EMESCC 2019

FINAL REPORT

FAU Erlangen-Nuremberg 30.10. – 03.11.2019

CONTENT

FOREWORD

As beautiful as the time at the EMESCC was, it was over just as quickly. Five days of productive exchange lie behind us. Filled with workshops, excursions and networking, the days were not only exciting but also successful. We hope you had as much fun as we did and can look back on good memories.

In this booklet we have compiled the results of our work in the form of reports. Thereby we hope to be able to record the results in order to use them in the future.

Thanks for the participation and hopefully we see you soon. SIEMENS!

Your EMESCC team of 2019.

PARTICIPANTS

FINLAND

- Yliopisto Aalto:

  Koneinsinöörikilta

SWEDEN

- KTH Stockholm:

  Kunliga Maskinsektionen

BELGIUM

- Universiteit Ghent:

  MaChT

DENMARK

- DTU Lyngby:

  P&K Rådet

SLOVENIA

- Univerza Ljubljana:

  Studentski svet Fakultete za strojnistvo

AUSTRIA

- TU Vienna:

  Fachschaft Maschinenbau und Verfahrenstechnik

GERMANY

- HS Darmstadt:

  Fachschaft Maschinenbau und Kunststofftechnik

- FH Dortmund:

  Fachschaftsrat Maschinenbau Fahrzeugentwicklung

- FH Südwestfalen Soest:

  Fachschaft Maschinenbau und Automatisierungstechnik

- TU Bergakademie Freiberg:

  Fachschaftsrat der Fakultät Maschinenbau, Verfahrens- und Energietechnik

- HAW Hamburg:

  Fachschaftsrat Maschinenbau und Produktion

- KIT Karlsruhe:

  Fachschaft Maschinenbau und Chemieingenieurwesen

- TH Lübeck:

  Fachschaften Technik und Wirtschaft

- RWTH Aachen:

  Fachschaft Maschinenbau

- TU Hamburg:

  Fachschaftsrat Maschinenbau

- Leibniz Universität Hannover:

  Fachschaftsrat Maschinenbau

- HS Munich:

  Fachschaft 03

- TU Munich:

  Fachschaft Maschinenbau

- Universität Stuttgart:

  FLURUS

  Fachgruppe Maschinenbau & Co.

- Ruhr-Universität Bochum:

  Fachschaftsrat Maschinenbau

- TU Brunswick:

  Fachschaft Maschinenbau

- TU Darmstadt:

  Fachschaft Maschinenbau

- Universität Duisburg-Essen:

  Fachschaftsrat Maschinenbau

- THM Friedberg:

  Fachschaft M

- TH Nürnberg:

  Fachschaft Verfahrenstechnik

- OTH Regensburg:

  Fachschaft Maschinenbau

- FAU Erlangen-Nuremberg:

  Fachschaft Maschinenbau

  FSI CBI LSE CEN EnTe

Workshops

Environmentally Friendly Council Work

Date: 31.10.2019

Time: 14:30 – 16:00

Speaker: Tobias (Ruhr-Universität Bochum)

Target: Exchange of experiences with the implementation of more sustainable practices in the student council work as well as finding suggestions to further improve the already existing efforts.

First of all a definition had to be found on what environmental council work means. This definition included 3 points. The first one is to produce less waste. Directly connected to the first point is the second one to use reusable products instead of these for single-use (no paper cups/plates). The third point was to use recycling possibilities for waste.

To give the participants a first impression, the speaker reported about what their student council had changed after thinking more about environmental awareness. They are using reusable or biodegradable cups at their beer fest. Renting the cups and other supplies does also have the advantage of not having to clean them before giving them back. If other councils from the university are also renting supplies for events there is the opportunity to create a „cup concept". Another option is to take cups from the brewery when you are also ordering the drinks from them because sometimes they provide cups as well.

The speaker explains a few changes they made at his university to avoid waste. They are no longer using paper towels and are rather using normal towels instead. Furthermore they do not use plastic cutlery anymore. Some food can just be given out without any cutlery, for example sausages can be given out just in rolls. They are also trying to reuse used paper. A one side printed paper can still be used on the other side for notes or even for printing not important stuff. To avoid wasting food they mark food in the fridge with the date they have been opened to know how old it is. For the freshmen they replaced the plastic bags with reusable bags and even their faculty is supporting them now by paying for the print on the bags. The last point he mentioned is to use biodegradable straws instead of plastic ones or even just don't use a straw at all.

To start a discussion, other councils should show what they do to be more environmentally aware. The KIT Karlsruhe reported to do similar things like the council in Bochum but they are still printing out old exams for their students. In Stuttgart they are doing most of the mentioned things as well. Furthermore they bought their own durable office supplies because they normally get it from asta which is very cheap. But they are still using plastic cups. To make the people reusing their cups at the whole event they sell them. At other universities they tell students to bring their own cup to the christmas party to avoid plastic cups. Some student councils reported that they do not have the opportunity to stop selling printed scripts because they get money for it. A disadvantage about the system of asta is that there have been problems with the hygiene so it didn't work the way it should. In total every council already thought about how to be more environmentally aware.

To get some more ideas about how to change their work in an environmental way the participants got together in three groups. At the end they worked out a few ideas for the three main areas of student councils work: council work in general, welcoming freshmen and activities/events/parties.

For the council work in general they have worked out selling only glass bottles or reusable stuff in general. Furthermore they should try to sell vegan alternatives instead of milk, but these products are mostly more expansive. They should also provide more vegetarian or vegan food in the dining hall or at least try to make them cheaper. To avoid waste student councils should try to print as little as possible. Another good point is to not sell water but provide a water fountain for the students. To install a water fountain at the university is very hard because it is expensive and you are responsible for hygiene. To avoid these problems you can have a maintenance contact who is checking on the fountain or you could have a „private water station". At least the student council can try to influence the uni to have a water station.

The next area is the welcoming of the freshmen. For this event the participants from Brunswick reported they donate the leftovers from the breakfast with the freshmen to foodsharing or „Tafel". They are also not giving out goodies anymore because most of the stuff in goodie bags is useless and will be thrown away immediately. The council from Freiburg buys the food for their events in their own boxes. In Dortmund they replaced the single-use bags with reusable bags but the reusable bags require a lot of energy to be produced which is a disadvantage of them. Another topic which was mentioned is that sorting waste is a big problem for the councils as well as for the university and that they should definitely try to do more. The last point in the group was to do the logistics with freight bikes instead of cars.

For the activities, parties and events in general they have worked out a few ideas how to avoid waste. Single-use cups should be replaced with reusable cups. This includes the normal size cups and also the small cups for shots. For the price lists on events they should print and laminate a template once which can be filled out and reused every year again. The t-shirts to identify the helpers should be replaced with badges or wristbands because they probably will last longer. Gas or coal grills should be replaced with electric grills. Leftovers can be shared among the council members or donated to foodsharing. All events include advertisements to inform students about it. These advertisements should be increasingly done on social media and via email instead of printing flyers and posters which will be thrown away after.

SHORT REPORT OF THE STAM

Date: 31.10.2019

Time: 14:30 – 16:00

Speaker: Ursula (HS Munich), Antonio (TU Brunswick) and Oussama (TU Brunswick)

Target: A short report on the current work of the STAM and news since the last FaTaMa in Stuttgart.

Agenda:

1. **Introduction**
2. **Resolutions**
3. **Elsevier**
4. **Input on current topics**
5. **Formalities**
6. **Any other business**

1. Introduction

The STAM means „ständiger Ausschuss Maschinenbau" (Standing Committee Mechanical Engineering). A short introduction into the STAM was given. An English name for STAM should be found.

2. Resolutions

A report from the MeTaFa (Meta-Tagung der Fachschaften - Meta - Student Council Meeting) was

given by Antonio. The suggestion was to have a common resolution of MeTaFa to transfer to the federal student council meeting to have a bigger influence.

The first resolution was about sick notes for exams. The workshop-participants were asked to report if symptoms have to be listed by the doctor on those sick notes. The participants from the TU Munich were not sure, if symptoms are listed. But they have more tries for an exam so it's not a critical topic for them. Hannover reported that if they are not going to an exam the exam will not count. They may have a change of their examination regulation in the future and they are not sure if symptoms are listed on the sick note. The student council from Aachen reported no symptoms on the sick note because the examining board can not decide about symptoms. In Brunswick, it is not allowed to list symptoms. The question about symptoms being listed on sick notes should be checked in all federal university laws (they differ in each state). The council from Stuttgart is not sure about the question and in Darmstadt no symptoms are listed. Darmstadt asked, which university specifically asks for symptoms on the sick note. Karlsruhe reported, they can sign out at the exam day in the lecture hall, so no symptoms on the note are needed.

In general symptoms could make sense for the disadvantage compensation certificate (Nachteilsausgleich-Attest). There won't be any decision on this day so the decision will be delayed to the next FaTaMa.

The suggestion was made to create a google doc where every student council can add their changes and situations. At the next FaTaMa there will be a workshop about this topic.

The second resolution was about the adjustment of the semester periods. They should be adjusted to the international periods because for example otherwise Erasmus participants would have problems in moving abroad. The EMESCC Erlangen should make a decision about it. The semesters should be moved forward to start on the first Monday in September and March to be exact.

3. Elsevier

The question about this topic was if an open letter to the EU-representative should be sent. For more details check the FaTaMa topic. The topic should be discussed with representatives from other countries. The current status is that there are still problems. Only one university in Germany came to an agreement with Elsevier. The resolution should be translated into English during the EMESCC, which will be done by the participant from Hannover.

4. Input on current topics

The number of freshmen mechanical engineering and engineering is decreasing. In computer science the freshmen number increases, probably because digitalisation is trendy at the moment. To recruit more freshmen for engineering again, mechanical engineering should be introduced more to middle school students. Karlsruhe reported less freshmen in general and more people who are dropping their studies.

5. Formalities

Oussama would like to join the accreditation pool. The EMESCC should decide about it. There will be a vote on this at the final plenum.

6. Any other business

A discussion about the topic on support of women in mechanical engineering followed. The request was rejected in Hamburg at the last FaTaMa because they could not agree about the text. The written decision-making procedure did not get the necessary majority. For the next FaTaMa in Brunswick representatives of the mechanical engineering programme for women should be invited.

In attendance: TU Brunswick, TU Darmstadt, KIT Karlsruhe, Universität Stuttgart, Leibniz Universität Hannover, TU Munich, HS Munich

CO_2 FOOTPRINT IN DAILY LIFE

Date: 31.10.2019

Time: 14:30 – 16:00

Speaker: Dominik Friedrich (FAU Erlangen-Nuremberg alumni)

Target: Get an overview on how much CO_2 everyone is using daily and how each person can try to reduce their footprint to spread awareness.

The workshop started with a short introduction of the subject and with an introduction of the participants.

After the introduction, an overview about the CO_2 consumption per day was given. In the morning every person uses electricity. This electricity has to be produced by the different countries. Germany for example delivers an electricity mix in which they are trying to expand the part of renewable energy and reduce the electricity produced by coal and nuclear power. The renewable electricity mostly consists of biomass, water and wind. The whole delivered electricity at the moment is produced to 20% by wind, 8% by biomass and solar energy and only 3,3% by water. But the electricity which can be delivered by water is already maxed out. The EU delivers electricity which consists of 30% renewable electricity and 70% other. In France the electricity still comes from greater nuclear power plants. Norway however is a good example for sustainable energy production because a big part of their energy is produced renewable. In Poland they get most of their energy from coal. China tries to expand the production of renewable electricity.

In Germany a lot of energy is used for heating which has the consequence that there is a high potential to reduce this energy. Most of it is used for heating with gas. A less wasteful option is to use distant heating. This is already becoming more popular.

Another big share of the CO_2 footprint causes the food everyone is consuming. A lot of products people have for their breakfast, includes palm oil. The production of palm oil requires a lot of land, which could be used for something else. Another example is the Avocado. Each Avocado needs a big amount of water, around 1000-1500l, to grow. Animal products in general do have a higher CO_2 consumption than others. For example, the production of cheese needs 8,5 kg CO_2/kg, for meat it's even more. And also products which are made of animal products have a really high CO_2 consumption.

For mobility the bike is the most efficient way to travel between the work/university and home. Another option would be to use electric cars. But even these cars are not the best option because they still have emission due the production. Furthermore there could be a peak time in the evening, when most people would charge their car. The electricity, which would be needed then, is about 5 times as the network capacity. This problem has already been solved in Denmark. They have already worked out a smarter way to charge the cars, for example at night or when the capacity is available. So the problem of all charging at the same time is not really a problem and it is also unlikely to happen. Electric scooters are an attempt to reduce the number of cars in the city. But as it turned out they are not used instead of cars rather than instead of walking or taking the bus. So instead of reducing the CO_2 footprint they raised it.

For daily life products the social aspect is also an important factor to have a look at next to the CO_2 footprint. Lithium batteries for example are produced in Kongo under poor conditions for the workers.

Furthermore the groundwater level gets reduced in these areas. A lot of products for single use are energy expensive because of the large produced amounts. The general opinion was that the politic needs to make rules and the society needs to accept these rules.

On holidays a lot of people are going on trips. Planes and ships are producing a huge amount of CO_2. Furthermore their fuel contains sulfur. For long distance trips you need to take the plane but most of the flights are within the country. A lot of people take these flights because they are often cheaper than going by train.

Renewable fuels might be a short-term solution.

Next the speaker gave a little foray about life cycle assessment. Life cycle assessment is an analysation of the products material consumption from cradle to grave. It's already used in the industry but only if the industry can make a profit out of it. An example for this are bottles. It is also difficult for companies to get all the information about a product which is needed for the life cycle assessment. The goal and scope of it should be life cycle inventory and an impact assessment. For the impact assessment all data has to be interpreted but this would likely be with a high uncertainty due to the large number of people involved. For example aluminium could be used instead of steel. During the production the amount of CO_2 is higher but due the reduced weight of the product (e.g. cars) the fuel usage can be reduced. The aim of processes should be reducing the overall CO_2 emission.

