to foreign methods of research and technological development, and foreign language comprehension. The OST further recognizes the importance of equipping their engineering students with an international aptitude for the enrichment of their own university. The experiences and expertise brought back from engineering students' foreign expeditions through studies or research enhances the international proficiency of the school and further expands the school's international networking capabilities. The improved desirability of degreed engineers from the OST in the labor market because of improved enrollment in study abroad and



international research programs could also potentially improve the university's reputation among employers - both local and international.

Internationalization is one of the eight strategic goals of OST, which is why having a large percentage of students travel abroad is important to the school. Our mission was to develop strategies that the school could use to get more students engaged and participating in a study abroad program. We researched the benefits of partaking in a study abroad program, surveyed students, had personal interviews with professors, and interviewed students who have traveled abroad. We collected and analyzed data that was used to develop strategies that OST could use to increase the number of students who choose to travel.

## 2. Study Abroad: Literature Review and Analysis

### 2.1 Study Abroad at Universities and its Benefits

#### 2.1.1 Study Abroad and Why It Is Offered by Universities

The concept of study abroad has existed for centuries. In the modern context, study abroad has become a means of promoting international mobility and intercultural communication through university studies ([Cushner & Karim, 2004](#)). It is an opportunity to gain experience abroad either through classes, internships, co-ops, service trips, or research ([Parkinson, 2007](#)). While students are abroad, they must adapt to their local environment and have the chance to interact in a language they may only have had experience with within the classroom. Through study abroad, universities believe they can increase students' knowledge in a particular subject area while fostering their independence and cultivating their intercultural competency ([Sachau, Brasher, & Fee, 2010](#)). An appealing international program can also prove effective in convincing students to attend a university and can aid the university to gain revenue through increased student enrollment. Furthermore, a properly organized study abroad program can prove effective in strengthening students' education while providing positive financial outcomes for the university ([Williamson, 2010](#)).

#### 2.1.2 How Study Abroad is Offered by Universities

There are several different ways students can participate in a university study abroad program, including exchange programs, university-led programs, mentor-based travel, and service learning. While each study abroad format offers its own benefits and challenges, they allow for university students to be involved internationally ([Anderson et al., 2015](#)). The formats

offered to students by universities may vary depending on the objectives of the school for its study abroad programs ([Parkinson, 2007](#)).

#### 2.1.2.1 Exchange Programs

Exchange programs are the most traditional form of study abroad, where students of different universities take courses in each others' institutions ([Parkinson, 2007](#)). This type of program can be done directly through a university's partner network or by applying as a "free mover" - a student who studies at a foreign institution for 1-2 semesters - to the foreign university of their choice (["Outgoings Technik", 2022](#)). The option to apply as a free mover provides a more open-ended and independent experience with very few limitations on what subjects a student can choose to study; however, it also requires students to coordinate their own finances.

#### 2.1.2.2 Short-term University-Led Programs

Students may also choose to enroll in a study abroad program arranged by the university whose duration is less than the traditional semester. Some universities, such as the University of Edinburgh in Scotland, offer students the opportunity to go abroad during the summer period in the form of enrollment at a summer school, research university, or work-placement program ([University of Edinburgh, 2022](#)). Short-term faculty-led programs are another option for students, which involve pre-travel immersion classes before travel, as seen in the University of Hartford's programs in Northern Spain, Italy, and London ([University of Hartford, 2022](#)). The University of Texas at Austin also gives the opportunity for students to take courses at an overseas location for four weeks from May to June, led by a UT faculty director ([University of Texas at Austin, 2022](#)).

### 2.1.2.3 Extensions

Extensions are a form of study abroad, where students can attend a university's campus in another country, offering the chance for students to explore the local culture without having to face adaptation to structural changes of enrolling in a different university ([Parkinson, 2007](#)). Such programs are offered by the University of Maryland and allow for seamless transferability of credits for courses taken at the universities' locations in Europe and Asia (University of Maryland, 2022).

### 2.1.2.4 Service-Learning

Project-based or service learning, which is emphasized by Worcester Polytechnic Institute, immerses students into bridging science and society through interdisciplinary research projects ("[Interactive Qualifying Project](#)", 2022). Study abroad may also be offered as a foreign internship or co-op. Internships and co-ops are particularly applicable to engineering students who can gain industry experience to promote their future careers ([Bolli, Caves, & Ostwald-Egg, 2021](#)). Work done in internships and co-ops abroad often has less structure than university exchanges but provides students with an insight into real-world business issues involving teamwork, design, and communication ([Parkinson, 2007](#)).

## 2.1.3 Benefits for Students who Study Abroad

Students benefit from study abroad programs by developing intercultural competence, forming new relationships, and advancing their career potential and global relationship networks ([IES Abroad, 2022](#)). Intercultural competence is defined as "a set of cognitive, affective, and behavioral skills and characteristics that supports effective and appropriate interaction in a variety of cultural contexts" ([Anderson et al., 2015](#)). During their time abroad, students spend notable time adjusting to the local surroundings, culture, and language. Traveling without the

presence of students' family and certain close friends grows students' self-reliance and can increase their self-confidence ([Schau, Brasher, & Fee, 2010](#)). Adaptation increases students' intercultural competence and aids them in developing communication skills by forming a variety of styles of relationships ([Harder et al., 2015](#)). Furthermore, studying abroad creates new opportunities for friendships, which have proven to have a positive impact on the human brain and can help improve mental health ([Güroğlu, 2022](#)). Interacting with local students and professors improves students' grasp of the local language, which they may have only previously encountered in the classroom ([Vodovozov & Raud, 2021](#)). Spending time in a foreign environment during study abroad also nurtures flexibility and listening skills ([Harder et al., 2015](#)). Some of these attributes acquired through study abroad - flexibility, ability to observe and listen, open-mindedness, and risk-taking - rank among those most desired by employers, including engineering professionals ([Trooboff, S., Vande Berg, M., Rayman, J., 2008](#)).

For engineering students, working on projects in multinational teams through internships, co-ops, or project-based study abroad programs allows them to gain a sense of individual accountability and collaboration with project members from various cultures ([Escudeiro et al., 2020](#)). While students can benefit from these programs and grow personally and professionally, they also need to overcome challenges that could prevent them from participating in an abroad experience ([Anderson et al., 2015](#)). For this reason, they must consider their aspirations in their ability to participate in a study abroad program.

## 2.2 Motivations and Challenges Among Students Engaging with Study Abroad Programs

When evaluating the possibility of attending a study abroad program, most students will weigh a range of benefits and challenges associated with the programs available at their university. Students cite a variety of motivations for pursuing studies in a foreign institution, including enlightenment of world cultures, personal development, and career development ([Anderson et al., 2015](#)). Among the desires designated as students' opportunities for world enlightenment are their willingness to experience life in another country and develop an intercultural understanding ([Krzaklewska, 2008](#)). Students also may note that they believe they can accelerate their personal development during study abroad by enhancing their foreign language skills, gaining maturity, and increasing self-confidence. In addition to achieving their personal goals, students see their future career prospects improving over the course of a study abroad program ([Tamilla & Ledgerwood, 2018](#)).

### 2.2.1 Increasing Cultural Competencies

Students' desire to be enlightened by foreign cultures and a new environment motivates their potential decision to study at an institution abroad. Foreign immersion allows students to develop their intercultural competencies. By interacting with a culturally different environment, students experience living in locally-provided accommodations, interacting with foreign students and professors, and learning local practices and customs ([Bandyopadhyay, 2015](#)). Living in another country also allows students to compare their experiences from another country to their own culture and develop a deepened understanding of their own national identity ([Dolby, 2004](#)).

A program that aims to increase the travel of students is the European Community Action Scheme for the Mobility of University Students (ERASMUS) which is specifically aimed at university students in 27 different European countries. They aid students financially from their bachelor's degree all the way through their doctoral degrees to support up to two years of studying abroad depending on the degree the student is seeking ([ERASMUS, 2022](#)). Studies on students in the ERASMUS Program indicated that having new experiences, living in a foreign country, learning about different cultures, and meeting new people during their studies abroad qualified as 'very important' for more than 80% of the participants. Interviews conducted by the ESN (Erasmus Student Network) revealed that "having new experiences" in a foreign culture and experiencing how life "looks somewhere else" were common themes among the students from Italy, Romania, Germany, Denmark, France, Greece, and Poland who participated in the interview process ([Krzaklewska, 2008, p.10-11](#)). A wide majority of exchange students (84.6%) planning to study at Brno University are also expected to enhance their historical and cultural competence during their time abroad ([Tsareva, Khafizova, & Semushina, 2022](#)). Student immersion in a foreign environment, and world enlightenment, therefore proves not only motivation but a priority for students willing to study abroad.

## 2.2.2 Personal and Professional Improvement Opportunities

### 2.2.2.1 Personal Improvement

Students consider the prospect of personal improvement and foreign language skills as key motivations for pursuing studies at an institution abroad ([Osler, 1998](#)). The opportunity to personally grow was valued by students and ranked second behind world enlightenment in a study performed on students participating in the Motivation to Study Abroad (MSA) questionnaire developed by Anderson and Lawton at the University of Saint-Thomas, Minnesota

(Anderson et al., 2015). Among personal improvement factors, the enhancement of a student's foreign language skills was considered most valuable to students. Networking with new friends, families, and faculty of a foreign institution provides an excellent opportunity for students' linguistic enhancement (Tamilla & Ledgerwood, 2018). A study in 2005 of 10,976 students from the ESN (Erasmus Student Network) found that ERASMUS students rank their improvement in a foreign language as the most important part of their personal development, with 90% claiming it was 'important' and 88% calling it 'very important' (Krzaklewska, 2008). The ESN study from 2005 focused on students' motivations and their overall experience when studying abroad (See Figure 2.1).