Some products have higher costs to buy them or to produce them but they will last for a long time so in total they will be less expensive. For example the battery of Tesla cars needs to be replaced after expected 1000000 miles. Sometimes there are no long-term studies of materials when you try a new engineered product. The testing therefore is often done while the materials are in use.

After the lecture ended the discussion was opened. During the discussion the following aspects have been mentioned and discussed:

- Fan based cooling systems might be enveloped to capture CO_2.
- CO_2 can be stored in the ground like it already happens in China.
- It should be tried to capture CO_2 directly from the powerplants/from the air.
- Plant trees and use them to store carbon dioxide.
- Abstaining from meat might be a solution that would expand land possible to use for trees.
- Emission of electricity is dependent from the energy mix of the country.
- Store CO_2 and try to give it to plants for increased growth.
- Nuclear power has no CO_2 emission but has a big problem with nuclear waste. For this problem no solution is found by now, instead it is shifted to the future with the hope that future generations will have technologies to deal with it.
- Austria is on a good way to be 100% renewable.
- Transport and storage are a great problem now and no solution has the possibility to solve all problems at the moment.
- People are dying from cancer caused by nuclear waste, but a lot more people die due to CO_2 and world upheating.
- The safety of industry and therefore society has to be taken into account in one's deliberations.

DIGITALISATION IN MACHINE TOOL MANUFACTURING – SIEMENS

Date: 31.10.2019

Time: 16:00 – 18:00

Speaker: Dr. Michael Kaever; Head of Technology Management at SIEMENS

Target: Get an insight into digitalisation in machine tool manufacturing at SIEMENS including different technologies and current projects.

Dr. Kaever started the presentation with a short introduction of himself and his area of responsibility at SIEMENS followed by an outline of the organizational structure. SIEMENS is a compound of four different business departments: operating companies, strategic companies, service companies and corporate development.

"Digitalisation in Machine Tool Manufacturing" as the topic of Dr. Kaevers presentation can be classified as a challenge for the digital industries and is therefore a compartment of the operating companies. Dr. Kaever continued to explain the different responsibilities of the digital industries regarding digitalisation of machine tool manufacturing. There are constantly new solutions needed for factory automation, process automation, software development, motion control and customer service. These different fields of digitalisation were further explained by different examples from the SIEMENS product portfolio.

After an overview on the areas of digital industries the presentation went into more details on motion control. The different sites of factories and research of development centers of SIEMENS all over the world were introduced with the headquarter being in

Erlangen. The motion control compartment of SIEMENS has around 20,000 employees worldwide and accounts thereby for a fair share of the whole company. Systems like multi-axis, nodding and friction compensation find a wide range of implementation and are constantly refined. With an active vibration absorber unit moderate to high damping can be realised and collision avoidance systems are essential in a lot of automatised machineries.

The topic of motion control was followed by insight into digitalisation. SIEMENS' unique approach to integrate the digitalisation into the entire value chain was further explained. From machine concept over machine engineering, commissioning, operating and service digitisation is implemented and merged over a collaboration platform, the Teamcenter. From there the suppliers and logistics can get the essential information. A study by the VDMA was presented that proves higher productivity through digitalisation. Via digitalisation the time-to-market can be reduced as well as the lead times and the development costs. Furthermore, the flexibility is increased by significant reduction if the commissioning phase. Dr. Kaever depicted that all types of production can benefit from digitalisation. Digitalisation can optimise classical line production and enables high flexible production as well as print part production. Via digital twins the real and the virtual world can be merged, and a continuous improvement can be achieved by utilisation of the insights into the performance from a MindSphere. Cross-date exchange in connected ecosystems betweens n-tiers, suppliers, logistics, manufacturers and customers can also be realised by digitalisation. Thereby the digital enterprise is already an integral part of today's value chain. The integrated data provided by the digital enterprise also enables the use of artificial intelligence. As examples for artificial intelligence Dr. Kaever mentioned and explained supervised learning, reinforced learning and knowledge-based systems. Another field of digitalisation is continuous quality control. Early detection of quality issues in the production through continuous production monitoring can highly improve

production processes and products. For workpiece, safety, process and machine analytics Edge computing is used which combines automation and digitalisation of industrial machines. To close the overview on different possibilities derived by digitalisation Dr. Kaever mentioned the site of SIEMENS in Bad Neustadt which students can visit to see the different possibilities live.

Dr. Kaever then continued his presentation with an insight into robotics at SIEMENS. Through robotic technology for example robotic motor production is implemented. This allows more automation, flexibility and new machine concepts. The robot integration is achieved with SINUMERIK Run MyRobot. This allows high precision in additive and cutting applications as well as high flexible robotic applications for the aerospace industry.

The small excurse into robotics was followed by a section about additive manufacturing. The main drivers for additive manufacturing are the possibilities to reimagine products, reinvent manufacturing and rethink businesses. But there are still a lot of challenges to overcome to get additive manufacturing into mass production. Big issues are concerning the material and the quality. However, the main problem is that it is too slow. The whole production cycle needs to be faster to allow additive manufacturing to be a real alternative for today's approved methods. Dr. Kaever presented different digital approaches by SIEMENS to improve additive manufacturing. The SIEMENS Holistic Digital Twin could enable a digital transformation for additive manufacturing. Its implementation is one integrated additive manufacturing solution to get from requirement driven generative design to 3D printing. In December 2018 a new materials solution AM factory opened with up to 60 3D printers to enable production and post processing under one roof. This was a stepping stone for materials solutions to serial production.

In what followed Dr. Kaever gave an outlook on future manufacturing possibilities. One example was

that Sinumerik can be controlling all processes and devices. Thereby different production steps can be carried out at the same machine simply changing the tool. Furthermore, better simulation in real time and real environment is enabled by digital twins and CNC control. Machine tool operation can be made easier by new interaction technologies for machine tool users like the BBF project MaxiMMI. Flexible machines based on fully functional subsystems allow task-oriented programming and sensing and perception enable the recognition of scenes and behaviors in the production. Collaboration becomes the basic principle within the factory dissolving fixed cell and line structures. While perception-based adoption instead of pre-programmed action sequences can be implemented to let machines react to specific happenings. Future production will be a collaboration of modular multi-vendor autonomous systems. Some of those future technologies can already be seen at SIEMENS lab in Nuremberg.

Dr. Kaever completed his presentation with an overview on the university relations of SIEMENS. The global network of 17 strategic partner universities including the FAU Erlangen-Nuremberg was explained. Traditional collaboration formats with academic partners of SIEMENS include Seminars, Workshops, Lectureships, publicly funded projects, bilateral research projects, feasibility studies as well as Internships, Bachelor/Master Thesis and PhDs. But SIEMENS also forms innovative collaboration formats with academic partners like MindSphere Lab at Newcastle University, Global University Challenge "Automation meets Edge", HackBay at FAU´s Tech Incubator at ZOLLHOF and TAPAS Community Challenge.

After his presentation Dr. Kaever was open for questions:

- Is SIEMENS hiring? Yes, there is an internet portal where all information can be found.

- What is your opinion in the trend that more young people start studying computer sciences than mechanical engineering? Domain knowledge is very important. Not everything can be done by a computer scientist. Therefore, mechanical engineers are still needed.
- How can we motivate freshmen to go into mechanical engineering and not into computer science? Tell them about the fact that mechanical engineering is still very important. One should explain the freshmen not the complicated aspect but rather reach them via formats like girls' day and lectures. Show more examples and tell them about how things work if all of the people work together, not only computer scientists.
- What is your opinion on the upcoming G-system? The main issue is that the Systems today still have a lot of problems especially with distractions.
- What is your opinion on state funds and public funded projects? SIEMENS takes part in these projects to collaborate and not mainly for economic aspects. They are a great thing and need to be further expanded.

LEVEL AND CONSTITUTION OF DIFFERENT COURSES ON THE EXAMPLE OF MACHINE ELEMENTS

Date: 01.11.2020

Time: 09:30 – 11:00

Speaker: Lukas (TU Vienna)

Target: Exchange about the time needed to graduate at other universities and what actions are taken by the student councils to improve the situation. Presentation of the problems in the course machine elements at the TU Vienna to demonstrate the problem in a nutshell and comparison with this course at other universities.

Situation at the TU Vienna:

There are 22000 students at the university. Among them 4500 students take classes in mechanical engineering. The official time to get a bachelor's degree is 6 semesters. At the TU Vienna it takes far more time to graduate than estimated for most students. On average it takes 12 semesters. This happens at other study lines, too. Therefore, an app was started, which records the time investment it takes to study. The app is called Quinn.

Discussion about three different questions:

1. How long does it take to get a bachelor's degree at the attending universities?

- The average is two semesters longer than estimated (Regelstudienzeit).
- University of Stuttgart: The average of students need eight semesters to get a bachelor's degree, estimated are six.

- RWTH Aachen: The average of students needs nine semesters to get a bachelor's degree, estimated are seven.

2.   Which are the main barriers to finish the study in time?

- There are too many lectures in the timetable and too little time in between them.
- In Germany there is the problem that the „Kindergeld" (money from the government which supports the parents with children younger than 25) is canceled after ten semesters. Some students cannot afford their study without that.
- The first failed exam starts a downcycle of getting behind the estimated plan, which makes it difficult to get back to the regular study plan again.
- One specific semester is very hard to pass completely. After this most of the students need to repeat.
- Many courses which go along with laboratory internships are difficult to pass because they require a huge time investment.
- The quality of some lectures is not good and there is barely any information about what is asked in the exam (no examples of old exams). Therefore, preparation is difficult..
- It happens that there is some basic knowledge needed for the exam which has not been taught before.
- Most universities want their students to do an industrial internship and the bachelor thesis in the last semester. This is hardly possible. Many companies do not assign internships for only 10 weeks.
- There is no time for industrial internships during the bachelor study, but it is needed to enroll in the master study.
- Internships are not necessarily paid.

3.   Are there exams at the universities where most of the students who are not able to finish their study fail? If yes, which ones are these?

- University of Stuttgart: Mathematics and thermodynamics are exams which exmatriculated many students. It is possible to pass them, if you prepare very well.
- Typical exams leading to an exmatriculation: machine elements 1, construction science, micro process sensors.

Discussion about solutions on these three questions:

1.   Which actions have been taken by the student councils to reduce time students need to graduate?

2.   What do the student councils do against the main barriers to finish the study in time?

3.   What do the student councils do about the „exmatriculation exams", to achieve better times until graduation?

- The student councils collect and duplicate the exam questions from the last years and give them to the students for exam preparation.
- It is up to the student council to motivate their students to write a protocol with the exam questions after the exam and send it to the council.
- The student councils have (depending in which state the university is) a 50% vote with blocking minority on what the state fund for quality assurance of teaching is spent on. This fund can be used for extra supporting courses in the difficult subjects.
- For example, there are existing supporting courses in mathematics at many universities.
- Those courses are often only for first years.
- University of Stuttgart: There are mentoring programs from the beginning to give the

first years a good start. Many first exam failures happen right in the first semester because most first years are struggling with study strategies.

- KIT Karlsruhe: There are extra courses for the basic lectures, too. They are called MINT-Kolleg.
- RWTH Aachen: The state fund is used for extra tutors/supervisors at the tutorial lessons and seminars. For the students who have failed an exam, there are extra seminars before the repeat exam and advisors who can help with questions about how to continue the study after failing exams. Also, they work out a plan for a new timetable with the goal of a constant workload during the study. This should prevent too much workload in one specific semester.
- It can be difficult to find those extra tutors because the older students do not have time to be a tutor during their own study either.
- Also, the student councils can ask the institutes itself if they can offer surgeries for the students to come with questions or if they are willing to hold additional exam preparation courses.
- The fund is spent on study strategies courses, too. They teach the students how they can learn efficiently. These courses have very positive feedback.
- Some soft skill workshops might help to keep the work and interaction balance between the students. Better exchange between the students is very helpful to improve the exam preparation.
- For example, communication workshops or soldering workshops for practical experience.
- For problems related to one specific subject an open dialog with the Dean of Studies about the credit distribution is recommended.

- To simplify the evaluation of the lectures an app can be used.

Concrete vision of the course machine elements at the TU Vienna to demonstrate the problem in a nutshell:

- The documents given by the institute are not enough to get prepared for the exam.
- Some students do not have achieved the basic knowledge needed for this course at this time in their study, yet.
- The seminar with CAD-lessons is not well supervised either.
- The content of the exam is not the same content which is teached in the lecture.
- Research books found by proactive behavior are not giving the specifically needed information.
- The exam consists of three questions only. If you do not know one it already gets difficult to pass.
- The preparation needs about two month and an immense time investment.
- The evaluation is complicated because the lecture stops a long time before the exam takes place. Therefore, the students cannot evaluate property about their time investment for exam preparation.
- Criticism during the course is seen as very negative by the lecturer and is ignored.

In attendance: KIT Karlsruhe, Stuttgart, TU Darmstadt, Hochschule Darmstadt, Braunschweig, RWTH Aachen

REGULATIONS FOR SELECTION PROCESSES FOR EXCHANGE PROGRAMS

Date: 01.11.2020

Time: 09:30 – 11:00

Speaker: Moritz (FAU Erlangen-Nuremberg)

Target: Exchange on the selection processes for exchange programs like Erasmus on the different universities and how to improve them.

Moritz shows the concept of the Faculty Student Council of the Faculty of Engineering at the FAU-Erlangen Nuremberg:

Transparent point system (National language, Average Mark Bachelor / Master, Study Programm, Voluntary work, Motivational letter) elaborated by student representatives and sent to the coordinators for Erasmus-programme. The student representatives worked out that system because there are many different systems, e.g. lottery, only grades matter, etc. at the different departments of the faculty of engineering.

What do you think of this system? How does this work at your university?