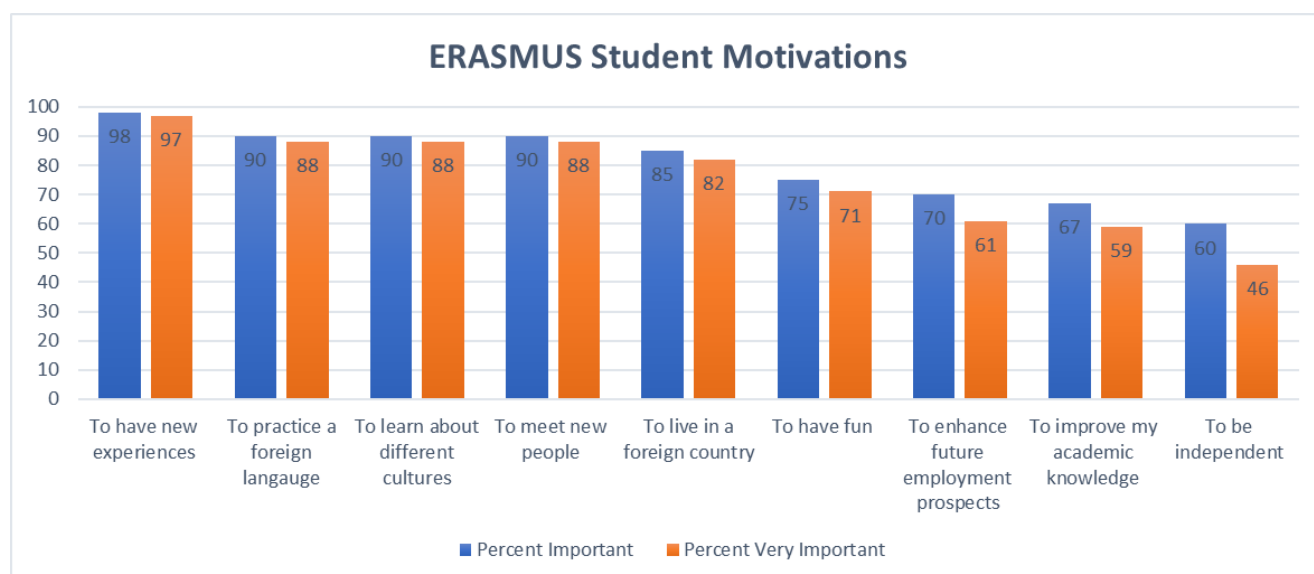


Figure 2.1 Adapted from Krzaklewska, E. (2008).

A study in the UK that surveyed 560 students enrolled in undergraduate classes in 2010 concluded that (see Figure 2.2) 58.9% of surveyed students deem personal development as 'very important' (58.9%). In a study of 13 students from Kazan University (Russia) selected for study abroad in 2021, 94.3% of students identified foreign language enhancement as a top priority



during their study at Brno University of Technology. Another 69.2% of students from the same study ranked improvement of communication skills as a top priority for their self-improvement during the time of their studies abroad ([Tsareva, Khafizova, & Semushina, 2022](#)). While foreign language enrichment improves a student's adaptability to their environment, students become more independent and confident as a result of long periods away from their families and friends and their home country. Among ERASMUS students in the 2005 ESN survey, the development of confidence was identified as a motivation for ERASMUS students, the majority of which (60%) cited becoming independent as one of their key motivations for studying abroad ([Krzaklewska, 2008](#)).

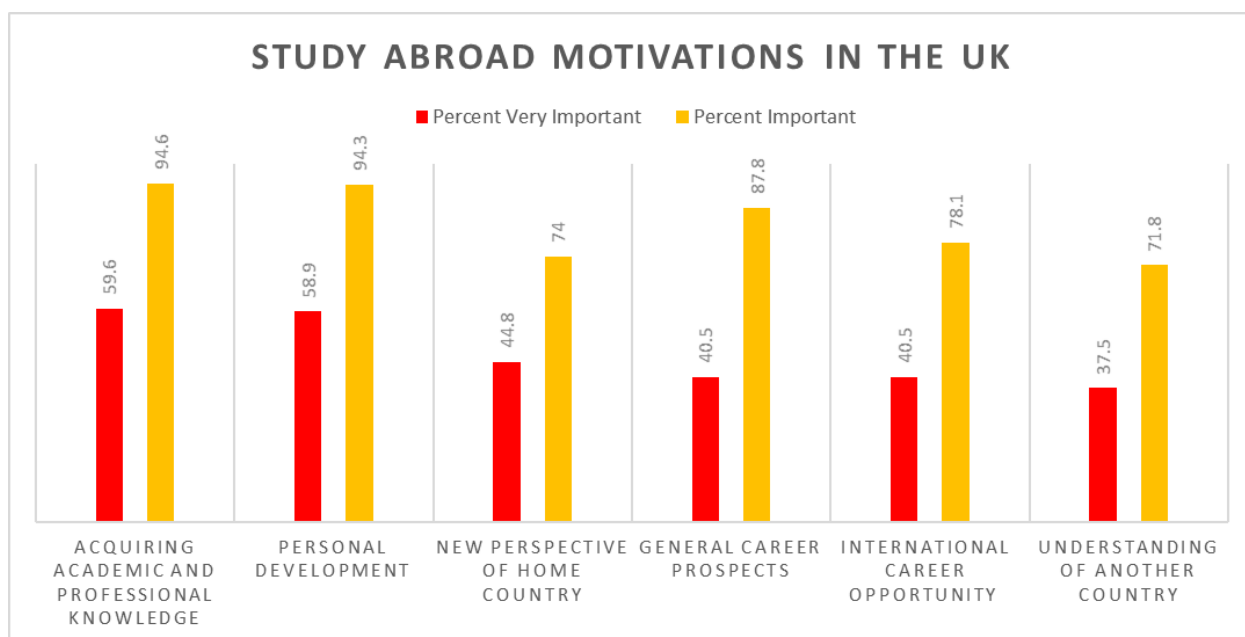


Figure 2.2 Adapted from [Findlay, A. M., King, R., Geddes, A., Smith, F., Stam, A., Dunne, M., Skeldon, R., & Ahrens, J \(2010\)](#).

### 2.2.2.2 Professional Development

The opportunity for students to improve their career prospects at home and abroad motivates students to pursue studies in an institution away from their home country. Students are more likely to attend abroad institutions if they know ahead of time that a program has been found to enhance prospects with employers ([Tamilla & Ledgerwood, 2018](#)). Some of the attributes most desired by employers, such as flexibility, ability to observe and listen, open-mindedness, and risk-taking, are found to be most enriched by a study abroad experience ([Trooboff, Vande Berg, Rayman, 2008](#)). Improvement of career prospects was listed as a priority for most ERASMUS students - 70% considered this to be an important motivation ([Krzaklewska, 2008](#)). For engineering students in particular, studying abroad presents the opportunity to prepare for the workplace of the present and future.

### 2.2.3 Inhibitors to Participation

The factors preventing a student's decision to study abroad can most often be attributed to some combination of psychological, socioeconomic, academic, and organizational factors. Psychological problems preventing a student's international mobility relate to detachment from their social environment ([Netz, 2015](#)). Studying abroad presents socio-economic challenges for students, who miss prospects at home, such as internships and work, in their home country and consequently must weigh the additional financial costs of living in another country with lost opportunity ([Escudeiro et al., 2020](#)). Students also express concern about the possibility of studying abroad inhibiting their academic progress ([Netz, 2015](#)). Transferability of credits between institutions has been demonstrated to pose issues for students, particularly for those with an engineering background ([Van Damme, 2001](#)). Surveying the potential sacrifices made by

students at home to study abroad reveals the significance of well-executed preparation for the difficulties of adaptation. With regards to a student's academic progress, obstacles in the engineering curriculum, transferability of credits, and misalignment of universities' schedules explain hardships associated with the coordination of a study abroad program for engineering students.

#### 2.2.4 Social Concerns

One of the main reasons university students reject the opportunity to study abroad is fear of leaving their friends, families, and way of life in their home country. Students have been found to abandon opportunities to study abroad when thinking about missing their family, friends, and way of life for an extended period abroad ([Escudeiro et al., 2020](#)). In particular, students who have a close relationship with their family and friends from their home country tend to study abroad less. The comfort of their environment is one they often do not want to leave and is therefore seen as another obstacle to their likelihood of studying abroad ([Netz, 2015](#)). Rapid adjustment to a foreign culture may take significant emotional and attitudinal adjustment for students who have not had considerable international experience ([Cushner & Karim, 2004](#)). Fear of communication in another language prevails among students as a major factor of discomfort, as insufficient comprehension of a foreign language undermines students' local adaptation ability. In addition to fears of abandoning their domestic environment, students are also found to be skeptical of the operational integrity, transportation, and organizational issues of semester abroad programs. A study based on 13 students from Kazan University studying abroad in Brno, Czechia revealed that 7 of those students had fears related to transport and organizational mishaps creating personal risk during their time away ([Tsareva, Khafizova, & Semushina, 2022](#)).

### 2.2.5 Financial Feasibility

The economic and financial feasibility of a potential semester abroad remains another key deterrent to students' international mobility. Students regard the financial cost of international mobility as a significant reason for discouragement in seeking internships and studies abroad. The opportunity cost involving the risk of losing local job and internship opportunities demonstrates another reason for students to avoid studying abroad ([Escudeiro et al., 2020](#)). Internships comprise a fundamental part of a student's professional development during their time at university, as students learn essential skills for the future that are transferable to their future work environment ([Bolli, Caves, & Ostwald-Egg, 2021](#)). It has been found that financial support for studies abroad provided by programs such as [ERASMUS](#) often proves insufficient in compensating for opportunity costs missed at home and the financial burden of mobility. These economic costs particularly discourage students of Swiss and German universities, whose opportunities presented at home often seem to exceed the investment in a study abroad program ([Netz, 2015](#)). To study abroad, students often need to obtain a visa or permit and find housing in the vicinity of their university. It has been found that students from other countries struggle more with visa issues, housing, and finance than those from neighboring countries and existing partnerships - like ERASMUS ([Vodovozov & Raud, 2021](#)).

### 2.2.6 Academic Program Misalignment

Issues relating to the academic timing, suitability, and course load of semesters abroad also prevent students from being mobile during their studies. This remains particularly true for engineering students who are subjected to very rigorous and rigid curricula with little room for adjustment in their 3-4 year undergraduate study timeline, as evaluated by a study on US engineering students ([Carlson, 2007](#)). In addition, engineering students are reluctant to study

abroad if it delays their graduation, as the demanding timeline of their studies often doesn't provide adequate flexibility intended for international mobility ([Parkinson, 2007](#)). A semester abroad usually must be accounted for in the first year of undergraduate studies and often takes place in the following years, when students might be interested in other opportunities such as internships in their home country ([Escudeiro et al., 2020](#)). Some members of the academic community underscore the risks of a study abroad program for engineering students. Pradeep Khosla, dean of engineering at Carnegie Mellon University, claims “It is impossible, literally, for every engineering student to go abroad for one semester in their career” because, he claims, the American higher education system is not capable of taking in that number of students ([Carlson, 2007](#)).

Statistics for the participation of engineering students in study abroad programs support Khosla's claim. At the University of Maryland in an undergraduate class of 25,857 students, engineering students account for only 5.2% of all undergraduates and just 3% of students who take one or more semesters abroad. Students with a focus on the humanities and arts, however, represent 22% of undergraduates yet account for 44% of all students who go overseas ([Carlson, 2007](#)). In the years 2019 to 2020, 3,330 students participated in the Swiss-European Mobility Programme (SEMP). 2,361 of these 3,330 were completing their Bachelor's and 965 were in Master's studies of various concentrations at their home university. However, only 13.8% of those enrolled in SEMP were of Engineering, Manufacturing, or Construction background ([Swiss-European Mobility Programme, 2020](#)). Still, credit transferability presents challenges for engineering and non-engineering students alike, as different standards for teaching methods and correlation between corresponding courses prevent credits from being recognized between different universities ([Van Damme, 2001](#)). Differences in teaching styles and presentation of

material also prove challenging for students to adapt. In European schools, foreign students have been found to spend less time on their studies and absorb the discipline slower than their local companions ([Vodovozov & Raud, 2021](#)). In addition to teaching styles, the timing of university semesters varies around the globe. Coinciding university schedules result in students having to make sacrifices on their path to graduation at their home university, which inhibits overall mobility ([Parkinson, 2007](#)). Although building global engineering programs at universities can prove to be a challenge, the increasing flow of information and people globally necessitates expanded international collaboration, which can be facilitated through study abroad programs and work opportunities abroad ([Lewin, 2009](#)).