Selection processes for Erasmus at Stuttgart University are depending on grades (not lottery) in comparison to your semester. You need a minimum amount of credits before you can apply.

FAU Erlangen-Nuremberg: Department coordinates the open spots – different study programs have different ways to spread the spots over the students. But there is the wish for one system for the whole faculty like an international Office so every student gets the same treatment.

Why is the motivational letter only worth one point? The people coordinating the spots don't want to read every letter. The letter only decides at tied points (other criteria are easier to work through).

Problem for bachelor students because you need to apply 2 semesters before so you don't have that many grades at that point? Same problem for everybody – cancels itself out.

Different selection methods: Lottery Systems, Language knowledge, Grade, Study Programm, etc.

Number of spots per study program: Why are they not all in use?

FAU Erlangen-Nuremberg: At Energietechnik (power engineering) in Erlangen for example it's not that common because you have to do too much in your own semester.

KIT Karlsruhe: They try to find a spot for everybody.

Comparison with Bavaria: The University decides how many ECTS are needed to go abroad and have to be shown during the abroad semester - evidence of the ECTS.

There are different kinds of problems with recognition of subjects done at the university abroad depending on the faculty, professors and university. Often the agreement of recognition needs to be done before being at the university abroad and then the problem is, that there can be changes in courses, full courses, etc. at the receiving university and probably the needed ECTS can't be reached.

KIT Karlsruhe: At our university only the faculty is relevant and no proof of the specific subject is required. There is an university-intern list of equivalence existing as an online database, where subjects are listed that have been accepted at this faculty.

Discussion of the problems of different ECTS for the same subject and different credit Systems and a european credit system.

Ruhr-Universität Bochum: We are well organised with a list of recognition.

FAU Erlangen-Nuremberg: The date of application depends on the faculty or the department.

WOMEN IN SCIENCE AND ENGINEERING (I/II)

Date: 01.11.2020 and 02.11.2020

Time: 09:30 – 11:00 and 09:30 – 11:00

Speaker: Elisabeth (FAU Erlangen-Nuremberg) and Michael (FAU Erlangen-Nuremberg)

Target: Find a way to encourage girls to study engineering and support women in engineering study lines without privileging them or pointing them out.

Current situation:

How many women are in the student council and in the study line?

Between less than 10 and 40 percent. But much more than 10 percent is only in special study lines such as environmental or life science engineering.

What encourages girls to study engineering?

There is a Girls-day nearly everywhere. The opinions on Girls-day are divided: Nice idea, but it is pointing out the girls as special in a weird way. Also, sometimes the experiments are different for the girls, for instance making parfum. Those kinds of experiments are kind of sexist. The intervention possibilities for the student council are rare at this topic, because the responsibilities and the organisation lies with the institutes. Here it is up to the institutes to make their employers aware of this.

At some universities a Future-Day for both sexes already exists.

There exist mentoring programs at some universities. The pupils can meet and ask a student about his/her subject and spend a day with him/her. This is a good thing, because it is taking away the distance pupils have towards technical study lines, when they haven't been in touch with them before. Mentoring programs are also a good chance to show girls that they are not alone. At some point the influence one can have is limited. The choice of career often depends on the parents or other role models in the life of children and the way they were raised. While boys are preferred to get Legos, toy-cars or chemical building kits, girls are less likely to get technical stuff to play with. At RWTH Aachen there is a general trial engineering course in the summer semester. It is a lot of work, but there is an over average amount of women in it. The name of some study lines especially target women. But one should be careful with this instrument because the name should not be a marketing tool. If the name raises wrong expectations, there are far more dropouts.

Do the student councils cooperate with advertising programs for schools?

Yes, some councils send members to schools with those programs initialised by their universities. A good presentation in schools is important, again to take away the distance and thrill the pupils.

What are the problems of women in engineering study lines?

Many women in the workshop are talking about surprised reactions when they tell about their study subject. Often, they were asked whether this isn't too hard for them. People say to them that they are special, or the combination of women and engineering is unusual which puts them into an outsider role. Those insensible reactions and prejudices are annoying for women. Some council members even tell that some women change their

study lines, because they can't handle being an attraction.

In some situations women are treated differently than men, at the university. For example, they are either rated better or worse than men or the professors emphasise that they enjoy the presence of women in their lecture. No matter what a no-go it is, the student council should offer these professors feedback and tips. Often the inequality is exacerbated by the attempt to highlight women in technology.

The women in the student councils are often forced to be a role model in advertising events for new students. For some this is no problem at all, but one should respect it, if not everyone likes to do this always, just because she is the only woman. In situations of discrimination many women at technical universities feel left alone. If there are cases of sexual harassment, it takes too much time for consequences. Many victims fear a bad grade and won't go public. So, time goes by until the police have a case. Then, especially in Germany it is difficult to fire university employers because of the civil servant status.

How can the student councils help? - „Code of Conduct" for student council as role models

- Women want to be treated normally, they don't want an outstanding role or extra attention just because of their study subject.
- Reminding people when they don't act appropriate. Gender jokes for example are not acceptable.
- Do not make a difference between men and women. We all study together.
- But: It is important that the topic stays visible, outspoken and is not being underestimated or checked off at some point. Only if we stay constantly aware changes will come and last.
- Go step by step. It is okay if we start with small changes. Better a little change than no change.

Helping to get more girls into engineering:

- As a student council we support advertising events for pupils and remind the university to not discriminate against any gender (Girls Day is an affirmative action!).
- If you advertise your study programme, there should always be at least one girl and one boy in it.
- Maybe elect a task force that is taking care of informing pupils in school about the engineering study and that it is not just for males.
- Do not force the girls to step out and do advertising.

What can the student councils do against sexual harassment?

- Immediately involve the police if there is an incident.. A university should stand for equality, especially in educational opportunities.
- Some student councils already inform their freshmen, about what to do in such a case. They inform about the official people at university (psychologists, etc.) and introduce themselves as persons the students can come because they will support them if there is any problem with sexual harassment.
- In Denmark they have a successful programme for freshmen with tutors who care about 10 freshmen. It is about helping with anything the students must deal with in university. The students trust their tutors more and are more likely to talk to them. The attending members of the DTU student council invited everybody to visit them for joining the programme and get access to their wiki and all information about it.

How to create a better environment for women in the study programmes? - Main task for the student councils because the students, who are trying now to

create a better atmosphere will make it easier for future generations.

- Since this is a general issue, use the opportunity and mix up with other student councils and students.
- Think about making your freshmen aware of the general topic "women in science" but be careful with that. Doing it wrong, could make things worse.
- Host workshops basically about how to be a nicer person and make it easier for shy or quiet persons to feel comfortable in a group. Some unions like IG Metall and professionals do offer such workshops. Unions do it for free. For professionals one may get money from the "StuZuKo". The other way around you could do courses for "liking". It is about how to get people to like you.

In general, these things are no rocket science. Here are some tips to start with:

- Your environment has feelings, too. Think about them sometimes. You are not the sun.
- Ask your neighbour if he/she is fine.
- Do not judge people after the first impression.
- Do not look at anyone as something weird.
- Often talking is already helping.
- Just listen and be patient. Do not interrupt people!
- Give everybody an opportunity to talk to another person of his/her own gender.

Make your students aware of their privileges, that they can see the persons who don't have them. For example, use the freshman weekend and do a privilege walk with them.

Different ideas depending on the group size how to get in contact with other women:

- The invitation should be personally, to girls and everybody they want to bring with them.
- Invite other persons, who don't identify as a specific gender or feel more comfortable around girls. Let social intuition help you with that.
- Include a female professor as an advisor for female engineers.
- Appointment Committees for future professors: Check out if the professor might have a problem with women. Make a list with tricky questions (the right answer should not be too obvious) about how they would deal with women in different situations. The reaction is expected as most authentic if a woman asks these questions.
- Host informal cooking evenings or dinner together.
- The student council supports all his students if there is a discrimination problem. Affected students can not be left alone. Spread this information around the students, that they know you will help. Anonymous consulting of the student councils should be possible. Then or if the student just wants to stay anonymous in front of the person they accuse, a student council member can go to the responsible authority.
- If there are more discriminated students. You can bring them together. But it is important that you do not pressure it. Arrange and open meetings like a talking circle or personal discussion.

In attendance: KTH Stockholm, DTU Lyngby, RWTH Aachen, Ruhr-Universität Bochum, Universität Stuttgart, TU Brunswick

Sustainability - Theory and Practice

Date: 01.11.2020

Time: 11:15 – 12:45

Speaker: Simon (FAU Erlangen-Nuremberg alumni) and Philipp (FAU Erlangen-Nuremberg alumni)

Target: Get an overview on the theoretical background of sustainability and how implementation of sustainable practices can look at your university.

1. Theory

What is more sustainable – an electric or an old car? This is too complex to give a spontaneous answer. Therefore it can be analysed by the Life-cycle assessment (LCA) which is used to compare products by their sustainability. Some criteria are production, raw materials and waste.

Other Examples:

Is it better to use paper or cotton towels? A cotton towel needs to be cleaned regularly with water and soap, but a paper towel can be recycled after usage.

Sustainability of a grower that plants potatoes and produces potato salad? To check if the potato salad is sustainable the impact of processing steps needs to be compared. At this example water has the highest impact next to CO_2 and phosphate. A solution might be to let another company wash the potatoes, so that the impact of one company that is involved in the process declines. But is this reasonable?

Principle of Life-Cycle Assessment (LCA):

A process transfers an input to a specific product and other outputs. Inputs are e.g. raw materials, energy and auxiliaries that need to be changed through a process, eventually by some intermediates, to get the product. Next to the product there are also emissions and waste as an output. By doing a life cycle assessment all those magnitudes are taken into consideration to evaluate the sustainability of a product.

Assessment of sustainability:

The workshop leader returns to the example of potato salad and explains that not every process can be analysed by LCA e.g. printing the packaging for potatoes. That is the case if the impact is so small that it is negligible. What are the most important variables to assess sustainability?

- CO_2-emission (climate change)
- Acidification
- Land usage
- Water usage
- Eutrophication potential
- Toxicity
- Particulate matter

The upper key points are summarised to three categories:

- Resource depletion
- Environment
- Human health

Application on milk packaging:

Which milk packaging is the best - Tetra Pak, PET-bottles or glass bottles? Tetra Pak is made of layered Polyethylene, aluminum and paper that is finally colored. It can be recycled. The exact process is unfortunately unknown, but energy is needed for certain. The materials for a classic milk bottle made of glass are sand, waste glass, paper and plastic or metal for the cap. The bottle can be used about eight times and is cleaned after usage with water.

In Germany most milk producers use tetra Pak and only a few are offering glass bottles, so the transportation route for glass bottles is mostly much longer. In Germany a glass bottle is transported 720 km on average to the next supermarket but to Erlangen it is only 110 km if the route over Fürth is taken. A glass bottle also weighs a lot more than a tetra Pak, thus the CO_2-Emission of the truck is higher. That implies that most of the time tetra Pak is more sustainable than glass bottles but in Erlangen glass bottles are eventually environmentally friendly because the distance between producer and consumer is less.

Diagrams on cumulative raw material expenses, climate change potential and natural land occupation were evaluated. They indicate that the impact of tetra Pak in the amount of CO_2 and raw materials is the fewest and PET bottle the highest. But in comparison to land usage tetra Pak is the worst because of the high amount of paper that is needed.

Disadvantage of LCA:

It is difficult to analyse multiple component systems by LCA because it is then hard to find out how much impact per product is. A cow for example produces many foods but it is complicated to calculate what amount of methane is released per kilogram steak or liter milk.

2. Practice

Examples for projects with main focus on sustainability in Erlangen:

- The garden of the technical faculty is managed by students and employees of the FAU. They plant lots of vegetables and other plants that make the campus greener.
- Sneep (Student Network for Ethics in Economics and Practice) has organised sustainability days in Erlangen where for example a clothes exchange took place.

- Fairlangen designed a so-called "Statt-Plan" that is a city plan that shows where sustainable shops are in Erlangen.

ACQUISITION OF NEW PARTICIPATION COUNTRIES AND UNIVERSITIES

Date: 01.11.2020

Time: 11:15 – 12:45

Speaker: Laura (FAU Erlangen-Nuremberg)

Target: Exchange about strategies for recruiting new participants from different countries for the EMESCC.

Introduction of participating student councils and comparison of student council structure in different countries in Europe as it varies in each country, some countries (e.g. France, Switzerland) do not have any student councils and not all countries have the funding they need to attend events like EMESCC (e.g. Glasgow did not come due to funding problems).

Sweden: They are participating for the first time at EMESCC especially for exchanging information and thoughts with other members of student councils around Europe. It is even more amazing than they could imagine, there is so much information, different perspectives and big differences between the various student councils. Their student council is divided into programme chapters. Each consists of 1100 members, 14 different committees and an elected board. Every programme chapter meets four times per year and decides what they want to do until the next meeting. These decisions are binding and need to be worked out. The finance committee meets

every week and manages much money from events and universities. A regular event is e.g. football on Saturday.

Denmark: They were participating at the EMESCC before. At their university there is only one student council for the whole technical faculty. There's a student parliament making big final decisions. Most of the members are volunteers but 4-5 get paid as representatives of the university. Most of the funding is given by political organisations because universities, faculties and institutes do not have enough money for financing the student council.

Finland: They have attended EMESCC before. There's a student union for the whole university. Student associations are smaller organisations for the student union. There's also a student board which is elected in meetings. Other volunteers that are not on the board do most of the practical stuff like committees. Each committee has a photographer, translator and a host, who is a board member. All their money comes from companies, the university provides about 1000 € per year.

Germany (Bavaria): Before a person can do anything a lot of bureaucracy needs to be done.

Germany (Karlsruhe): Representatives are elected but all students are members of the student council. The student council presidents are the people legally responsible for decisions. Most money comes from parties.

Every participant, especially Sweden, wants more international participants. It is hard to find participants for EMESCC from every European country because some do not have student councils at all. This year's participants are from Slovenia, Sweden, Finland, Belgium, Denmark, Germany and Austria. Slovenia for example has been participating for several years now while Belgium and Sweden are new at EMESCC. Duisburg notices that London, Italy and Estonia were at prior EMESCCs and are not attending this year.

A suggestion arises that non-German participants could contact other student councils from their country and pass on information about EMESCC and invite them, e.g. Slovenia asks other Slovenian student councils if they are interested in participating at the next EMESCC. Sweden is about to ask others at their national student council congress next week. It is also criticised that the invitation by email contained too much text. It could be good to use links and pictures, so that readers are not overstrained with the huge amount of text and get only a short overview of the event and can then get more information on the website if interested. Writing a letter would be nice but is difficult to put in practice since most student councils do not have an address. Also, apart from mechanical engineering related disciplines can be invited from the same university e.g. write not only the student council of mechanical engineering but also aerospace and chemical engineering. Another method to get in touch with new student councils is writing the faculty and asking if there is a student council existing and how to get contact.

One problem by contacting student councils is that it costs lots of time and energy searching for potential universities that teach mechanical engineering and have a student council. Other problems occur while trying to contact the potential new participants because there is often no current contact data and they also do not respond to invitation mails that at first glance seem like spam.

Suggestions for contacting student councils

If there is a telephone number given call directly or use personal contacts of e.g. Erasmus to get in touch with new student councils. A Facebook group can be used to stay in contact with the current participant but there is already one existing that is not used anymore so maybe Facebook is not the best platform for that because there is also an admin needed. In the past years, admin rights have been passed on to the next EMESCC-hosts. Using a website could be problematic as someone also has to keep it updated

and pay for it. Another option would be a Google form with all contact data to keep updated by all participants. This has been used before and was updated with contact information that has been collected before sending out invitations this year. It would be a good idea to write down rules for the EMESCC, like a German "Satzung", that says that the contact information needs to be passed on to the next organisation team and be kept updated by each participating student council.

The conclusion is now that foreign participants should ask other student councils of their homeland and collect contact data. Also, the contact data of the current participating councils should be collected and passed on to the next organisation team. A big point is to keep data restriction in mind! Dortmund suggests electing a committee for such things like finding more universities or developing a concept for EMESCC.

There is a European High School conference that could be asked how they contact new participants.

Another point why many student councils cannot come to EMESCC is that they are not funded by their university to go there. If there was a final report of the last EMESCC that could be shown, the university would pay travel costs and participation fees. This would maybe change if it would be clear that the EMESCC has an outcome. This year's EMESCC will produce a final report that is then sent to all participating councils. It has to be ensured that next hosts do not have to start from scratch when organising and inviting.

Also, we should think about a goal for EMESCC. Do we want it to change and what impact should it have? The German EMESCC (FaTaMa) meets every year in committees where participants talk about problems, do workshops for solutions and work on resolutions papers. Some problems discussed there were European problems (e.g. varying semester start dates all across Europe making it difficult to do Erasmus).

International Participants with no student council

In many countries, student councils do not exist and until now it was an exclusion criterion for participation at the EMESCC. This should be changed. Students from these countries could participate and get to know what student councils are, how they work and how to start one at home. The lawmakers also need to be convinced that student councils are a good institution, so that in other countries student councils can be established more easily. Next year France should be invited and maybe students from universities that are not in the EU like Russia, too. But some concerns were present, that political themes and especially votes will get impossible if we have participants who are not from the EU. While inviting participants, the hosts should keep in mind that possible participants do not know what they can expect. To solve this issue, hosts should include pictures or a final report of the previous year if one exists.

Possible political topics at future EMESCC

In Denmark classes are now from 8-12 o'clock and from 13-17 o'clock but the university wants to extend the times, so that there are also lectures from 18-22 o'clock. Most of the students are displeased by that. The main reason for this measure is that there is not enough space on campus but new buildings and rooms are expensive. At EMESCC could be discussed in what period lectures should be and are currently held.

Another example that would be nice to discuss and compare with other European student councils are practical workshops included in the programs like welding metal. Is this part of the program in mechanical engineering studies and can it be standardised across the EU? What should be a good standard for mechanical engineering courses and what do companies want as qualifications from a fresh graduate?

Wishes for future EMESCC

What separates EMESCC from FaTaMa? The EMESCC should have a real international character in contrast to the FaTaMa. Until now every second EMESCC took place in Germany. This should be changed by acquiring new participation countries.

In workshops ideas and statements should be collected which are discussed and voted at the plenum. In the end of every EMESCC there should be a final report sent to every student council that participated. Every participant can propose and hold workshops, new countries/participants need a proper explanation and description of EMESCC.

Financing an EMESCC

The current organisation team, FSI CBI, is not an elected student council. That means that they are not legally allowed to take money. Therefore an association behind them is needed that manages financial things like sponsoring legally. In the past FaTaMa had the same problem until the FaTaMa association was founded for that reason.

Most of the current participants are from rich countries but future EMESCCs should also take place in countries not that privileged. Maybe there will be a financial problem. This could be reduced by getting funded by big international companies like SIEMENS which have plants and offices worldwide.

This EMESCC is mostly funded by the German state and partly by sponsoring by local companies e.g. SIEMENS is paying to hold a workshop. But sponsoring should not be too big of a part of the money. Otherwise EMESCC will not be able to stay independent of companies' influence on the programme. Maybe there is a similar funding programme at EU level that can be used to finance EMESCC in the future.

Lastly, it is really important to keep deadlines in mind as some things like accommodation and booking conference or workshop rooms have to be done a long time in advance. FAU started to apply for state funding in February (eight months before EMESCC)

and started looking for and booking accommodations one year before.

RECRUITING OF NEW STUDENT COUNCIL MEMBERS

Date: 01.11.2020

Time: 11:15 – 12:45

Speaker: Elvira Scheiermann (Universität Duisburg-Essen)

Target: Exchange on different practices and possibilities to recruit new members as a student council.

This workshop dealt with the question of how to recruit new members for student councils. An initial brainstorming session resulted in the following possibilities:

- Building new friendships
- Show presence, virtual (social media) and physical (events)
- Personal invitations to cooperate
- Interviews with suitable candidates
- Learning by doing

A general problem is that interest in social commitment and the number of students decreases, which tends to result in less appropriate and interested candidates. Student Council Members of the KTH Royal Institute for Technology gave some insights into their recruitment work. First of all, their Student Council is an important institution for students in terms of social life and social problems, such as bullying. In addition, some events, such as the "winter beginning event", the "MINT" party or the organisation of various social events are important. The Student Council will be present at these events

in order to establish a first contact with students and make new friends.

Invitations to council events are a particularly important element in recruiting, as they can serve both as a first contact and as a reminder. The most common option is to contact fellow students via email or WhatsApp. In addition, the members can introduce themselves in the lectures to gain even more reach.

GERMAN QUALITY SYSTEM

Date: 01.11.2020

Time: 11:15 – 12:45

Speaker: Carsten (RWTH Aachen)

Target: Exchange on the german quality system and accreditation.

The Darmstadt University of Applied Sciences is the result of an accreditation proposal. In Germany students study according to the Bologna system. Bologna is valid throughout Europe and is intended to make study programmes and degrees comparable and exchangeable.

It pursues goals such as mobility of promotion, the focus on teaching and lifelong learning, and in social competencies that are also important for engineers. In other words, a harmonised European model for lifelong learning.

What is accreditation?

External reviewers, students and professors examine the study programmes periodically (at least every eight years) according to legally defined criteria.

External feedback is sought and structurally the Conference of Ministers of Education and Cultural Affairs and the Accreditation Council are the state bodies that accredit agencies. These agencies look for experts and review study programmes. Further information can be found on the website of the Accreditation Council.

Rules of the Accreditation Council:

- Are the qualification goals of the students achieved and which competences should the students acquire?
- The study programme concept is reviewed: "Do I learn to be open and think in an interdisciplinary way?"
- Feasibility to study (Studierbarkeit): Are the requirements for the Master's programme fulfilled with the Bachelor's programme there? Are the examinations too easy or too close to each other? How are students with learning disabilities dealt with? Is equal opportunity given? Do mentoring programmes exist?
- What is the equipment for the degree programme?
- Are transparency and documentation given, guaranteed and sufficient?
- etc.

Transnational structural requirements:

KMK 1: Structure and duration of studies

- Bachelor 6-8 semesters
- Higher education institutions must ensure that 75% of students complete their studies within the standard period of study (government requirement).
- Vocational Training Promotion Act (Bafög).

KMK 2:

- Bachelor is the qualification to be a professional means that there must be job opportunities.

KMK 3 & 4:

- Bachelor imparts scientific basics.
- Master represents an application- and research-oriented specialisation.

KMK 5 & 6:

- Here are titles, which are awarded by the degree, defined.
- Applied is Bachelor of Engineering, abstract is Bachelor of Science.

KMK 7: Modularisation

- Completed topics in modules, which are completed with an examination.
- Periods for stays abroad must be possible without loss of time.
- Reversal of the burden of proof: university must show me why the module is not eligible for credit.
- Advantage: gradual achievement of the goal of ensuring a stay abroad without loss of time.

How can we get involved?

- Participation in university committees.
- Submit a student statement to reviewers.
- Become an expert yourself.
- Become active in the student accreditation pool.

Additional:

- There are different accreditation agencies.
- System-accredited universities can carry out their accreditation themselves without an agency.

What are the main problems in general?

- In engineering courses: Too few women.
- Diplomadenken: "What do I care about modularisation?"
- Standard period of study: General problem.

- The industry expects a field of competence: further broader orientation.

Solution approaches:

- Amend Federal Training Assistance Act and Higher Education Framework Act: However, it is a long process.
- First lump sum for first-year students and then an annual amount, which is designed for a total of 5 years.

Discussion:

- Double-degree programme or joint-degree program.
- Internships: Proof of work done through lectures and reports?
- Accreditation reports can be viewed online on the website of the Accreditation Council under Accredited Study Programmes
- If a course of study is not accredited: enrolment suspension?

INDUSTRIAL INTERNSHIPS

Date: 01.11.2020

Time: 11:15 – 12:45

Speaker: Alexander (Universität Stuttgart)

Target: Getting an overview of different requirements for industrial internships at different universities and finding ways to optimise them.

Requirements for internships vary depending on the university and course of study. Therefore, the question to the participants of the workshop was to state the requirements that they have in their course of studies.

There are different requirements regarding the field and topic of the internship. For example, topics can

be given, or just the requirement that it must be in a technological field. Basically, it seems that as few requirements as possible are better in the Master's programme, since everyone should have already found his or her strengths and should then have the opportunity to do an internship according to his or her interests. The internship should in any case match with the field of study.

Subsequently, the timing of the industrial internship in the course of studies was discussed. The participants could not agree on a time where it would be best to place the internship. At the end of the master's degree, it is rather perceived as unfavourable. In the Bachelor's programme, on the other hand, the internship is often done after the Bachelor's thesis. At some universities an internship is an entry requirement to the course of study. The participants also discussed how an internship can be implemented in the course of study in such a way that it does not necessarily lead to an extension of the studies. Since the internship is often placed close to the final thesis or should run parallel to lectures, it is usually not possible to do the internship without an additional semester.

Next, the questions whether an internship report is needed and what it should contain were discussed. At some universities an internship report is mandatory, others have abolished it completely, due to the fact that some companies do not like to outsource their internal processes. If one is needed, the internship report is usually handed in to the internship office. A report should include what the student did and learned in the internship. A required number of pages is seen critically. Generally, it is questionable if internship reports are useful.

The participants of the workshop agreed that jobs of students in companies (Werksstudententätigkeiten) should be creditable as an internship. If that is not possible, it is even harder for students to find suitable positions for shorter internship periods.

FINANCING OF STUDENT COUNCIL WORK

Date: 01.11.2020

Time: 14:15 – 15:45

Speaker: Maren (FAU Erlangen-Nuremberg)

Target: Exchange on how different student councils finance their work and different projects.

The workshops started off with the collection of possible money sources for student councils. The most common way for a student council to earn money is selling food and drinks at parties or at smaller events. Selling cake or waffles on campus is usually very successful. Some student councils are also sponsored by their university or department, either with money directly or by bearing larger items of expenditure like for example the rent of a party tent. A problem that comes with being financed by the university is that usually there are guidelines on how that money is spent. Another possibility is hosting events like a job fair, where companies need to pay a fee for a booth or for making a presentation. Some student councils are even sponsored by companies, either for single events or with long term contracts. It is often useful to have the help of alumni to get a foot in the door for sponsorships and prepare something like a catalog for companies with products of sponsorship packages they can order. In Sweden the student councils are organised as student unions which have membership fees. Furthermore, some student councils print and sell exams or even run a copy shop where theses, and scripts can be printed.

The biggest items on the spending side for student councils are often the freshmen week/day or activities like for example a breakfast for professors together with the student's initiative or an event for

alumni. Some student councils also provide things like free coffee for their students.

Question: How do you administer your money?

How student councils administer their money was another topic that was discussed. Since most student councils in Germany are elected and therefore are a legal entity, they simply open a bank account. In Bavaria there are no official student councils, only student council initiatives. To still be able to act as a legal entity, many initiatives choose to establish a nonprofit association (German: Verein), which is then able to administer a bank account.

Question: Does anyone have a financing problem?

One student council brought up that they have trouble financing their student council work. At their university some student councils finance themselves by running student bars but since there are already four of these bars this is not an option. To put aside the competition regarding money sources, they tried teaming up with other unions to organise parties but in the last two years these parties have not been financially successful. Maybe because the university is in a small town and everybody goes to parties outside. They also tried earning money with cabin trips and a Christmas lunch. Most money they get is provided by the university and with that they fund projects like EMESCC and freshmen day. But they would like to have some other source of income to have more flexibility and stability.