## **2.3 Study Abroad at Eastern Switzerland University of Applied Sciences**

In 2010, Switzerland was among the countries in Europe that had more students coming to the country to study abroad than students leaving to study in other countries ([Grabher et al., 2014](#)). As one of the numerous engineering universities in Switzerland, OST offers opportunities for its students to study abroad. These programs involve the students traveling to partnering universities which are available to both undergraduates and graduates and can be as short as a semester long to up to 1 academic year long. OST has a number of partner universities associated with different departments in the university. In the engineering school, students have the option to complete a semester abroad at various universities in Europe as well as Brazil, China, Singapore, Mexico, and the USA. ([“New OST Partner Universities”, n.d.](#)). Students are not limited to only these locations and can choose other universities to study abroad as a free mover ([“International Office School of Technology”, n.d.](#)). Participation in the [free mover](#) program has

remained low in past years (2020-2022), with only 3 of 55 (5.4%) of students traveling abroad electing to go abroad as free movers (OST, 2022).

Another option to study abroad through OST involves a study abroad program within Europe which can be 3 months to 12 months. Through the Swiss-European Mobility Program (SEMP), students remain enrolled at OST and do not have to pay the tuition and fees at their host university ([“Outgoings Technology”, n.d.](#)). Through the SEMP program, there is also an opportunity for scholarships, and the amount paid is set in advance by the Swiss government. Most students at OST have gone abroad through SEMP. A graphic given from OST details that 41 of 55 students who traveled abroad from OST were in SEMP for academic years 2020/21 and 2021/22 (See Figure 2.3). Finally, students also have an opportunity to complete an internship abroad with the International Association for the Exchange of Students for Technical Experience (IAESTE), or through European Student Placement Agency (ESPAUK) if the student is specifically interested in studying in the UK ([“Outgoings Technology”, n.d.](#)). However, as our sponsors have identified for this project, the participation rates in study abroad programs for engineering students in the School of Technology at OST has been modest in comparison to their peers in other concentrations. Although the number of engineering students involved in study abroad has risen, they only comprised 2 of 36 (5.5%) of students studying abroad in the 2020/2021 school year and 7 of 49 (14.3%) in 2021/2022. This is still significantly less considering engineering students encompass a significant amount of the student body population as a whole (See Figure 2.4).

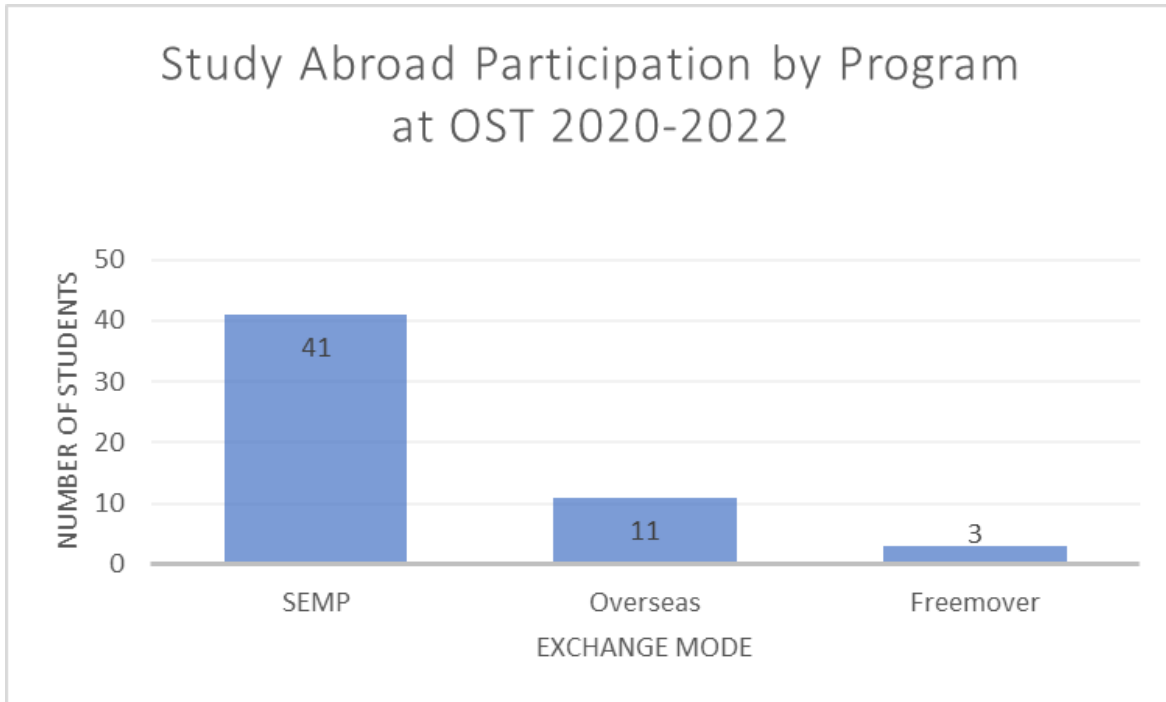


Figure 2.3: Adapted from information given from OST.

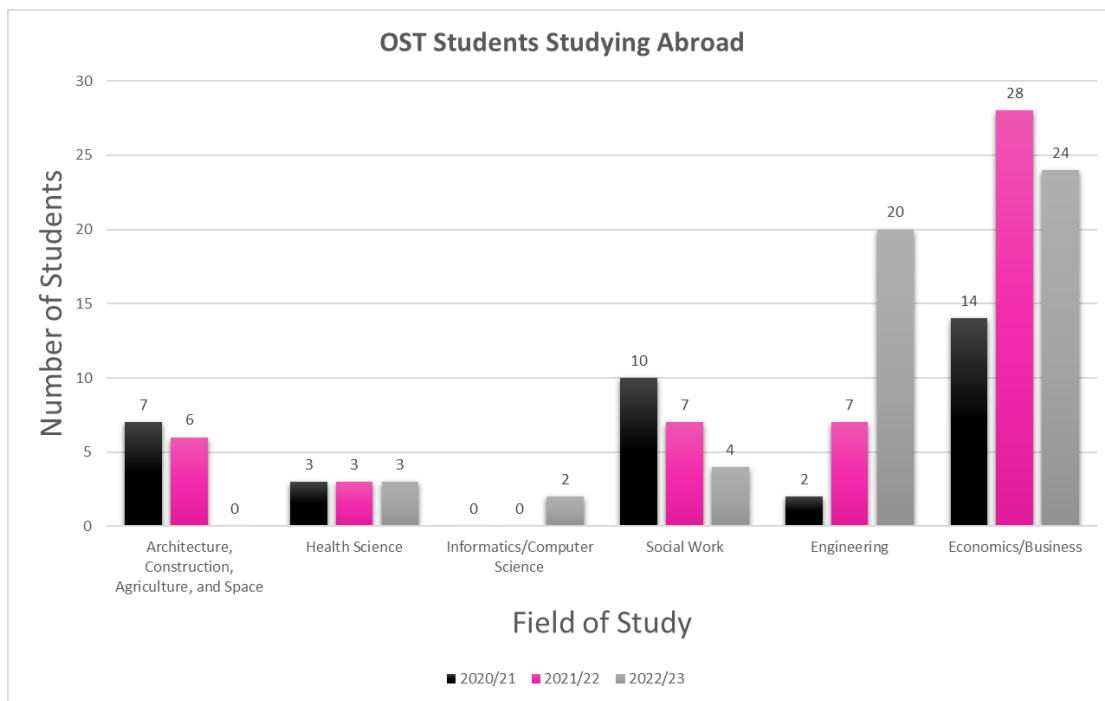


Figure 2.4: Graphic showing participation of students from different academic backgrounds at OST. Note: Data from academic year 2022/23 only includes the fall semester



### 3. Methodology

The goal of this project was to investigate why engineering students at the Eastern Switzerland University of Applied Sciences (OST) exhibit comparatively low participation rates in the school's study abroad program, and to provide a set of recommendations to help increase enrollment of engineering students in the programs.

The following objectives designed to support our goal include:

- Assess how the OST student expects to benefit from an ideal study abroad program
- Understand the external influences in the student's decision to study abroad, specifically engineering students
- Evaluate the experiences of engineering students who have attended exchange programs at the OST
- Develop a recommendation for the OST to help increase participation rates among engineering students

### **3.1 Evaluating the students experiences of exchange programs at the OST**

Gaining insight from students who completed participation in the OST study abroad programs helped us identify their motivations to participate as well as understand important aspects of their experiences. Understanding student perspectives toward external influences, such as financial costs, opportunity costs, and language barriers allowed us to pinpoint areas of concentration for an effective strategy for the university to implement in helping students travel abroad with minimal obstacles. We asked the students to assess their experiences with the current programs offered by the university, how they were advertised to them, and their applicability to the student's academic plans in order to gather a consensus on current aspects of programs that should be improved. To improve existing programs, we enquired about how the students would see a study abroad program ideal for them, including financial expenses, availability of appropriate language courses, and desired location of study. The ability to figure out ways to incorporate these student ideals into the study abroad program where appropriate could have a large benefit to the perceived value of the programs. With this deeper understanding, the specific components of a successful study abroad program for students of different academic backgrounds became more evident and allowed us to focus on improvements that would increase engineering students' participation.

In addition to the students' input, we also reached out to professors to gain an understanding of how study abroad programs are administered and how involved the university has been in the improvement and diversification of current study abroad programs. Professors were asked about possible benefits that studying abroad would give to students as well as difficulties encountered with the implementation of such programs.

### 3.1.1 Data Collection

The first form of data collection was a survey, which was sent out through a mass email to the student body as well as through personal interaction with the students who completed it on an electronic device. A sample size of 30 responses from students of different fields of study was targeted in this case. The survey was created using the WPI Qualtrics software and contained a variety of multiple choice as well as open-ended questions to target the student body at OST. In order to keep the survey response rate higher, the survey provided short, succinct questions with quantitative results for more comprehensive data (See Appendix D). Data was collected on the students' identities, fields of study, bachelor's or master's degree candidacy, their experience with study abroad programs, assistance from the university, and how they would optimize certain aspects of existing programs. By using a survey, the responses could be received in a short due space of time and allowed for a more straightforward comparison of answers.