Transparency:

Many student councils lay their finances open, either on request or even via the internet. Also, usually transparency is a necessity because finances must be reported to the ministry of finance for taxes. For money that is provided by the university transparency is also always required.

Another student council brought up that they have the problem that they often make more money than they spend, since they cannot handle the fluctuation. A suggestion to solve that problem is to spend more on things like a very special freshmen week, or other events that require one-off expenses.

The last topic discussed was how parties and other events can be organised in order to be profitable. A very important aspect in this is where the equipment needed for activities and events comes from. Often the equipment is rented either by other student organisations or by companies. The main expenses at parties are drinks, food, a DJ and sometimes the location must be rented. Also, an event should rather be planned too small than too big because that way it is less risky. Furthermore, it is important to advertise the event. Social media like Facebook and Instagram is very useful for this.

Notes from the blackboard:

- Problems:
  - No money sources
- Possible money sources:
  - Cooperation with bigger clubs
  - Parties in general
  - University funding
  - Special courses (like math class)
  - Membership fees
  - Sponsorship for fairs and lectures
  - Selling old exams and skripts
  - Selling merchandise
- Expenses:
  - Freshmen
  - New equipment
  - Food and drinks
  - Excursions
  - Coffee or food for students

Fridays for Future as an International Movement and their Connections to Students

Date: 01.11.2020

Time: 14:15 – 15:45

Speaker: Jakob (FfF Erlangen) and Thilo (FfF Erlangen)

Target: Offer of an exchange platform between FfF representatives and student councils members.

Does your student council support FfF?

RWTH Aachen: No support of FfF, since the constituted student body prohibits its members from partaking in any political party.

HS Darmstadt: Same approach as RWTH Aachen because of the same reasons.

KIT Karlsruhe: One member is an organiser for FfF demos and also discusses this in his student council but every member of the council has its own decision as a person to support the cause.

FAU Erlangen-Nuremberg: They invite to the official events via email.

KTH Stockholm: FfF is a group in Sweden, but there is no discussion at the university or in the student councils.

Discussion if FfF represents a political statement?

Attendees of FfF Erlangen at the EMESCC think FfF is not a political group, because it is not opposing a specific party (just lobbyism in general).

KIT Karlsruhe does not agree with the opinion of FfF as a non political topic, RWTH Aachen and OTH Regensburg neither.

Ways to support for FfF and their cause:

- A possibility is to invite students to the demonstrations and inform in general. Also universities can be more environmentally friendly. The student council website can be utilised to put links.
- RWTH Aachen is planning to plant some trees, but the responsibility lies within the state.
- Sweden emphasises to also show the side of the industry.
- FfF Erlangen states that a way to support FfF is to show effects of climate change with some scientific facts

Possible conclusion:

It is discussed whether the workshop should release a short report with possibilities on the website to give awareness. Until now no resolutions from EMESCC were published, but it is possible. Only FaTaMa wrote resolutions and statements up until now. The resolution is to be published online for the whole EMESCC to read and later vote upon in the final plenary.

Collection for the content of the statement:

- Listen to scientists not to lobbyists
- Question the demands of activists and lobbyists
- Even small changes can have an effect (e.g. separate plastics)
- It's your future – only you can change it
- Content (3-4 sentences)
- Start the ball rolling, get aware of environment changes
- FfF: link to NASA (no political statement)
- RWTH Aachen, OTH Regensburg, KIT Karlsruhe: against links in general rather just advice to inform themself!

- FfF: no direct reference to FfF, instead write about a popular activist group or write about today's hot topic
- OTH Regensburg: FfF should not be named

HOW TO MAKE YOUR UNIVERSITY LISTEN - MAKE CHANGE

Date: 01.11.2020

Time: 14:15 – 15:45

Speaker: Sarah (DTU Lyngby) and Janus (DTU Lyngby)

Target: Exchange on how different student councils deal with decisions of their university that are not in favor of the students and on possible ways to intervene.

The motivation of the workshop was a recent change in the organization of the DTU Lyngby. The occurring problem is a space problem due to the rising number of students. The solution for it was to elongate the lecture periods until 10pm. This is not in favor of the students. The reasons for this decision are partly based on the university's effort to grow and being one of the best universities in Europe. For the university administration the introduction of evening classes was the easiest way to resolve the problem.

It was asked how other universities and student councils deal with such situations.

Universiteit Ghent: Courses are evaluated, but the impact is marginal because professors at the universities are mainly employed for the research work they conduct. The University does not carry out any consequences.

Germany: Students and student councils are heard partly. It is desired to find solutions and compromises together. An approach for the councils to make their opinions matter is to prepare for meetings for choosing staff or administrative reasons very thoroughly to the point where the students are better prepared than other attending parties.

FH Südwestfalen Soest added that there are lectures on Saturday for Dual-Students working part-time and language courses, the latter being mandatory.

DTU Lyngby was fine with electives at nighttime but mandatory courses cannot be taught this late, as some first semester students have lectures from 6pm-10pm and again at 8am-12am the next day. Professors also do not like this situation but the administration forced them to do that by arguing with US elite-universities having the same course structure. As a result lots of students drop out of university.

Universität Stuttgart had a similar situation when Diplom was changed to Bachelor and Master. The administration tried to scrap a semester-long internship.

During this discourse, the question came up, whether anyone attending has tried to make an example of a professor who behaved wrongly. In Germany professors are rarely fired because their contracts are unlimited and also not with the university itself but the respective state's government.

As a result of those topics, a discussion about different council work emerged. DTU Lyngby, for example, can do societal and political work at their uni. In Sweden there are councils for the whole university (THS) and all students have to pay for being part of this union. THS is in charge of housing. Student councils for each study subject have power over some decisions regarding their professors and

can influence the university if there are problems as they officially represent all students of the university. Also, there's an evaluation committee. Two students for every study year have to gather information about all lectures, talk to professors and evaluate them. In Belgium, discussing problems is always procrastinated and they have no way to change that. One German university explains how accreditation works there, which means that bigger changes can be made every seven years and smaller changes in between. The attending councils recommend DTU Lyngby to use evaluation as a tool for change. Publishing evaluation can also be a good way to force change.

In Sweden and Denmark there are honorary awards for best students. They are baffled by the fact that german universities do not get money for students finishing but students starting university.

The discussion switched to attendance. Germans explain that attendance is better in master programmes, but lectures in Bachelor degrees are badly attended as basics are often presented boringly. This does not happen in scandinavian countries. The workshop participants conclude that this could be due to the fact that professors in Denmark get 90% of the salary they would get in the industry. German professors get about 50%. The Scandinavians attending the workshop ask, why Germans do not rebel against this. A combination of limited influence on professorial decisions and limited time during studying for work could contribute to that.

Also, in Denmark students are allowed to only choose one Bachelor programme and study that, they cannot start another if they finished the first one. If they want to switch programmes, they will stop right before finishing the first one to start another.

In conclusion, the DTU Lyngby will try and make a survey amongst their students to portray their students' opinions on the evening course situation. There are lots of differences between the

participating countries and further dialogue will be good for all participating countries to improve their study conditions.

In attendance: DTU Lyngby, KTH Stockholm, Universiteit Ghent, KIT Karlsruhe, TU Brunswick, RWTH Aachen, Universiteit Ghent, Ruhr-Universität Bochum, Universität Stuttgart, HS Darmstadt, FH Südwestfalen Soest

PROJECT MANAGEMENT (I/II)

Date: 01.11.2020

Time: 14:15 – 15:45 and 16:00 – 17:30

Speaker: Ina Reichmann (FAU Erlangen-Nuremberg)

Target: Excurs into the possibilities that project management can offer to the work of student councils.

The goal for this Workshop was to discuss the possibilities, which the project management of companies may have for our student council work. The focus during the discussion was the definition of Project Management, such as our goals and resources. To test the newly available knowledge an own project should be worked out in groups of 3 or 4 people, which deals with the question of which projects we would like to implement.

At first it was thought about, what a project actually is and what has to be considered during projects. It came to the definition, that a project is work, which can be done by a single person or collaboratively and has a certain aim. The amount of time and quality is limited, also deadlines need to be kept. If some input is missing, that is needed to fulfil the task, the input

has to be organised by itself. The groups made some different mentions, what has to be considered during projects. The topics could be summarised to the following six areas, which consist of Project Integration, Time Management, Finances, Resource Management, Scope Management, Communications Management, Risk Management and Stakeholder Management.

Since Project Integration, Time Management and Finances had been handled by most student council members during their work, a special focus was put on the other five topics for this workshop.

It was started with Scope Management, where the SMART goals were presented, which stand for Specific, Measurable, Attainable, Relevant and Time Bound. These topics need to be in a continuous process of Action, Evaluation and Revision. Milestones can help to track the progress of the project, there are even some certain aims which could be critical for the final realisation. In Project Management a critical path is determined by identifying the longest stretch of dependent activities and measuring the time required to complete them from start to finish. The groups should now test this critical path with a self-imposed topic. The results of this SMART-Check should be presented on the basis of the topic "Organisation of the EMESSC", with the critical path "food organisation".

A short talk about Resources Management led to the question what resources are missing at student councils. The results showed need in space, money, staff, manpower, knowledge and knowledge transfer.

The group work to Stakeholder Management, which are the people who feel affected by the project, gave as a result, that it is very important, because they have different views and opinions on the project, which can be used to create better solutions for everyone. To maximise this effect they need to be included as early as possible. Another problem which can be bypassed with Stakeholder Management is the appearance of bad publicity and negative brand image, which can both have a long term negative impact on business, no matter whether the criticism was justified or not.

In Risk Management a four step plan was established quickly, which consisted in identifying the risk, assessing it, controlling it and reviewing the control afterwards. It is very important in order to find problems or mistakes as early as possible and find solutions. Two different types of measures were identified during group work. One is the Preventive Measure, which can be implemented by experienced staff before the actual process. If the project is organised by rather inexperienced people they will tend to go for corrective measures, which only affects mistakes already there.

At last a short lookout on Communication Management was made, which focuses on the topic on the question of responsibilities. The aim for a successful management should be here, that there is a clear communication of tasks and everybody needs all information for their own work.

Standardisation of European Semester Structure

Date: 01.11.2020

Time: 14:15 – 15:45

Speaker: Antonio (TU Brunswick)

Target: European universities differ in term start and end and this causes problems for students switching or exchanging to other universities.

The attending universities each shared start of the winter and summer term as well as the

corresponding examination periods to confirm the problem

	WT Start of lectures	Examination periods	ST start of lectures	Examination periods
Leibniz Universität Hannover, KIT Karlsruhe, Universität Stuttgart, TUM Munich, TU Bergakademie Freiberg,	14.10.	10.2.- until end of March Karlsruhe: until 11.11.	6.4.	ST Mid/end of July until end of August
TH Lübeck	23.9.	Mid/end of January (1,5 Weeks) and Start of March (1 Week)	16.3.	The week after the lectures (27.6.) and the week before new lectures mid-September
TU Brunswick	21.10.	Beginning of February until end of March	6.4.	Mid July until beginning of September
HS Munich	1.10.	20.1.-7.2.	16.3.	Mid July for 2 weeks
Ruhr-Universität Bochum	7.10.	17.2.-21.3.	1.4.	17.8.-19.09.
TU Darmstadt	14.10.		13.4.	

Bulgaria	Beginning/Midway of September	
Bristol	Beginning/Midway of September	
Sweden, Denmark, China	Exams before Christmas quarters/2 months 2 subjects - 2 exams	New semester starts February
USA	Semester starts earlier - Examination period also earlier	

First conclusion:

There are great differences in start and end of semester depending on the university and country. Even among universities from Germany these differences can be found. Examination periods also differ significantly in their position in time as well as their duration. These problems hinder the internationalisation of students.

To improve the situation adjustments should be made so no more overlapping occurs. Those adjustments should be introduced across the whole of Germany and also internationally to have the most effect. It is pointed out that Mannheim already shifted to international semester times.

HRK Resolution

The HRK (German rectors conference) released a position paper on 4.5.2007 titled "Recommendation for the harmonization of lecture periods at german universities" that can be found under the following link.

[https://www.hrk.de/positionen/gesamtliste-beschluesse/beschluss/detail/empfehlung-zur-harmonisierung-der-semester-und-vorlesungszeiten-an-deutschen-hochschulen-im-europaei/]

The HRK Resolution was discussed and a position paper was developed. Content of the original paper was the recommendation to shift lecture times 2 weeks at best 4 weeks back to achieve easier mobility between universities in Germany and abroad

Position paper:

The attendees develop a position paper based on the HRK Resolution in German and English language. Key points were the explanation of the German view, emphasis on the increasing attractiveness of German universities in the European Union and to foreign countries such as USA and China as well as the expected increasing number of German students doing Semesters abroad (e.g. with the Erasmus programme). Germany should have a leading role for other European countries to follow in its footsteps.

The addressee of the paper is also discussed. Universities in Germany decide their lecture times autonomously, Stuttgart for example many years in advance, therefore, the paper could be addressed to every university. The German government should

also pressure the universities into adopting synchronised lecture periods. There is also the possibility of addressing the European Council directly so all other countries follow. This process could take decades.

It is decided to vote in the plenary the next day whether EMESCC supports the position paper.

Decreasing student numbers:

The student numbers of all attending universities have been decreasing over the last few years. In Brunswick there was a decrease of 20% students starting. In Freiberg the number decreased from 60 to 28. In Bochum the numbers increased from 300 to 400 due to the repeal of numerus clausus. The numbers of student starting subjects including sustainability is increasing. One university has 700 applicants and only 350 places for a subject involving sustainability. The influence of the change from G9 to G8 (secondary school programmes taking nine or eight years) and back, which took place in parts of Germany, is mentioned. There is a big difference in numbers between applicants and enrollments for every university. It is commented that at some universities students have to accept their place to study at a very late date before the semester starts. The example referred to was a confirmation received in September with the new semester starting at the beginning of October.

The topic is then postponed to the FaTaMa for further discussion. Until then numbers of students should be determined and organised in a statistic for later comparison.