Faculty who were involved with study abroad programs at the OST as well as students who had already participated in study abroad programs were interviewed about their experience. Using a set of semi-structured questions, the interviews allowed students to be more open about their experiences and expand on their thoughts about the study abroad program at OST. Appendix B discusses the questions students faced during their interviews.

Due to the lack of availability and interest of students who have never studied abroad to participate, the semi-structured interviews purely targeted students who had previously studied abroad. The questions were focused on past experiences with the goal of undermining the critical reasons for choosing to study abroad at OST. The interviews were compiled and analyzed for patterns and common themes.

### 3.1.2 Data Analysis

The survey results given by responses of students from the university were primarily grouped by the student's field of study and their corresponding academic standing - either bachelor's or master's. By analyzing students' responses in categories, the demands of groups from different academic programs were taken into account in accordance with the goal of improving the participation of engineering students in study abroad programs. The survey allowed for concrete quantitative responses on students' requests for future student study abroad programs, which clarified what an improved study abroad program would entail. The data was therefore analyzed to indicate the financial support, curricular support, integration into a program of study, and accreditation demanded from students to encourage their participation.

The transcripts from interviews with students and professors of the OST were analyzed and compared with our review of existing literature focusing on the benefits and criticisms of study abroad programs performed in our preliminary research for this study. We organized our data based on the categories related to the student's experience with key elements of their experience abroad, including both the challenges they face and the benefits from their time abroad and program details. These categories included financial and economic difficulties, challenges with language barriers, academic timing, and any personal improvements, including confidence, independence, language skills, and career readiness. Based on this analysis, we synthesized our data collected in the field with existing scholarly research in order to link the benefits and challenges most closely related to a student's participation in a study abroad program.

### 3.1.3 Research Limitations

When collecting data in an interview format, wording bias has been considered to be a serious issue. Ensuring questions were properly proofread for biases was a priority before

conducting the interviews. Secondly, non-response bias was an issue because the survey was sent out to students. According to statisticians, the lack of neutral responses could have resulted in a slightly more bimodal opinion from the survey responses than that of the population.

A limitation specifically posed by semi-structured interviews was the tendency for respondents to have social desirability bias in their responses. In order to mitigate social desirability bias, the participants must feel comfortable while sharing their perspectives. Therefore, the interviewers remained focused and avoided signaling any bias in the form of physical or verbal cues. The flexibility of a semi-structured interview can also result in low validity of responses. As interviewers are allowed to deviate from the order of predetermined questions, comparing responses from different respondents could have potentially proved challenging, but this was mitigated by a standard approach to analyzing the transcripts.

It was crucial to create a survey with a mixed structure between open-ended and closed-ended questions with a strong emphasis on multiple-choice questions or questions that rank importance. A survey that is strictly free-response might lack a clear majority vote from students on the most important part of the study abroad program. A survey that is strictly multiple-choice or ranks importance might lack the ability to receive information from a student. This combination ensured that a student could clearly state what they believe while still leaving the ability to assess the data quantitatively. Non-response bias has often been an issue with digital surveys and needed to be taken into account when analyzing the data. Oftentimes, students with a neutral experience may not respond to the survey, as they may believe they do not have valuable information to share. Alternatively, a student who looked for high levels of educational value may have pursued other forms of high-level education and may not have had time to respond to the survey. Although factors like these could not be accounted for in data collection, they were discussed in data analysis.

One main problem faced by performing confirmatory research was the potential lack of participants. To address this, emphasis had to be placed on the concept that our study was being performed to assist the university in developing better experiences for students interested in spending time abroad and that their personal information would not impact their ability to participate in the program. Another important issue to address is the elimination of any bias when asking either the structured or more open-ended segment of the interview. Interviewers must attempt to stay neutral in their stance on issues and ensure that participants deliver unbiased answers. The style of semi-structured interviews could have also undermined the relevance of certain responses on external factors due to respondents' social desirability bias, in which they fear interviewers' attitudes towards their stances. This was addressed by emphasizing the anonymity of the research being done on the participants and disclosing to them the use of any potential information that they may relay through their responses.

### **3.2 Synthesize Results and Develop A Recommendation for OST**

The final objective combined the results that were found in the previous objectives and produced an in-depth report to the international students' department at the OST. This step presented our research and findings of this project in a presentable format, allowing for a proper review from the OST's international program. Based on the findings of the project, we developed a list of recommendations to give to the OST to improve their abroad programs to increase international activity among engineering students. With luck and positive feedback, these recommendations could be further put into action in future years.

### 3.2.1 Putting Gathered Data to Use

We synthesized our findings, grounding them in other abroad programs that are offered, and saw what can be improved to make them more available. By contrasting the data to other studies and enrollment information we found online regarding other universities, we attempted to discover patterns, which aided in providing more influential suggestions that assisted in study abroad enrollment. We evaluated what engineering students wanted to see in an ideal study abroad program to determine what needed to be prioritized to make the program more appealing to them. External influences out of the students' control also were addressed so that the school could make the program more accessible. Using this compiled data, we identified how to compile a study abroad program in the future and implement improvements on existing programs. We compiled a list of suggestions of possible ways to reach out to students better and eliminate obstacles many students face when considering whether to study abroad. We made suggestions with a focus on input gathered from engineering students, with the possibility of exploring a program between OST and WPI. Possible implementation of these strategies was done using our own intuition as well as professors' advice, allowing us to make our suggestions more realistic and implementable.

## 4. Our Findings

### 4.1 Survey

A survey about a student's experience with study abroad programs at OST was sent to all the students via email, a total of about 1,200 students. The survey primarily targeted students in the field of Engineering. Demographic information such as gender and age and general information was collected regarding the program of study, specialization, and whether the student was part-time or full-time. The survey also catered to different questions depending on whether a student had previously studied abroad through OST. For the students who had not previously participated, the survey gauged their level of knowledge and interest in the existing OST programs. The students were also asked about any concerns they may have about choosing to study abroad such as financial ability, social deterrents, and language abilities. The questions for students who had studied abroad were more centered around their feelings about their experience and their motivations behind choosing to study abroad.

#### 4.1.1 Students Without Study Abroad Experience

The majority of students recorded as not having previous study abroad experience reported on average that they either knew little (69.4%) or nothing (25.9%) about study abroad programs at the OST. However, almost half (45.9%) of the respondents marked themselves as interested in potentially studying abroad. Consequently, it was seen from the survey that only 25% of students who indicated an interest in study abroad agreed and only 8% strongly agreed they knew how to get started in the process of enrolling in a study abroad program at the OST. The large percentage of students interested in studying abroad as well as the low percentage of those well-informed about



study abroad and knowledgeable of the initial process involved emphasized the need for a better distribution of knowledge about study abroad programs within the university.

The survey revealed that the opportunity to travel, proper academic timing, and the ability to transfer credits from the host institution of the study abroad program were the main motivators behind interest in study abroad programs at OST. A majority of overall participants without study abroad experience in the survey agreed (32%) or strongly agreed (49%), with almost all students interested in study abroad having agreed (18%) or strongly agreed (77%) that travel is enjoyable to them. Alignment with academics proved to be another key aspect influencing students' interest in attending a study abroad program. While only 21% of students with no interest in study abroad agreed they would be interested in a program that did not conflict with their academic schedule, exactly half of the overall previous non-participants and 60% of interested students considered the academic timing of study abroad to be important. Furthermore, 58% of overall non-participants and 60% of interested students claimed the opportunity to earn academic credit would interest them in a study abroad program and 63% of those uninterested were neutral on whether this elevated their interest in study abroad programs.

From the 94 responses received in the survey from students who had not yet participated in study abroad, the major deterrents to participating in a study abroad program were found to correspond to those identified in our literature review: financial feasibility, social concerns, and misalignment with the student's academic schedule. The leading concern for students regarding study abroad programs was found to be the entailing costs. Exactly half of the respondents (47 of 94) determined the lack of financial resources to be one of their main concerns (See Figure 4.1) and only 29.4% of students demonstrated they were willing to spend 1000 Swiss Franc or more per month while abroad (See Figure 4.2). Closely following financial drawback was the concern students had

with regards to leaving behind their social circle, namely friends and family (38.7%) (See Figure 4.1). Another social deterrent for students was the potential language barrier in the host country of the study abroad institution (25.5%) (See Figure 4.1). Some students in the survey even revealed that study abroad would not allow them to pursue their hobbies at home or even maintain a healthy relationship with their partner.

When we identified the main motivators for students at OST to study abroad, one of the primary persuading factors was the possibility to integrate a study abroad program into a student's schedule and transfer any corresponding credits earned. Consequently, this proved to be a major concern for students when reporting their worries and deterrents regarding study abroad programs. For students surveyed, the central concern (35.1%) with respect to the misalignment of a study abroad program in their academic schedule was quitting a job in Switzerland (See Figure 4.1). A notable percentage of the overall respondents (28.7%) viewed the transferability of credits as a major worry when considering study abroad programs. Almost a third of overall participants (29.7%) were unsettled by the possibility of prolonged graduation. An additional 14.9% of students in the survey even indicated insufficient study abroad program structure from OST.

In order to identify a more desirable study abroad program for OST students, our survey allowed for participants to input their preferred study abroad format, destination, and even language. Respondents from all fields of study revealed they would most prefer study abroad programs offered in the format of a semester abroad, short-term program, international project, or bachelor/master's thesis abroad (See Figure 4.3). Engineering students excluding those of Computer Science background from the same group of 94 respondents indicated the same selection for their preferred study abroad format, yet were more inclined towards completing an international project or internship abroad than their peers in other fields. Among preferred languages, English was most

selected and even twice as much as the main language of instruction at OST - German (See Figure 4.4). Furthermore, the most preferred study abroad locations among students were primarily English-speaking areas of the world - Europe (62), North America (61), and Australia and New Zealand (58) (See Figure 4.5).