In attendance: TU Munich, University Hannover, Karlsruhe Institute of Technology, TH Freiberg, TH Lübeck, HS Munich, University Bochum, TU Darmstadt, TU Brunswick

Possibilities to Integrate Foreign (Fulltime and Erasmus) Students

Date: 01.11.2020

Time: 16:00 – 17:30

Speaker: Moritz (FAU Erlangen-Nuremberg)

Target: Exchange ideas on how foreign students can be integrated better.

The workshop started with a discussion on what the here present student councils are doing to integrate foreign students, these were:

- A buddy program.
- A specific orientation week.
- Specific student groups that organise events for the foreign students.
- On websites English translations are offered, also presentations are available in English as well.

Possible problems foreign students might encounter were discussed and the following points are found:

- Too little lectures are held in English.
- They don't take notice of the student council as a contact point.
- They don't recognise and take part in events apart from their lectures, as they are in the wrong language.
- Council meetings are held in the local language, so normally exchange students can't really participate.

The Workshop concluded that it's difficult to reach foreign students. They often prefer to stick to their own groups and partly don't want to take offers and participate in events, so if there is a party organised they often just rather have a party on their own.

At the end of the workshop some ideas were found how to improve the situation:

- One member of the council contacts these students regularly and informs them about events instead of just waiting for them to contact the council.
- Translate websites in English, especially the sites of the councils.
- Provide groups for networking, e.g. on WhatsApp, Facebook other social media and university platforms.
- Bring these students along to parties, introduce them to other people there and provide them the possibility to get to know new people.
- Events like the "Laufgelage" (running dinner) are a good way of meeting new people.

Alumni Events and How to Stay in Contact

Date: 01.11.2020

Time: 16:00 – 17:30

Speaker: Alexander Herbers (FAU Erlangen-Nuremberg alumni)

Target: Exchange information about alumni events of different councils, so serve as inspiration to all councils.

This is an overview of the alumni related events or possibilities for each council that participated:

- KTH Stockholm doesn't have any alumni events, however members would like to stay in touch.
- OTH Regensburg is hosting a barbecue event for alumni each year on an afternoon in summer, the alumni are invited via an email list.
- FH Lübeck has a google Drive to get the email addresses and connect the alumni, however sometimes people have used old mail addresses e.g. a university address to sign up, which they don't use anymore. The document is only for connecting the alumni and they need to organise any event by themselves.
- TU Brunswick is hosting Flunkyball events on Friday of orientation week and at their Christmas party.
- TU Munich collects private email addresses of alumni to contact them and organises a party with student council members and alumni. "The Club" is a non profit team which is an aid to manage finances separately from the university.
- KIT Karlsruhe marks all old student council members as inactive, the current student council therefore has no access to the alumni's data. However they host an alumni barbecue event every second year.
- Another idea is a newsletter about things done in the student council to inform alumni, maybe every two months.
- FSI CBI of FAU Erlangen-Nuremberg has a mailing list with private email addresses of alumni by which they can reach them.
- HS Munich is hosting events for alumni with their friends and families. For this they prepare a speech, organise catering, and invite every current alumni. About 1000 people are invited, of which about 200 attend. This event is for all students, not only student council members.
- TU Hamburg is hosting a homecoming barbecue event for alumni every second year.

STANDING EMESCC COMMITTEE

Date: 01.11.2020

Time: 16:00 – 17:30

Speaker: Carsten (RWTH Aachen)

Target: Discuss the possibilities to form a standing EMESCC Committee, so not every year the same work has to be done by the organising council.

The discussion moved on to what we even expect from the EMESCC itself.

Some Ideas are collected in the following:

- We represent a lot of people, we could use this power to make our opinions heard and building up some pressure on certain topics
- EMESCC should be a place for networking and knowledge exchange, for talking about what is important for mechanical engineering and what are best practices for students and student councils
- We could establish a platform for Erasmus students to look up what courses at which universities are credited at their university at home

To the question whether there should be a standing EMESCC committee or not, the participants of the workshop agreed that there should be one.

Afterwards it was discussed if there should be a difference between EMESCC and FaTaMa besides the point that on FaTaMa only german students participate. The round of discussion has not led to a result.

Therefore non-German European participants were asked if they would be interested in political work, or

if they want EMESCC to be a place for exchange and networking. The answer is difficult, as it was mentioned that the exchange is often the baseline to see how it works elsewhere and take it home for political work there.

As the Workshop got closer back to its original topic it was again asked what visions or ideas we have for the EMESCC, as many non Germans have no baseline for conferences like the EMESCC and therefore don't really know what to expect, while many Germans expect it to be an European FaTaMa

This led to a quick explanation of what the STAM (standing committee of the FaTaMa) is and does, which is mostly strategic and infrastructural work between the conferences.

It was agreed that a standing EMESCC committee should probably do the same for the EMESCC, so the structural work is given, and the host only has to provide the accommodation, food, etc.

The workshop then again drifted off to a discussion about how to get new student councils involved and advertise the EMESCC. A main topic that EMESCC is all about will be found. The following has been identified: Academic topics like to ensure the quality of the education and student council work. On this basis a slogan was created.

"The EMESCC is about European mechanical engineering student councils coming together and discussing different topics on academic and student council work topics to improve the situation for the councils and the students."

The last item discussed was who exactly the EMESCC should represent. Two different ideas were presented: either all student councils that are participating or have participated in the past, except if they state that they don't want to be represented anymore (like at FaTaMa), or have a members list of all student councils that are represented.

Also the idea to organise all protocols and knowledge of EMESCC in some sort of a wiki was suggested, however it was decided this should be discussed in a separate workshop.

Finally the workshop decided that there should be a standing committee to develop the previous discussion points further. As a first step a slack channel for all that are interested in this committee was created.

ÜBERARBEITUNG DER SATZUNG DES FATAMA E.V.

Date: 01.11.2020 and 02.11.2020

Time: 16:00 – 17:30 and 09:30 – 11:00

Speaker: Fenja (TU Brunswick)

Target: Revision of the constitution of the FaTaMa e.V. and general discussion on unclarified topics and necessary improvements for the future.

(This protocol is in German, as it is very specifically about the statutes of the FaTaMa e.V., which is a legal text, so the specific German wording is relevant.)

01.11.2019 und 02.11.2019 auf der EMESCC in Erlangen

Anwesend: TU Braunschweig, TU Darmstadt, Bochum, Stuttgart (Flurus und MACH&Co), Duisburg-Essen, Hannover, HS München, Freiberg, Erlangen, KIT Karlsruhe

Die aktuelle Satzung ist veraltet, Änderungen existieren nicht oder sind nicht mehr aufzufinden. Das Ziel ist die hier erarbeitete Satzung direkt an der FaTaMa in Braunschweig beschließen zu können.

Folgende Änderungen sind erarbeitet worden:

§1 (3) - Anpassung des Geschäftsjahres an den 01.08, weil Anpassung Abrechnungszeitraum und Amtszeiten

§1 (2) - Amtssitz des Vereins (aktuell Darmstadt): Änderung wahrscheinlich aufwendiger als dass es nutzt

§2 (4) – Vereinheitlichung der Aufzählung mit Satzzeichen

§4 (2) – Aufzählung der Personen, die Mitglieder werden können, eindeutig gemacht

§6 (4) – Vereinheitlichung der Aufzählung mit Satzzeichen

§8 - Vereinheitlichung der Aufzählung mit Satzzeichen, fassen in Paragrafen

§9 (1) – redaktionelle Änderung

§9 (6) – Frist der Einladung auf vier Wochen

§9 (8) – Ausweisen „auf Anfrage" und nicht pflichtmäßig

§9 (14) – Protokoll innerhalb von zwei Wochen

§10 (1) – „verschiedene" natürliche Personen

§10 (2) – Ämter angepasst

§10 (7) – die GO ist den Mitgliedern (und nicht der MV) bekannt zu geben

§12 (1) – Auflösung des Vereins hinzugefügt (klargestellt und eingefügt bei der Mehrheit) und Mehrheit auf 2/3 angepasst.

§13 (1) – Anpassung der Beauftragten, damit diese nicht stimmberechtigt sind

§14 – umbenannt in Kassenwart, Anpassung an den echten Namen aus dem Vorstand

§16 (1) - Vereinheitlichung der Aufzählung mit Satzzeichen

§16 (4) – ergänzt mit „bis durch die MV ein neuer Amtsträger gewählt wurde"

§18 (1) – Beschluss im Umlaufverfahren in der GO geregelt – Formulierung geändert

§20 (3) – Anpassen an die Bezeichnung der Ämter

§20 (2) – Anpassung an die Ziele des Vereins wie in §2 (1)

Wenn weitere Änderungen vorgenommen wurden, sind dies redaktionelle Änderungen.

Folgende Diskussionen sind während des Workshops aufgekommen.

Was ist der Unterschied zwischen schriftlich und Schriftform? Schriftlich/fernschriftlich heißt auch per Mail.

§6 (2) – Es wird diskutiert, ob man eine gewichtete Abstimmung wie im FaTaMa Plenum anpasst

§8 – Soll der STAM als Gremium in die Organe des Vereins integriert werden? Das soll eventuell später geschehen, wenn die aktuellen Satzungsänderungen erstmal angenommen worden sind.

Die Reisekostenverordnung soll verfasst, in die GO integriert und auf der Mitgliederversammlung abgesegnet werden.

§9 (7) – muss evtl. in 4-5 Jahren evaluiert werden, wenn die Mitgliederanzahl stark steigt

§10 (4) – Außenvertretungsberechtigter Vorstand: Kassenwart und Vorstand sollen berechtigt sein statt nur erster und zweiter Vorstand, aktuell muss der Vorstand dem Kassenwart eine Vollmacht geben. Mit der Änderung wäre das einfacher, in der GO könnte man die Aufgaben aber nochmal aufteilen.

Der Haushalt soll allgemeiner gehalten und die Posten nicht so spezifisch angeben werden. Die FaTaMa soll aus dem Haushalt herausgehalten werden, weil die Kosten nicht so gut abzuschätzen sind. Dadurch sollte es weniger Probleme mit Nachtragshaushalten geben. Außerdem kann man noch einen Satz hinzufügen, dass allgemein Geld für die FaTaMa ausgegeben wird.

§17 (2) – Es wird diskutiert, ob die Phrase „Entlastung wird erst rechtskräftig, wenn Steuererklärung vom Finanzamt anerkannt wird" benötigt wird.

HOW TO EMESCC

Date: 02.11.2020

Time: 09:30 – 11:00

Speaker: Lena Braun (FAU Erlangen-Nuremberg)

Target: Giving an overview on what is necessary to plan an event like EMESCC and collect ideas for topics that future EMESCCs should deal with.

At the beginning of the workshop an overview over the planning steps and the occurred problems was given.

- Finances:
    - The budget was approximately 25.000 €: Mostly state funding (BMBF), some sponsoring money and participation fees.
    - Application at the BMBF in March: A detailed plan was needed (calculation of food costs, accommodation costs, program, etc.).
    - Sponsoring: The goal was to have sponsoring contracts saved in June. Many companies didn't reply, some replied very quickly and some in August. A lot of calls were made and a lot of persistence was needed.
    - Participation fee: The amount of the fee was unsure for a long time. It highly depended on the BMBF application. If the application wouldn't go through the fee could have ranged up to 150€ to cover all costs. In the end the fee was at 25 € per participant.
    - No funding by the university. The only support provided were rooms, bags and cars.
- At the beginning the event was planned for 120 to 150 participants:
    - Some people applied for the EMESCC and didn't come.
    - The goal was to get the EMESCC more international. Therefore, a lot of mails were sent to universities all over Europe. Only a few of those mails were answered. Also not in every European country there are student councils or something comparable at universities.
    - The application started in august even though the finances weren't fixed, and the original gym as an accommodation hall has been cancelled.
    - In the first application 160 people said they wanted to come but a lot of people cancelled at the final registration.
    - The number of people was restricted by limited places at the accommodation and finances but in the end some places remained free.
- Big accommodation issues:

- The city confirmed a gym hall next to the university at first.
- The cancellation and change to a different gym hall in the center of the city three months before the event resulted in the need of a lot of changes of the already mostly planned event.
- To solve this issue a lot of calls and meetings with the university and the city took place. Even the mayor was included in this discussion.
- Compromise: Gym hall in the city for less money so bus tickets for every participant (1000€) can be bought.
- Result: Need to change our finance plan with the BMBF.

Questions of the participants:

- How many people organised the event and how long did the planning need?
  - 11 main organisers and 40 other people to help but it was hard finding people for night shifts.
  - Meetings every third week from December and every week beginning from March.
  - Working 24/7 from Monday to Sunday during the event.
- What rewards do the helpers get?
  - Free meals and drinks
  - T-shirts
  - Merchandise
  - Infinite gratitude

What can be changed in future EMESCCs? Collection of Thoughts.

- This event was oriented towards the FaTaMa as a model.
- More open EMESCC for new participants from all over Europe.

- More workshops made by participants.
- It was interesting talking with non-Germans about student congresses and how they are planned and financed.
- Constructive workshops like the SIEMENS presentation but only a few slots because it's a congress for student councils.
- Workshop of differences between international student councils
- How do student councils in different countries work?
- "How does EMESCC work" workshop for new participants.

Lists of Topics you can talk about each year:

- Welcome – How does EMESCC work?
- Financing
- Student council structure
- Erasmus+
- How to EMESCC
- International project management teaching
- Acquisition of new universities for EMESCC
- Perspectives of engineers after their studies (specific current topic)
- Student culture
- Education and teaching concepts
- Semester planning
- New workshop topics for next EMESCC
- How to stay in contact (Mailing lists and exchange of phone numbers)

Further Ideas:

- Telling European Parliament what could be improved at European universities (new standards).
- The organising team should write down how they organised the EMESCC for the next group (new structure). It is hard to contact people from the organisation team last year because the structure of the student council is different at the universities.
- Calling is good but not possible every time.