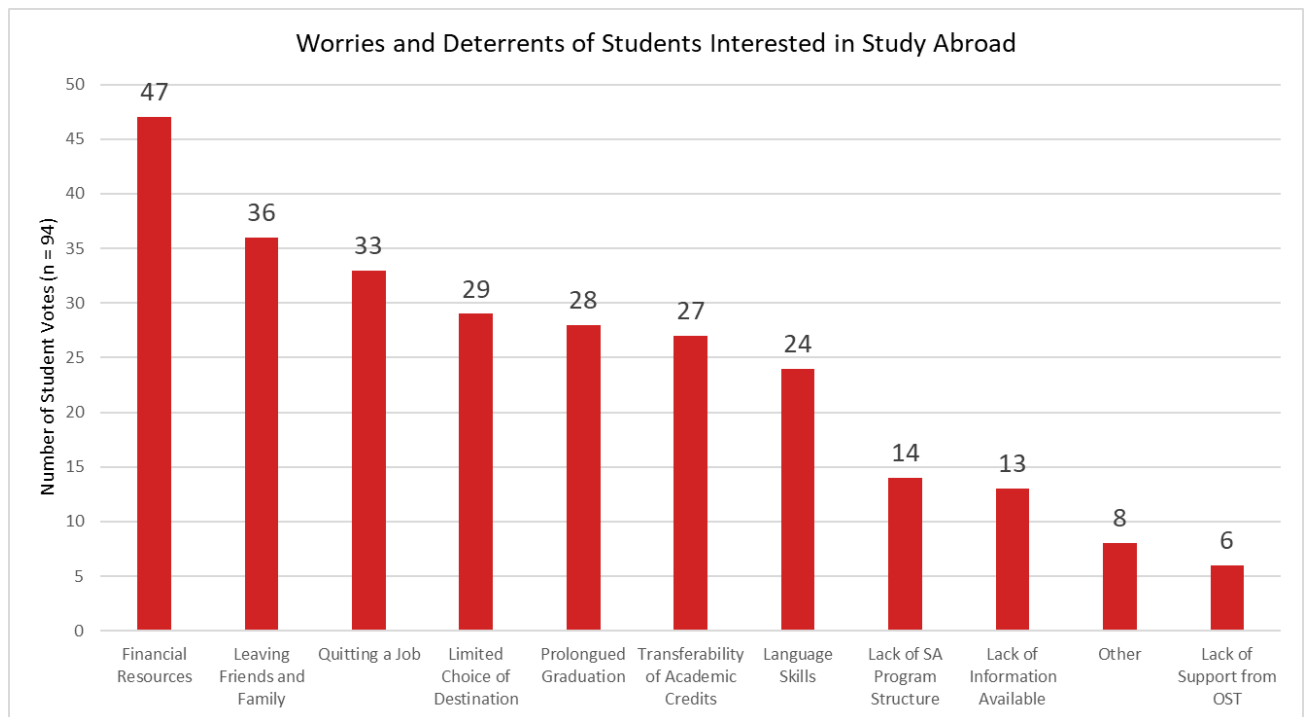


Figure 4.1: The worries and deterrents for OST students considering study abroad

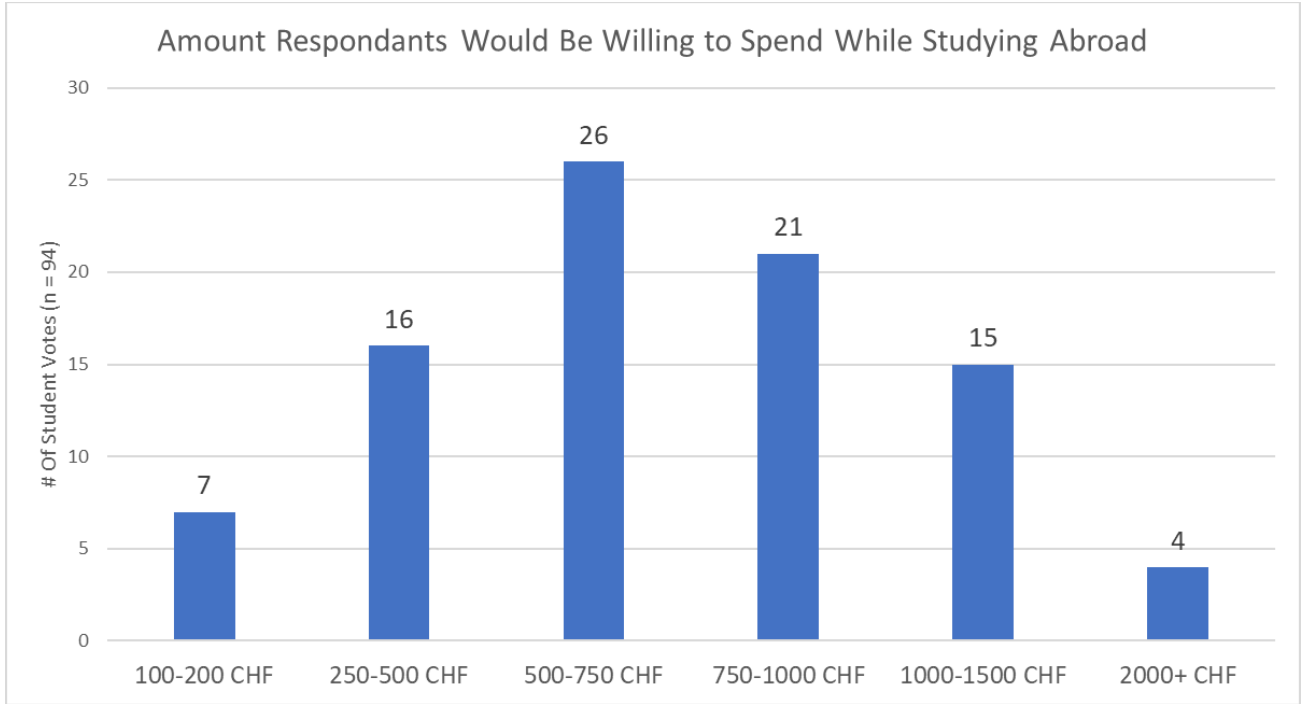


Figure 4.2: Budget range for respondents of the survey

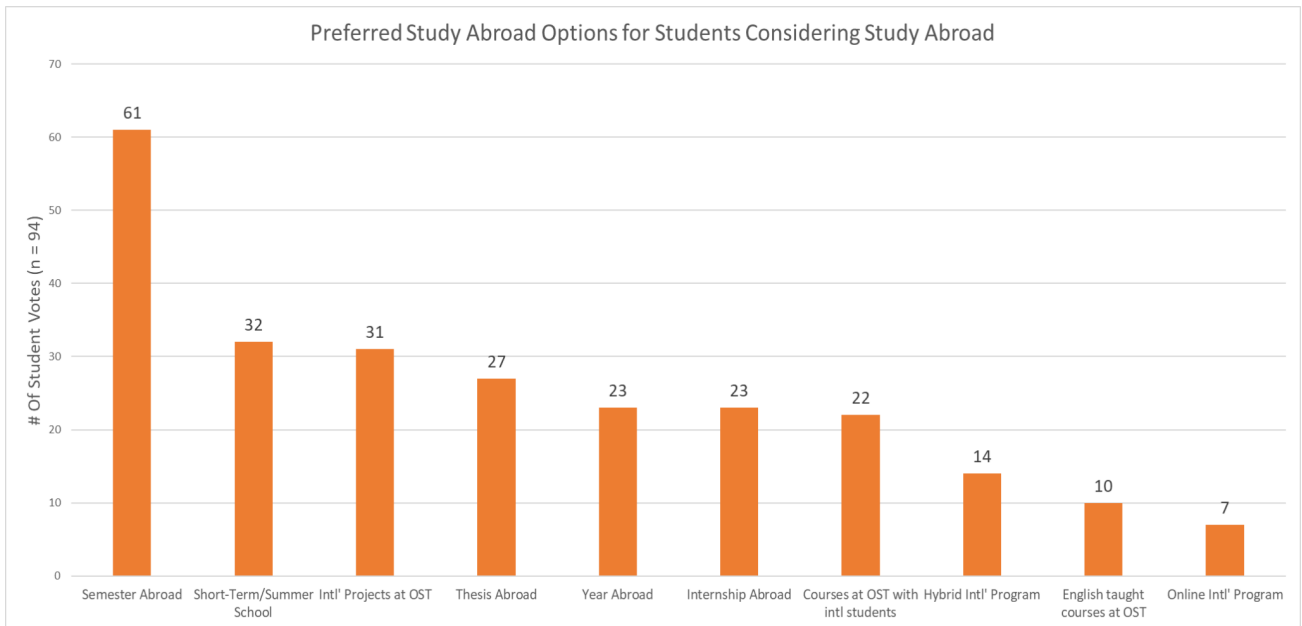


Figure 4.3: The preferred forms of study abroad for OST students.

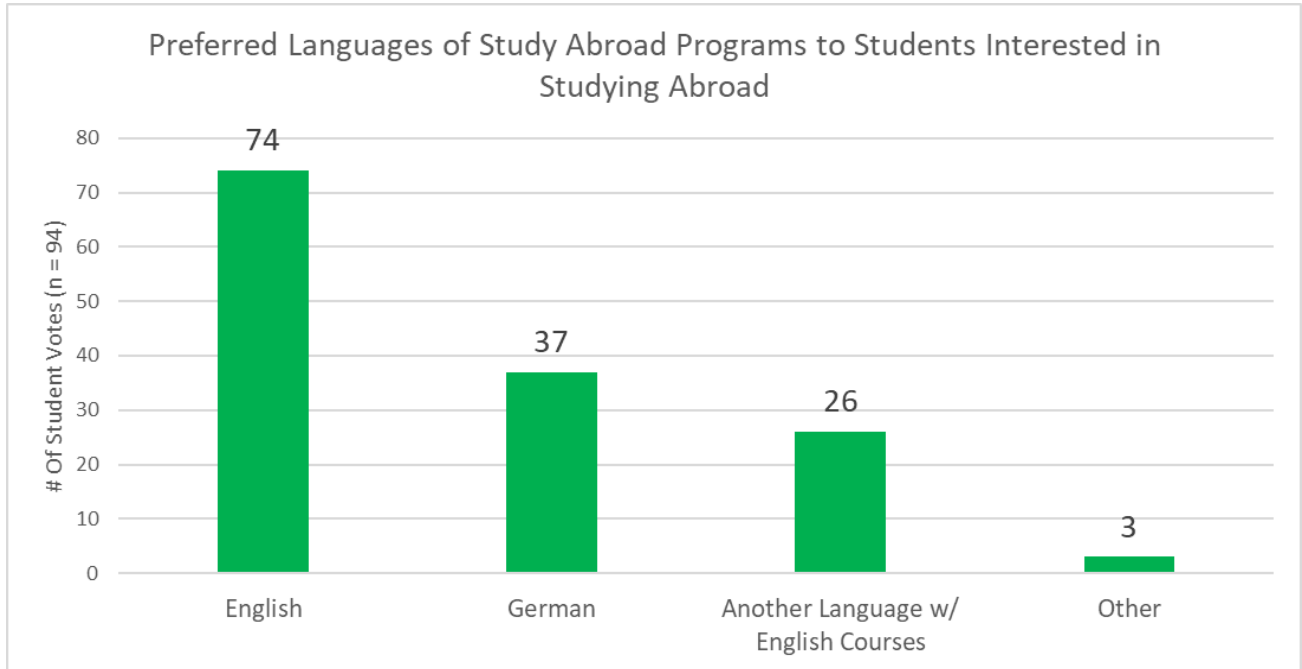


Figure 4.4: Preferred language for study abroad programs for OST students.