- Use the currently existing slack to stay in contact.

ACCESS TO LEARNING RESOURCES

Date: 02.11.2020

Time: 09:30 – 11:00

Speaker: Ursula (HS Munich), Antonio (TU Brunswick) and Oussama (TU Brunswick)

Target: Exchange on different ways to access learning materials such as scientific papers, lecture script and video recordings of lectures and problems that can possibly arise.

The first question the workshop dealt with was how students get access to scientific papers. For a lot of students free access to scientific papers is a problem for a variety of reasons, so sometimes students are in a position where they must pay for the access. Buying a single paper would not be a problem, however, for a Bachelor or Master thesis multiple references are needed and it is also not always clear from the abstract whether a paper is suitable as a reference or not. So often the money would be spent in vain. In Denmark students have access to different journals via their library for a one time payment of about 7 €. In case the library does not give access to a paper the library bears 75% of the costs of that paper. Due to that and because the university publishes a lot of papers itself, there are hardly any problems regarding the access to papers. In Germany a lot of universities use or used to use Elsevier but since some universities do not have contracts with Elsevier any more students of these universities have problems accessing papers. This is especially crucial for chemical engineers since Elsevier is their main publisher. Universities have

tried to solve this problem by negotiating contracts with new prices. The problem is that they cannot pay Elsevier, Springer and Wiley because if one publisher gets paid more, then the others want more money as well. Some universities have stopped their negotiations with Elsevier since they are unwilling to decrease the prices and decided that PhD-students should not publish there anymore. For example, the University of Applied Sciences Munich has no contract with Elsevier and the problem is not further dealt with by the university. In Sweden Elsevier grants access for all universities for 12.5 million € per year. Since Sweden has less universities, the price in Germany would probably be higher.

The participants of the workshop tried to find an answer to the questions how this should be dealt with in the future and if it will have any effect if universities continue to refuse having contracts with publishers. This is especially crucial because some people depend on reading papers and publishing with certain publishers, but the participants could not find a good solution for this.

Participants form Denmark suggested contacting the authors directly as a workaround, but this is not a permanent solution. ResearchGate also gives access to several papers and offers the possibility to contact authors.

Since this seems to be a German problem rather than a European one it should be discussed further at the FaTaMa. At the last FaTaMa the question whether writing a letter to the European Parliament to communicate the problem is an option already came up. The participants of the workshop also concluded that there is no other way but solving this problem in politics.

The next topic discussed at the workshop was how reachable professors are outside of lectures if students have questions or other problems. In a lot of cases it is possible to just stop by at the professor's office, but some professors prefer to make an appointment first or would like to only be

asked after lectures. Some professors also offer certain question times prior to exams. Usually there is also the possibility to contact professors via email, but the response time varies a lot. This topic cannot be generalised by country but is rather a personal choice of the respective professor.

Furthermore, it was discussed how professors can make learning material accessible online for students and how they deal with copyright issues. Some professors only give out printed versions of their scripts or slides to prevent problems with the copyright. Other professors upload their material to a passcode secured folder. At some universities certain lectures are recorded and the video can be viewed online. If the recordings are publicly available, this can also create copyright issues since with the recording the slides are automatically published as well. Possible solutions for this are blackening parts of the slides in the recording or making sure that the video is only accessible with a password. Uploading material to closed systems is usually not a problem, in Denmark PDFs of books that are not printed anymore are uploaded in such a closed system.

The participants of the workshop also compared how lectures are evaluated at their university. In Denmark courses are evaluated in the middle and at the end of the semester and the results of the evaluations are sent to professors and the student councils. That way the student councils can contact professors that were evaluated badly or file a complaint. Brunswick said that their evaluations are handed to the head of the Department, some complaints are further investigated, others are ignored. In Darmstadt there are no fixed evaluations every semester and some professors do them voluntarily. Usually the student council files complaints if for example exams are too difficult. In Aachen every lecture must be evaluated and in Karlsruhe the student council contacts professors if the effort for students in the course is too high.

The last topic discussed was the different scheduling of semesters. For exchange students it is difficult to take all exams because the semesters start and end at different times throughout Europe. In Denmark for example one semester goes from January or February until July or September and then the other semester until January again. Their holidays are one week in January and two months in Summer and the exams are written right after the lectures end. The date of the exam is determined by the time the lecture took place, e.g. the exams of all lectures that took place on a Monday morning are at the same date. In Germany there are generally less holidays because exams are usually taken during parts of the holidays and the semester times also vary by university. Applied universities usually have longer holidays since the exam periods are shorter. For some universities the dates of the exams are also fixed quite spontaneously, which makes planning additionally difficult. Other universities in Germany organise their exams early on.

PROJECT COURSES IN ENGINEERING PROGRAMS AND FUTURE REQUIREMENTS FOR ENGINEERING

Date: 02.11.2020

Time: 09:30 – 11:00

Speaker: Johannes (KIT Karlsruhe) and Elvis (KIT Karlsruhe)

Target: Assess what kinds of and how many project works are offered at universities and other higher education institutions and have a discussion on future requirements for engineering.

In most universities there is some kind of project work included in the course of studies. The participants of the workshop shared what these projects look like at their university and what their suggestions for improvement they have.

In Hamburg there is an ungraded practice project in the first bachelor semester which is worth eight ECTS and serves as preliminary work for the lecture "construction methods" (German: Konstruktionsmethodik). In their master's programme they have a project of 12 ECTS which is similar to a Bachelor thesis and is mostly done directly before the Master thesis. Since this project is full time it is very stressful for the students and leaves only little room for free time.

The Bachelor programme in Regensburg includes a project of three ECTS instead of a Lab course in the fourth semester as well as a project work of six ECTS in the sixth semester which is advertised by the professors. The project in the bachelor's is not graded, hence students sometimes lack motivation. The project in the master's is done in groups of about four students together with the students of electrical engineering. Bigger projects are shared by multiple groups and sometimes the same project is done by more than one group. During the project the students hold interim presentations instead of a big submission at the end of the project. It is up to the students to decide whether they want to be graded as a group or individually, whereby the aim is to achieve the best results possible. A question that arises during the planning of these projects is weather professors that do not teach on a regular basis have to offer projects. Also, the number of topics is usually tight and as a result some groups must do a project that is not in their area of interest.

In Darmstadt the bachelor includes a project that is supervised by research assistants and is done by groups of four to six students. The project includes a simulation and the results must be presented in the end. Furthermore, the students are given a list of requirements and the grading is done according to a

fixed frame. In the master's programme the students perform an advanced design project worth twelve ECTS in groups of four to six. Every institute advertises tasks for this project, which is supposed to be an introduction to scientific work. In the end research assistants and professors grade the project and the project must be defended. The project includes a budget and testing periods and is generally designed to be very flexible and for independent work. The workload of these projects is generally high, but unfortunately varies by topic and by institute.

The bachelor at the TUM includes a project in the fifth semester which serves as an introduction to research practice. Since this project has been established only recently, no further statements can be made. Furthermore, students take part in practical courses at the institutes which count as a project that is not graded but has ECTS. The institutes have a lot of design freedom regarding these practical courses. Hence, the institutes are motivated to offer them, and they differ per institute. In the master's programme the students perform a group work which is graded by the report that must be handed in. However, the report highly depends on the topic and the kind of result obtained from the group work.

Apart from that students also take part in graded practical courses, which sometimes have a focus on studying and sometimes are similar to a project.

A discussion on Future Requirements for Engineering followed. The group worked out a couple of key requirements, that the ideal engineer should meet in the future:

- Competence oriented Engineering.
- Domain Knowledge.
- Teamwork ability.
- Leadership skills.
- Interdisciplinary keystone.
- Responsibility to society.

Especially seen in the light of a decreasing number of students these requirements also create new

demands in teaching. Important topics must be part of research and it is to discuss how this can be implemented at the teaching. The teaching should also include megatrends as well as computer science, but new topics should not dominate teaching.

An approach to how this can be implemented was presented by students from TUM. There students have a great freedom of choice so more exotic topics can also be included.

Furthermore, the ability to take a broader view must be encouraged, since the engineer of the future should not have all competence himself but know who has the required competence. The core area of a mechanical engineer should be the methodical expertise and the courses of study should remain diversified.

To implement that a switch model where students can decide between digitised and common mechanical engineering is considered in Hamburg.

EXCURSIONS

On Thursday, excursions to seven different destinations were on the programme. Each participant had the opportunity to choose one of them. The offer included the SIEMENS Med Museum, Sykatec, a sewage plant in Nuremberg, ALLOD, MAN, Hydrogenious LOHC Technologies and "Inside the FAU", a guided tour of different chairs and their laboratories at FAU.

ALLOD

ALLOD is a developer and producer of thermoplastic elastomers. Their specialty are solutions for application niches, always customised to the needs of their partners. For example, the seals in

"Flensburger" bottles are made with materials resulting from ALLOD's work.

The excursion group for ALLOD traveled to Burgbernheim by bus. The journey gave everyone time to relax and enjoy the Franconian landscape. Upon arrival at ALLOD, we got a friendly welcome and met in the conference room. After a little snack we were introduced to the history and the business of the company. They showed us some of their educts which they mix to produce their products and presented a few of their customers' end-products to us. At this point all participants were asked to introduce themselves and talk about our interest in elastomers. Finally, we got the chance to explore the company buildings in little groups with one employee of ALLOD. The guides gave us a tour through the laboratories where new elastomer solutions are developed and the products are tested. We got to see the warehouse and most importantly the production line with detailed explanations on every step from educt to product. The guides who were young engineers themselves were very open and able to answer all our questions at a high level of knowledge. Before the return we had lunch with the employees and the chance to ask them more about their work in the company.

We drove back to EMESCC having new exciting know-how of the properties and production of thermoplastic elastomers in our minds, plus a goodie bag and the impression of the daily work in a middle-sized company in middle Franconia.

HYDROGENIOUS

A small delegation of 10 participants of the EMESCC got the chance to visit the young company hydrogenious. This company is a spinoff of the FAU that develops and sells a hydrogen storage technology called LOHC, which stands for liquid organic hydrogen carrier. Since hydrogenious is located just a couple of kilometers away from the

congress location, we were simply able to travel there by bus. After a warm welcome we were introduced to the principles and applications of the LOHC technology by a very clear and descriptive presentation which left room to ask questions. In a nutshell, hydrogen is an amazing energy carrier, but very difficult to handle. LOHC gives the possibility to handle, store and transport hydrogen safely. The concept is to chemically bind hydrogen to a nonflammable oil and then handle it like a liquid to transport or store it. When the time has come to use the hydrogen, it can be released again from the liquid. Possible applications of this technology are anywhere where energy is produced or needed at a larger scale.

After the presentation we got the chance to see the technology live. We were shown around the production hall, where we saw a pilot plant and peaked into the laboratories. Furthermore, we were shown plants that were currently built and almost ready to be shipped to customers. During the tour, all setups and plants were explained in detail, so everyone got a good insight. All in all, it was a great visit that allowed us a peak into an innovative technology.

SEWAGE PLANT

Our group had the opportunity to have a closer look at a sewage plant during our excursion. To get there was quite simple, as the sewage plant is in walking distance of a subway station in Nuremberg. In the beginning our guide held a presentation about the history of the plant, its layout and different stations, the canalisation system that supplies it and challenges the plant is currently facing. After the presentation there was room for our questions, which was gladly used by the participants. Our guide was able to answer all questions to the liking of the participants as he was the lead engineer that oversaw the planning and construction of the plant when it was built and therefore knew it very well.

Afterwards we went to see different stations of the plant like the fouling towers, the rakes, etc. For this our guide asked us which stations we wanted to see the most and tailored his tour to our wishes, which meant we could see all the stations we were most interested in. We even got to see inside one of the big fowling towers which was currently undergoing renovations and we also were able to go on top of it, from where we had a pretty good overview of the plant.

The whole tour was really interesting and it was nice to see a sewage plant from the inside during its day to day operations. Our guide was nice and helpful throughout the tour and always tried to cater to our needs and wishes the best he could.

SIEMENS MED-MUSEUM

The SIEMENS Med Museum is a museum about the development of medical technology. At the beginning of our tour the founders of SIEMENS were introduced. After that the participants were taken on a journey through the history of various medical discoveries. The most famous discovery is the X-ray. It was expected to be a big breakthrough in cancer research and detection but it turned out to be a breakthrough for medicinal diagnostics in general. The museum gives an overview about the development of X-ray technology over time. Apart from the X-rays the museum showed the history of computed tomography. The first object which was examined in CAT scans was a green pepper. Another well-known discovery displayed at the museum was the first cardiac pacemaker. It was very simple and only lasted for a few hours before it had to be replaced again. It marked the beginning of a new medical device which is still used today in a strongly developed variant. The development of hearing aids was also presented. There are two different types of hearing aids, which have been developed and improved over years.

In summary the museum has given an interesting and informative overview of some important developments in medical technology.

INSIDE THE FAU

The "Inside the FAU" excursion included a behind-the-scenes-tour at the institute of process machines and plants with Prof.Dr.-Ing. Eberhard Schlücker (Head of Institute), a presentation and laboratory tour at the Institute of Mechanical Process Engineering with Ph.D. Monica Distanto (Postdoctoral Research) and a visit at the Institute of Chemical Reaction Engineering with M.Sc. Philipp Rothgängel (Doctoral Researcher).

Luckily our group left as one of the latest groups, with the shortest way to go, at 8:45am, after we consumed an extensive breakfast which was followed by some second breakfast for the real hungry ones.