#### Study Abroad Locations of Interest for OST Students

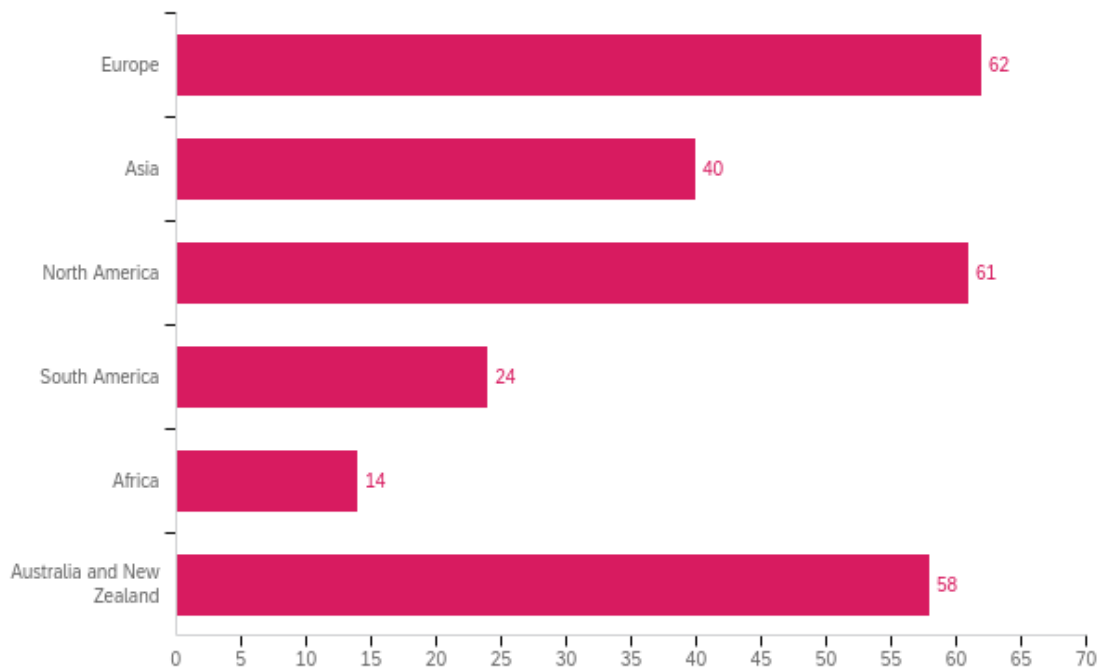


Figure 4.5: Study abroad locations of interest to OST students.

### 4.1.2 Study Abroad Experiences of OST Students

Of the 113 students who completed the survey and consented to their results being published, 15 indicated they had studied abroad. The survey results determined that 14 of the respondents - almost all - agreed to whether they would recommend study abroad to a friend and participate in another study abroad program if given the opportunity. In addition, another 13 indicated they made meaningful connections during their time abroad (See Figure 4.6). A majority of participants (9 of 15) even revealed they would be interested in pursuing a career at their study abroad location. Moreover, the number of students who believed their study abroad experience exceeded expectations was just over half (8 of 15). Most students (11 of 15) also believed that OST clearly presented information regarding study abroad.

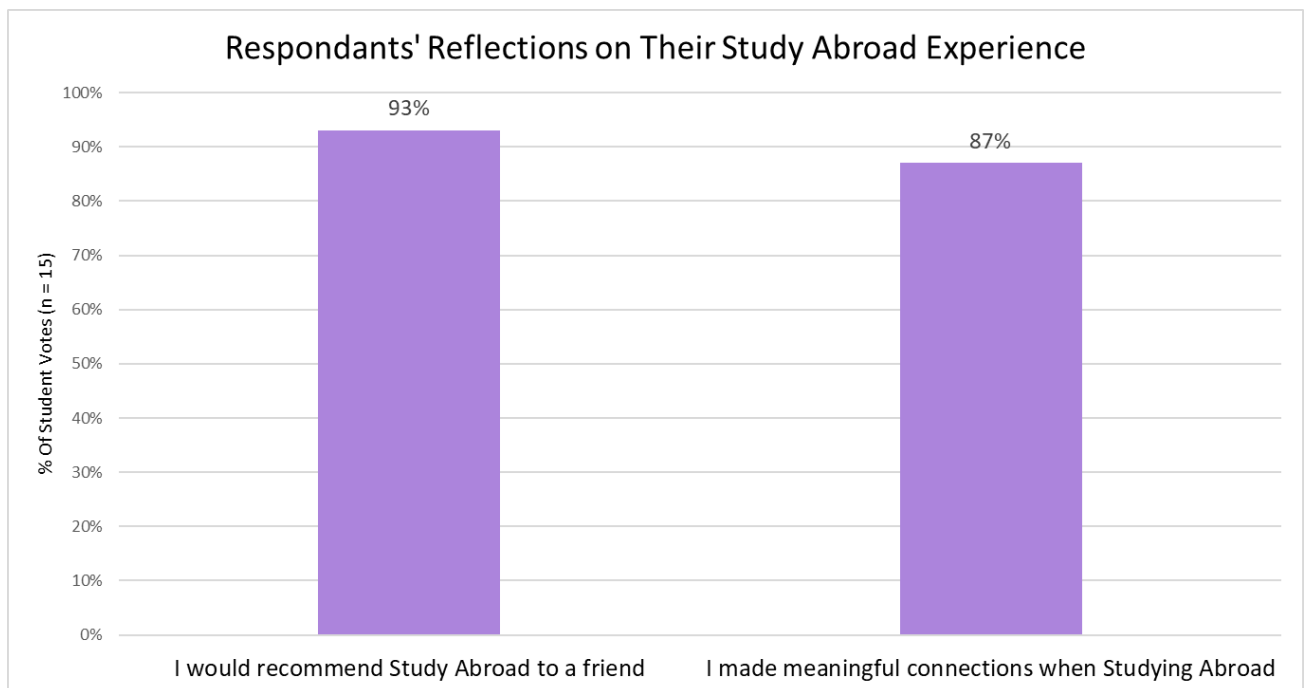


Figure 4.6: Survey respondents' reflections on their study abroad experience

Previous participants in study abroad programs were also asked to identify their main considerations before having decided to study abroad. The most important factors for students in a study abroad program included experiencing new things in another culture, improving language skills, a new academic environment, and adventure, while professional and career aspects as well as the program's appeal on a CV were of lesser importance. Improvement of language skills was of varied importance among students. Please refer to figure 4.7 for a graphical representation of this data.

### Top 3 Factors of Importance for OST Students When Deciding to Study Abroad

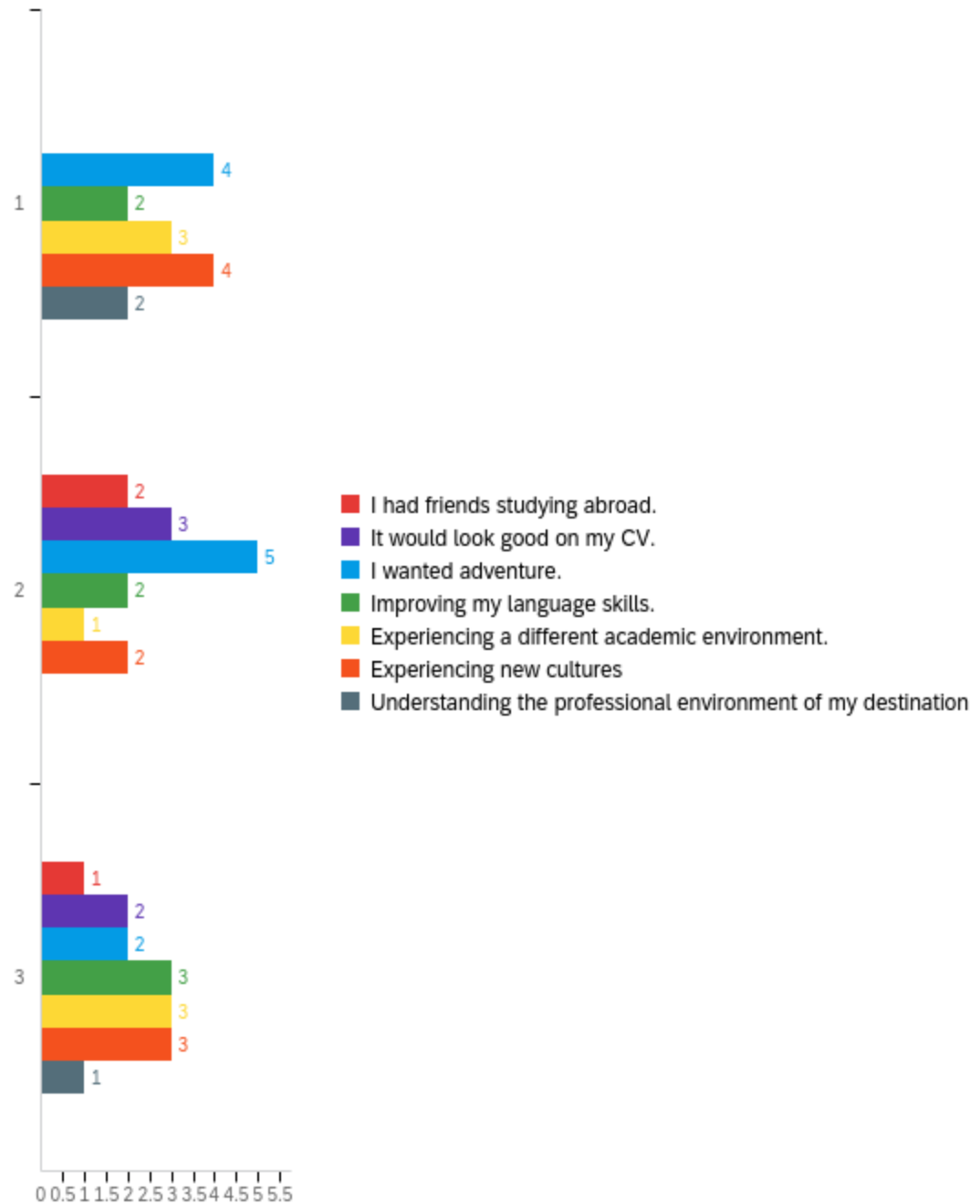


Figure 4.7: Graphic representation of the top 3 most important factors for study abroad at OST.



## 4.2 Interviews with Students

One form of interviewing students consisted of a short, few quick questions regarding studying abroad. These questions were aimed at whether they studied abroad before and if not, they would be asked about what would motivate them to study abroad and if OST could provide any further support. If they had previously studied abroad, they were asked questions about the facility to find information and the amount of advertisement. Please refer to Appendix C for a list of questions.

Out of 11 students who were approached for short interviews, all 11 of them said they have not traveled abroad. 4 students plan on traveling abroad and the other 7 said they did not plan on ever studying abroad. The ones who did not plan to study abroad were influenced by the convenience of staying nearby and some were worried about finances and language barriers. Overall, the consensus was that students were receiving enough publicity regarding studying abroad through emails and advertisements of events. However, some of these students did admit that if it were easier to transfer credits or receive credits earned at the host institution, they would be more inclined to study abroad.

Two students who stated they previously studied abroad and indicated interest in an interview through our survey underwent a longer and more comprehensive semi-structured interview as seen in Appendix B. They were asked questions about their overall experience and motivations for choosing to study abroad. The first student traveled during their sixth semester to Berlin through the ERASMUS program. Although the student took engineering-based classes such as technical mechanics and flow dynamics, the student's main focus was on a project. They did not travel with anyone but expectations were met when they were able to make friends and get to know a new city. The process was very easy overall, requiring a signature from a professor and the application being accepted by the international office of OST. This student was able to receive a stipend of 1,800 CHF

for their studies, but they would have decided to study abroad regardless. The student found their time studying abroad much easier to finance as many things were cheaper in Germany. The second student was doing all their studying independently and has been at OST studying abroad since 2019, and described he was going to Canada for three months to continue with language studies. This student also admitted that they could easily navigate through the application process of the ESL language school, but admitted that they would prefer to complete a similar program if it was offered by the OST. This student was traveling alone. This student admitted that the process as a whole would be easier if credits were more transferrable.

### **4.3 Interview with Professors**

Interviews with professors of the OST were done in person on campus. In our interviews, we asked professors about their international connections and experience, involvement with study abroad programs, their opinion on the impact of a student studying abroad, and their preferred form of study abroad. We also requested that they give us insight into the university's initiative to improve the participation of engineering students in study abroad programs as well as specify the related challenges to integrating study abroad in an engineering student's academic schedule.

We interviewed Professor Stefan Bertsch, who is very knowledgeable on the topic of studying abroad, and asked about any patterns they noticed in students who travel and students who do not. A list of these sample questions can be seen in Appendix F. A primary contributing factor to students not studying abroad had to do with personal conflicts. Many students have jobs that would make it difficult to take even a semester off. Another large deterrent was the language barrier. English is not taught as one of the top languages and is usually the third or fourth language students learn. In addition, universities in English-speaking countries often require a language certificate to

prove the students' competencies before they begin their studies. Due to such English language requirements, some students do not feel comfortable enough to travel to English-speaking countries, let alone take classes in English.

Reflecting on the positive aspects of study abroad programs, Professor Bertsch acknowledged the benefits included for students in study abroad programs. By studying abroad, students can learn a new culture and immerse themselves in it, improve their language abilities, and present study abroad as an important experience on a resume/CV. However, Bertsch admitted studying abroad through OST is well-advertised. According to him, the only valuable exposure for students to study abroad opportunities presented by the university has been a webinar twice a year.

## 5. Recommendations

Based on the research conducted and the data collected through interviews and a survey, we have compiled a list of recommendations to provide to OST in order to increase the participation rates of engineering students studying abroad. We recommend the following:

- Promote distribution of information about study abroad
- Make the website more informative and easier to navigate
- Advertise study abroad to students through past participants
- Increase the number of partner universities in English-speaking countries
- Improve academic alignment of study abroad programs
- Integrate more language courses
- Make study abroad programs more affordable
- Offer short-term study abroad programs

### 5.1 Increase Distribution of Information to Students at OST

#### Through Various Media

Out of the 113 students in our survey, 69.4% students revealed to have little knowledge and a further 25.9% admitted to knowing nothing about study abroad. While this statistic demonstrates how information about study abroad has been distributed successfully enough to the extent that most students have at least a limited knowledge of the opportunities presented to them, increased outreach and enhanced marketing of study abroad programs could increase the number of outgoing engineering students at OST.

In order to achieve improved awareness among students of study abroad, information must be distributed through various media - flyers, social media, and websites. The first form of study abroad advertising - flyers - has already been facilitated to some capacity by OST. We recommend that flyers in the future contain specific information on future information sessions, deadlines to apply, and include an easily identifiable QR code that brings them to an improved website (see section 5.2). In addition to the means already utilized by the university for the distribution of information, namely flyers and a website, we would like to propose the idea of promoting study abroad programs through social media platforms such as Instagram, LinkedIn, and FaceBook. Social media advertising provides an opportunity for students to be exposed to the idea of studying abroad on a digitalized modern campus.

## **5.2 Improve OST Website Navigation and English Translated Content**

Some students that were interviewed stated they either couldn't bother to use the website or commented they found it difficult to navigate overall. As a first step towards optimizing the website for marketing study abroad opportunities, we recommend that "Study Abroad Opportunities" (or "Studienmöglichkeiten im Ausland" or "Auslandssemester" on the German website) be put directly under the main navigation tab ("Hauptnavigation"), where students can then find study abroad opportunities. The students may then access the information about the application process and deadlines as well as all application forms directly on the website. As well as the included list of partner schools for each department, the students should have easier access to the courses offered by each university with transferable credits. This could be done in the existing document with an additional column instead of the links provided and would allow students to see the information

more clearly presented and with fewer websites to navigate. Although such a solution would require cooperation with professors at the OST and some research into the course selection offered by the partner universities, it remains a realistic objective.

In addition to the changes made primarily to the German website of the university, we recommend that the website improve the English-translated content presented. A more comprehensive and effective English-language website provides the means for effective communication between OST, their students, and future partner institutions. From the view of a native English speaker, the listing of “undergraduate programs” or “master's programs” under the main navigation menu directs a student more easily toward the appropriate web page better than “education.” Under each department, the opportunities for incoming and outgoing students could be presented on the same page to reduce the number of links used to reach the desired web page. The information for desiring outgoing students should also be presented in English to match the information provided on the German version of the webpage to ease overall access to information.

### **5.3 Present Previous Study Abroad Experiences**

OST should utilize the experiences of past study abroad students to encourage students to follow their path. Advertisements showing the experiences of previous study abroad students can be made accessible through various media and provide evidence to justify the claims made by the university as to why students should study abroad; experiences show how study abroad allows students to expand their international networks, add to their international experience, discover new locations, and invest in their future career. One channel for advertisement remains the many TV screens around campus currently not in use. TV screens can be used to display pictures of a student, their name, age, study abroad location, attractions they explored, and an overview of their

experience. OST could also distribute such advertisements to their social media pages and entice them to participate in study abroad programs in a more accessible way. Another way to advertise would be on the OST website under each “outgoings” page, in which students’ experiences are provided in further depth and include a far more detailed description than through digital screens. Students will explain why they chose to study abroad, how they applied, and the experiences they had during their journey which proved their time abroad to be worthy. Students could also speak about their experiences studying abroad during info sessions, which could add a more personal aspect to the practical information presented at webinars.

## **5.4 Increase Number of Partner Universities in English Speaking Countries**

Our next suggestion is to increase the number of partner universities in English speaking countries. 52.9% of students we surveyed said they prefer to go to an English speaking destination. When asked what location is most desirable, students often chose destinations where English is the main language of communication; the USA, UK, Singapore, New Zealand, Australia, and Canada were among the most favored locations. In our survey, English was also twice as desirable as German (74 to 37 responses) among possible languages for a study abroad program. Having more English speaking schools to choose from would appeal to that majority of students who prioritize speaking English in their studies.

## **5.5 Improve Academic Alignment of Study Abroad Programs**

Two of the most potent concerns from students when considering study abroad in our survey were prolonged graduation (29.7%) and transferability of credits (28.7%). An even larger number revealed they agreed they would attend a study abroad program if it didn't conflict with their schedule (49.4%) or offered transferable credits (57.6%). Due to the inadequacy of transferable credits in a study abroad program or misalignment of its semester timing, students could consider a program a possible interruption to their academic progress. As a result, we recommend more cooperation between OST, their professors, and their partner universities to generate an inventory of available classes with transferable credits for students to take, depending on the student's field of study and language aptitude. This can be facilitated partially through approval of OST professors when provided with information about the course content and structure, such that students know ahead of time which courses they are encouraged to take at the institution abroad. The gathered information on approved and transferable courses could then be shown on a software/website which assists in students' academic planning as seen with the WPI planner website. To expand on the WPI platform, which takes into account all available courses for the given terms - half semesters - of the academic year, students could select enrollable courses at partner institutions through the website as substitutes for courses at OST in order to understand how well a study abroad program may integrate itself into their academic plan.

## **5.6 Integrate More Language Courses**

Students in both our survey (25.5% of respondents) and interviews acknowledged inadequate language skills as a deterrent to their participation in study abroad programs. Professor Bertsch even



indicated students often disregard study abroad programs due to the language barrier, especially in English-speaking countries. In order to increase students' preparedness for a study abroad experience, we recommend OST offer more courses in English - both language and engineering coursework related. This can be done through either exclusively English-taught courses and programs or the integration of textbooks and course material in English, such that OST students have a comprehensive understanding of their field of study in both German and English. Enrollment in English-language courses then further prepares students for a more internationally-integrated working environment and increases their chances among employers demanding proficiency in German and English.

## **5.7 Make Programs More Affordable**

The main concern for students in our survey and interviews when considering study abroad proved to be a lack of financial resources (50% of 94 respondents who had not studied abroad). Although programs like [SEMP](#) and [ERASMUS](#) have proven effective in reducing costs through stipends, as revealed by one former study abroad participant at Berliner Hochschule für Technik (BHT), students are uncertain of the combined costs incurred while studying abroad. For students applying as free-movers, the requirement of paying fees for both the home and hosting institution burdens students' finances excessively. One student who was interviewed described the excessive cost of the free-mover program as a motivation to attend a study abroad option through the private English-language learning program (ESL). The student additionally acknowledged that if OST offered a similar study abroad format that was more affordable than ESL, he would have been more inclined to participate in it. Given the information on students' concerns about costs incurred during study abroad, it should be made a priority for OST to provide maximal transparency about the

comparative costs of studying at different locations through cooperation with partner universities to gather data about students' average monthly expenses. OST can then provide students access to data on average costs through the current platform, Moodle, or another customly created website. Having this information in a location that is easy for them to access could encourage students to do research about their eligibility and potentially apply to study abroad. If a student considers studying abroad at a specific location, the university may provide additional assistance for costs incurred abroad through a scholarship which would be applied for ahead of time. This scholarship would be allocated to every student for them to use on housing, moving costs, tuition and overall living expenses while they are abroad. The criteria for distribution of additional stipends may be evaluated according to prior academic performance and could be adjusted based on the student's performance at the host university, which would motivate them to focus on their studies while abroad.

## **5.8 Offer Short-Term Study Abroad Programs**

From our survey, more than a third of respondents (34%) indicated preference in a short-term or summer school-based study abroad program. While a third of respondents does not represent a majority of the surveyed sample size, we recommend that OST implement a short-term study abroad program to provide a more practical and efficient option for students looking for an experience abroad without requiring the commitment of a full semester. A short-term study abroad program would reduce the interference of financial, social, and academic barriers on a student's decision to study abroad. The incurred overall costs would be lower, the duration of the program reduces the risk of prolonged graduation, and participants would leave behind close family and friends for a shorter period of time.