First we visited the Chair of Process machines and Systems Engineering where we had a one-hour guided tour of a Doctoral Researcher. After that we headed to our next station to which we had to cover an enormous distance of about 100 meters until we reached the Institute of Particle Technology. There we heard a half-an-hour talk about the researching areas of the scientists, whereupon we could examine the research areas at different stations practically, among them some particle synthesis, pilot plant scale devices and material properties. Each research group gave us an interesting presentation of about 10-15 minutes. We had to hurry to the last two, because we should not arrive late at our last station which was the Chair of Chemical Reaction Engineering. There we were expected by a former Student Council Member who supervised the excursion in this chair. First the history of the chair was brought closer to us and after that we got to see some experimental setups which deal with the Power

to Gas concept of methanation and Supported Ionic Liquid Phase Catalysis.

Our excursion ended (after a brief stop in the Tentoria) in the canteen with some food and drinks which we all were excited for after the four hour field trip but the canteen menu was recorded with mixed feelings.

MAN

To see a production of a motor in real life 19 of us made their way to MAN in Nuremberg to visit the company. While the headquarters of MAN are in Munich, the factory where different engines are built is located in Nuremberg. MAN is the biggest manufacturer of engines in the world and for example ship and truck engines are produced directly in Nuremberg. In the beginning we had to take a short walk to get to the assembly line from the entrance. While walking the tour guide gave us a short overview of the history of the company and its current situation. Unfortunately, the tour guide was not an engineer so not all process steps were explained exactly and also not all questions were answered properly. After that we heard a little presentation about the changes for the new assembly line and the magnetic rail. Additionally, we took a look at the computer-aided warehouse system. We also got to see different engines for ships, buses and trucks at different stages of production. After a short break in the cold we were shown the new cleanroom which is also used for production.

Unfortunately, because of a public holiday, the company had a shutdown period. Therefore, all machines were at a standstill. On the upside, this gave us an opportunity to get a closer look at the processes without disturbing the workers.

SYKATEC

Sykatec is a supplier for mechanical systems, cables and logistics for the electronics industry. They work on low-priced supply strategies with their customers and provide all parts imaginable in ample amounts. By this, constant supply on time is guaranteed. Customers will profit from their production know-how, modern machines and necessary certificates and authorisations. Among others, they offer welding, sheet metal work, shape cutting, surface technologies. Their products are used in the train, metal processing and energy industries.

A group of 12 students visited Sykatec in Erlangen. Upon our arrival, we were greeted by the executive director. He introduced the company to us with a presentation and explained that the company was founded as part of SIEMENS and then outsourced as a stand-alone business. After a short round of questions by us, we were divided in two groups and led through the production halls. We got to see the welding, punching and laser cutting machines in operation and visited the powder-coating unit where Sykatec coats the housings for ICE and other high speed train drives. After an hour of touring the production facilities, we met again with the executive director. We introduced our study subjects so that he could get a better understanding of what specialisations we did at our respective universities followed by another round of questions by him about our impressions of Sykatec and their products.

Unfortunately the executive director ignored the fact that three of us spoke no German by speaking German throughout his questions despite having agreed upon English for the event during booking. On the other hand, both our tour guides did a great job in showing us the production halls and sadly were reprimanded by their boss for showing us all the machines so closely.

FINAL PLENARY

Date: 02.11.2020

Time: 18:00 – 21:00

Agenda:

1. **Workshop Summary**
2. **Letter to the European Parliament**
3. **Scavenger Hunt**
4. **EMESCC 2020 Host**
5. **Flag Games**
6. **Thank You**

1. Workshop Summary

As some workshops were held at the same time during the last days one participant of each workshop gave a quick overview of the discussion and the results if there were any. All final plenary participants then had the opportunity to ask questions again or discuss a certain aspect of the topic in front of the whole plenary. Some workshops produced a policy document or resolution that the whole plenary then voted on.

- *Environmentally Friendly Council Work* (Ruhr-Universität Bochum): discussed various options to minimise waste generated at student council events, switching to sustainable supplies during those events (eg. straws or reusable cups), research local recycling options
- *Short Report of the STAM* (HS Munich and TU Brunswick): introduction to standing committee of the FaTaMa, report from METAFA (Meta-student council meeting), future of FaTaMa e.V.
- *CO_2 Footprint in Daily Life* (FAU Erlangen-Nuremberg): workshop went differently

than expected; discussion on things you need to care about to lower your carbon footprint; discussion on pros and cons of coal and nuclear power plants between different attending countries

- *Digitalisation in Machine Tool Manufacturing – SIEMENS* (Dr. Michael Kaever; Head of Technology Management at SIEMENS): was well-received among participants, focus on implementing digitised machines in a new factory, future possibilities and challenges
- *Level and Constitution of Different Courses on the Example of Machine Elements* (TU Vienna): discussion on differences in lectures and courses between attending countries and how to improve situation in Vienna
- *Regulations for Selection Processes for Exchange Programs* (FAU Erlangen-Nuremberg): discussion on unclear selection processes for exchange programs at different universities; how could standards be introduced or held up to make this process fair and transparent?
- *Women in Science and Engineering (I/II)* (FAU Erlangen-Nuremberg): find ways to encourage girls to study engineering, female participants do not want to stand out in their course, just be treated normally; how to deal with sexual harassment, who should you talk to if that happens, student councils could be contact people for that; worked on solutions to make women more comfortable studying engineering programs, see detailed protocol for this workshop for practical suggestions
- *Sustainability - Theory and Practice* (FAU Erlangen-Nuremberg): life cycle statistics; insights in research and approaches for being more sustainable at Erlangen
- *Acquisition of New Participation Countries and Universities* (FAU Erlangen-Nuremberg): discussion on finding new countries and universities that want to join

EMESCC; what to do to motivate new people; how to stay in contact so you can use the information in the following year and don't have to start from scratch; inform new student councils on what to do at EMESCC so they can get an idea whether they would want to join

- *Recruiting of New Student Council Members* (Universität Duisburg-Essen): discussion on ways to recruit new student council members and how to keep them in the student council
- *German Quality System* (RWTH Aachen): accreditation system in Germany and its differences to Austria; students are interested in being auditors, FaTaMa allows to set up an accreditation pool if more than 5 German student councils want to do that and are present; voting on this issue by participating German student councils (each candidate has to be elected with yes votes; abstentions are allowed, if the candidate receives only one no vote he will not be elected as an auditor):
  - Ousama (TU Brunswick) would like to be the candidate - 17 yes of 27 votes, zero nos, rest are abstentions or are as non-Germans not allowed to vote
  - Jannis (University Hannover) would like to be the candidate - 21 yes of 27 votes, zero nos, rest are abstentions or are as non-Germans not allowed to vote
- *Industry Internships* (Universität Stuttgart): exchange of experiences on industry internships (requirements and regulations); regulations in Stuttgart are currently being changed
- *Financing of Student Council Work* (FAU Erlangen-Nuremberg): possible money sources of student councils; what is money spent on, on what can it be spent (university, state or country regulations)

- *Fridays for Future as an International Movement and their Connections to Students* (FfF Erlangen): two guests from the Erlangen Fridays for Future movement
  - Question to plenary: Do we as student councils support Fridays for Future?
  - Resolution/statement on support for FfF/this topic in general; voting by all participants present on the following statements:
    - Demand Awareness for climate and environmental change.
    - EMESCC (European Mechanical Engineering Student Council Congress) 2019 has decided to spread awareness to all European student bodies concerning discussions and workshops about global environmental and climate change.
    - We want the student councils and students in Europe to inform themselves about the scientifically proven facts. Being cognisant of the accuracy of research brings sustainable advantage for every single person.
    - As the engineers of tomorrow, we need to be aware of our own future and know that only we can change it now.
    - Every small change has a big impact on our future.
  - Problem: Swedish council cannot vote on things like this without asking their council (have to follow their charter's procedure meaning all 8 officials attending EMESCC have to announce a meeting on a topic the day before, meet, discuss and vote on the topic); Vienna has the same problem - topics to vote on have to be announced at least a day before to ensure all participating councils can actually vote on it
  - Proposed fix for now: do not vote but talk about it now, we'll ask those that are not allowed to vote right now again next week and then they can sign the resolution subsequently
  - Suggestion: workshop at next EMESCC about how to go about those kinds of votes in the future, because without rules like this even one "NO" vote will nullify the whole voting
  - Support by EMESCC as an institution is only possible if everyone voted
  - Idea: form a committee NOW that decides things like this until then
  - For all councils that cannot vote now: Erlangen will provide info material, the respective councils will then vote on it, write an email to Erlangen after EMESCC and tell them your vote on it. This way the resolution can be done properly
- *How to Make your University Listen - Make Change* (DTU Lyngby): workshop prompted by problems at DTU regarding longer university days and not listening to students' feedback; open discussion about communication between councils and university; how much influence do councils have on administration

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- *Project Management (I/II)* (FAU Erlangen-Nuremberg): Project management on small and big scales; presentation sheets are available; workshop gave a good look into project management
- *Standardisation of European Semester Structure* (TU Brunswick): most of the European countries start their semester in September but Germany starts in mid-October; creates problems for Erasmus students because they have exams at the same time as they would have to go to a different country for the exchange; how could this be aligned?
- *Possibilities to Integrate Foreign (Fulltime and Erasmus) Students* (FAU Erlangen-Nuremberg): discussion on problems to get in contact with foreign students studying at university; how could they be integrated in student life
- *Alumni Events and How to Stay in Contact* (FAU Erlangen-Nuremberg): very appreciated by alumni to get invited to events from time to time; not that easy to contact them sometimes; events that are advertised specifically for alumni and invite them to parties; events on Friday or weekends are best to not cause scheduling conflicts for working people
- *Standing EMESCC Committee* (RWTH Aachen): establishing a standing EMESCC committee for making rules on how the EMESCC should work and be organised (voting, workshops, etc.) similar to STAM for FaTaMa; what is the purpose of EMESCC; how should it work for all councils; do certain countries need to meet specific requirements; how could you form a standing committee that keeps the movement going; establish slack channel (KTH will do this) after final plenary where interested participants can join if they are interested in properly planning this committee; try and make it work for all countries; at the moment EMESCC follows

mostly the German way of doing things - should be a mix of all participating countries
- *Überarbeitung der Satzung des FaTaMa e.V.* (TU Brunswick): constitution for FaTaMa society, rules for process of FaTaMa; changes on constitution happening now, pass those changes next FaTaMa
- *How to EMESCC* (FAU Erlangen-Nuremberg): what did we do this year to prepare; also talked about permanent topics for each EMESCC so universities interested in hosting next year know what they have to pay attention to
- *Access to Learning Resources* (HS Munich and TU Brunswick): started as description of the German problems of availability; turned into a discussion on differences in learning resources between the universities
- *Project Courses in Engineering Programs and Future Requirements for Engineering* (KIT Karlsruhe): plans to implement a project course in their Bachelor; collection of different approaches of other universities
  - resolution with 6 categories on what a mechanical engineering student should know and have to do during their studies; what do we think as a European student body is necessary for all mechanical engineering students to learn and know in Europe; resolution with a blank space for respective council to sign it if they want to
  - KTH sees this as the most important thing about EMESCC to try and compare different university structures and find better or new ways to change study programs
  - suggestion: ask different companies about what they want in an engineer
  - prepare for a bigger discussion in the future about this

- no vote on it today; more research is needed on this topic to use it as a baseline in the future
- Question: How would KIT use the document? Possible future uses are discussed but it's hard to decide anything right now; will be a question for the standing committee
- Decisions made too quickly will not do us any good
- think about structuring next EMESCC differently so that workshops are known longer in advance; giving time to prepare and announcing resolutions/voting at least a day before to ensure every university can vote on it

2. Letter to the European Parliament

- Carsten (RWTH Aachen) presents a letter that is supposed to go to European Parliament, he'll send it to each council to then decide what to do with it
- Proposal: if there are important resolutions presented here a decision can be made only with a legal basis like STAM (standing committee for EMESCC)
- This standing committee must have participants from each country present and one representative from STAM voting for German universities
- Problem: We do not have any rules to vote on things like this
- Proposal: Work on this topic until next EMESCC in smaller group of people interested
- Proposal by DTU: form a panel that finds a solution to these problems and defines a code of conduct/rules we abide by; can then be presented as a workshop at next EMESCC à KTH started a channel in slack for all interested parties

3. Scavenger Hunt

- Scavenger hunt was done to connect students from different countries and universities
- The winner is "*Prime8s - 8 is a prime number*"
- Presentation of pictures the teams took in Erlangen (favourite bikes, Markgraf Friedrich at Schlossplatz and other stations they had to complete)

4. EMESCC 2020 Host

- Someone wants a Spanish university to join and do it because it's warmer there
- Unofficial rule: once in Germany, once abroad
- Sweden is problematic: their board is elected for a year only, they would have to choose for the next board without them knowing; but they have board members that decide on what's happening in their council; so it might be possible for an EMESCC in 2-3 years, they can think about and vote on it
- Vienna will discuss with their other members at home, but they are not sure at all if anyone is interested
- How should EMESCC be in the future à makes it harder to decide because without the pre-work this would be impossible
- If no one wants to say anything right now, there's a risk that no one will do it
- FH Dortmund wanted to do it 2019 as well, but Erlangen was further in planning and because of that the Dean told them no for next year
- Maybe decide on 2021 instead if that's easier - hard because none of us will still be here - laughter from all German students due to Regelstudienzeit

- KTH can decide in December on maybe doing 2021
- 10 min break to think about it
- no results

5. Flag Games
- Whose council flag has been stolen?
- KTH stole flags from Darmstadt TU and Brunswick, TU; KTH carries their songbooks everywhere, to pay for the stolen flags KTH will sing, losing universities try and copy their singing
- Mach&Co stole the mascot (the elephant Flurofant) from FLURUS (both Stuttgart); losers have to do the Fliegerlied dance
- Darmstadt sings for all participants
- Improv Theatre for FH Dortmund by HS Munich, because Munich stole their flag

6. Presents for the host student council
- Participating councils brought presents from home for the hosts to introduce them to their traditions, food or drinks specific to their country or region.
- The final plenary concluded after presenting those gifts and the participants went for the final dinner at EMESCC of 2019.

ACKNOWLEDGEMENTS

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