OST can implement short-term study abroad programs in several formats, depending on the demands of each student. From the students' perspective, an international project such as the [IQP](#) format was seen as most favorable (32.9%) among the options related to short-term programs. A similar short-term project format involving engineering-centered projects would give students the opportunity to implement concepts learned in courses taken at the university as well as enhance their communication and writing skills. The completion of a project would additionally heighten their employment chances in companies that increasingly demand workers with the ability to interact with international partners. Short-term "[Maymester](#)" or summer-school programs offered at Hartford University, the University of Texas, or the University of Edinburgh could also prove effective at OST given the relatively short duration spent abroad. Whether the student embarks on a short-term 3-week immersion or a lengthier 7-8 week project, the program should be advertised to students through various media (see [Section 5.1](#)) in the early stage of their bachelor studies in order to maximize enrollment. Giving the option of a shorter time abroad, especially if done over the summer, would also eliminate the interference of the program in the student's academic plan. Students who were interviewed were worried about not being able to complete the required number of credits and having to delay graduation. To further eliminate this fear, a short-term study abroad program should be planned for several semesters in advance to ensure they satisfy all necessary prerequisites and remain on track in their field of study.

# Appendix A

## Consent script for study participants

This consent form was a template copied directly from the Worcester Polytechnic Institute IRB protocol for participation in a research study.

### Informed Consent Agreement for Participation in a Research Study

**Investigators:** Steven Frisch, Elizabeth Matticoli, Chris Parsons, Ethan Weisse

**Contact Information:** [sfrisch@wpi.edu](mailto:sfrisch@wpi.edu), [ematticoli@wpi.edu](mailto:ematticoli@wpi.edu), [cparsons@wpi.edu](mailto:cparsons@wpi.edu), [emweisse@wpi.edu](mailto:emweisse@wpi.edu)

**Title of Research Study:** Increasing International Activity Among Engineering Students

**Sponsor:** Eastern Switzerland University of Applied Sciences (OST)

**Introduction:** You are being asked to participate in a research study. Before you agree, however, you must be fully informed about the purpose of the study, the procedures to be followed, and any benefits, risks or discomfort that you may experience as a result of your participation. This form presents information about the study so that you may make a fully informed decision regarding your participation.

**Purpose of the study:** This study is aimed at acquiring information from students at the Eastern Switzerland University of Applied Sciences (OST) regarding studying abroad opportunities at their university. The goal is to assess different student perspectives about the programs in place.

**Procedures to be followed:** Interviews will be conducted for one hour and will include a series of open-ended questions regarding the students' past experiences or knowledge regarding study abroad programs at the OST.

**Risks to study participants:** Certain questions asked in the interview may cause emotional discomfort or distress to the participant.

**Benefits to research participants and others:** There are no benefits to the participant.

**Record keeping and confidentiality:** Records of this study will include the participants' answers and will not require disclosure of their names or other identifiable personal information. Records of your participation in this study will be held confidential so far as permitted by law. However, the study investigators, the sponsor or it's designee and, under certain circumstances, the Worcester Polytechnic Institute Institutional Review Board (WPI IRB) will be able to inspect and have access to confidential data that identify you by name. Any publication or presentation of the data will not identify you.

**Compensation or treatment in the event of injury:** The research in this study involves little to no risk of injury or harm to the participant. You do not give up any of your legal rights by signing this statement.

**For more information about this research or about the rights of research participants, or in case of research-related injury, contact:** Names and emails of all researchers are provided at the top of this page. The contact information at Worcester Polytechnic Institute for the IRB Manager (Ruth McKeogh, Tel. 508 831- 6699, Email: [irb@wpi.edu](mailto:irb@wpi.edu) ) and the Human Protection Administrator (Gabriel Johnson, Tel. 508-831-4989, Email: [gjohnson@wpi.edu](mailto:gjohnson@wpi.edu)).

**Your participation in this research is voluntary.** Your refusal to participate will not result in any penalty to you or any loss of benefits to which you may otherwise be entitled. You may decide to stop participating in the research at any time without penalty or loss of other benefits. The project investigators retain the right to cancel or postpone the experimental procedures at any time they see fit.

**By signing below,** you acknowledge that you have been informed about and consent to be a participant in the study described above. Make sure that your questions are answered to your satisfaction before signing. You are entitled to retain a copy of this consent agreement.

Study Participant Name (Please print) \_\_\_\_\_

Date: \_\_\_\_\_

Study Participant Signature \_\_\_\_\_

Date: \_\_\_\_\_

## Appendix B

### Sample questions for interviews of students who studied abroad

Semi-structured interview on students' experiences during studies abroad:

1. *For which country and university did you elect to study abroad?*
2. *Why did you choose this country/university?*
3. *What is your course of study/concentration?*
4. *Did you take part in the Swiss-European Mobility Programme, attend an exchange with a partner university, or apply as a free mover?*
5. *Did you take courses, attend a co-op, or participate in an internship in the host country?*
6. *Did this experience abroad strengthen your career prospects?*
7. *Which skills did you learn while at your university of choice?*
8. *Did you receive a stipend for your studies abroad? If so, did it cover the majority or the entire cost of your studies?*
9. *How was the experience of having to adapt to living in a different country for the duration of your stay?*
10. *Do you feel as if you improved your communication with local citizens during your stay abroad?*
11. *During your stay abroad, how did you fare with the language of the host country?*
12. *Did you learn a new language or improve your language skills during your study abroad?*
13. *After having lived abroad during your studies, did you feel more independent or self-confident?*
14. *Did OST allow for the transfer of credits from classes taken at the university abroad?*

## Appendix C

### Sample questions for interviews of students who have or have not studied abroad

Approximately 1-2 minute semi-structured interview focusing on external factors influencing a student's decision to study abroad

1. *Have you studied abroad (Y/N)?*

*If yes:*

1. *Where did you go to study abroad?*
2. *Through which program did you study abroad (Partner University, SEMP, ERASMUS, or independently as a free mover) ?*
3. *How easy or difficult do you feel it was to complete the process of enrolling in an institution abroad?*
4. *How do you think OST could have improved the process?*
5. *Did you find the OST website for study abroad to be navigable?*

*If no:*

1. *Do you wish or plan to study abroad?*
2. *Is there anything in particular that convinces or demotivates you to attend a study abroad program?*
3. *Do you believe that the university has sufficiently advertised the available study abroad programs?*
4. *What could the university do to improve the process of studying abroad?*

## Appendix D

### Sample questions for a survey given to students

Survey to determine students' perceived importance for various aspects of study abroad:

*These questions should be ranked from 1-10, where 1 is strongly disagree, and 10 is strongly agree.*

1. *I have participated in a study abroad program (Y or N)*

*For students without study abroad experience:*

2. *Experience in an international program as an undergraduate is important.*
3. *Travel is enjoyable to me.*
4. *Creating friendships on a study abroad program is important to me.*
5. *I would enjoy a study abroad program significantly less if I traveled without friends.*
6. *My school provides me with the materials I need to study abroad.*
7. *I only enjoy traveling as a vacation.*
8. *My friends are interested in studying abroad.*
9. *I am interested in a study abroad program, but don't know how to get started.*
10. *I would be interested in a study abroad program if it did not conflict with my schedule.*
11. *I would be interested in a study abroad program if I could gain credit for it.*

*For students with study abroad experience*

12. *My study abroad experience felt meaningful.*
13. *I would participate in another study abroad experience if I had time for it.*
14. *I would recommend a friend to study abroad.*



*15. I was not sure if I was interested in a study abroad program before I attended.*

*16. I made meaningful friendships while studying abroad.*

*17. I made meaningful business connections while studying abroad.*

*18. I would be interested in pursuing a career at my study abroad location.*

*19. Travel is enjoyable to me.*

# Appendix E

## Interview Codes to compare to previous literature

### Evaluating students' experiences during study abroad:

Continent of country for study abroad:

- EU (Europe), NA (North America), SA (South America), ESA (East Asia)

Method of studying abroad:

- SEMP (Swiss-European Mobility Program), PU (Partner University), FM (Free mover), O (Other)

Concentration:

- ENG (Engineering), BHU (Business or Humanities), O (other)

Work done during study abroad:

- ST (Purely Courses), INT (Internship), COP (Co-op), BO (One or more of the three)

Career prospects:

- CI (Career Prospects Improved), NSD (No considerable difference in career prospects)

Skills learned:

- CO (Communication), LA (Language), TE (Technical), NS (No considerable skills learned)

Financial support:

- MCC (Majority of costs covered), ACC (All costs covered), NSCC (No significant costs covered)

Adaptation to a different country:

- UCA (Uncomfortable adaptation), NSA (No significant adaptation)

Improved communication with local citizens:

- IMC (Improved local communication), NSC (No significant improvement in communication)

Communication in host country language:

- LB (Language barrier), NLB (No language barrier)

Language improvement:

- NLL (New language learned), ILS (Improved Language Skills), NLI (No/little language improvement)

Personal improvement:

- IC (Improved confidence), GI (Gained independence)

Determining external factors:

Currently interested in study abroad:

- IN (Interested), NI (Not interested)

Current course of study/concentration:

- ENG (Engineering), BHU (Business or Humanities), O (other)

Financial costs as a barrier:

- CSB (Costs were a barrier), NB (Costs were not influential)

Knowledge of SEMP & associated stipends:

- KNP (Knowledge of program and/or stipends), NKS (No knowledge of program/stipends)

Consideration for foreign internship:

- FI (Foreign internship considered), NFI (No foreign internship desired)

Proficient/Fluent languages:

- EN (English), GE (German), FR (French), IT (Italian), EUL (Any eastern European language), EAL (Any east asian language), AFL (Any African language)

Studying abroad in a country where they do not know the language:

- SWL (Study abroad is fine without local language knowledge), NSL (No studying in country without knowledge of the local language)

Student's perceived importance for study abroad aspects:

Has or has not participated in a study abroad program:

- SAP (study abroad participation), NSA (no study abroad participation)

## Appendix F

### Sample questions for interviews of professors on campus

Semi-structured interview on external factors influencing a student's decision to study abroad:

1. *Have you ever been involved with implementing or advertising a study abroad program to your students (yes/no)?*
2. *In what sense have you been connected internationally/done projects with universities outside of Switzerland and the EU?*
3. *Would you encourage students to study abroad? Would you discourage them?*
4. *What advantages do you see for students who choose to study abroad?*
5. *What forms of study abroad do you see as most advantageous for students if they choose to pursue study abroad programs? Should they take classes, engage in projects, or search for another form of study abroad?*
6. *Would you say that study abroad programs are well-integrated into the students curriculum? How so?*

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