**German Jordanian University**

**GJU-Network „Industrial Engineering“**

**Network Meeting 2019**

**University of Applied Sciences Aalen 01st – 02nd July 2019**

**Minutes**

Attendees:

Prof. Dr. Ulrich Holzbaur, Hochschule Aalen

Prof. Ralf-Christian Härting, Hochschule Aalen

Prof. Dr. Alice Kirchheim, Hochschule Aalen

Dr. Safwan Altarazi, Dean School of Applied Technical Sciences (SATS), GJU

Dr. Saleem Ramadan, Exchange Coordinator Industrial Engineering, SATS, GJU

Dr. Sameer Aldahidi, Exchange Coordinator Mechanical & Maintenance Engineering, SATS, GJU

Stefanie Kirsch, Network Coordinator, GJU

Prof. Dr. Ulrich Bauer, Hochschule Kempten

Lorenia Bauer-Garcia, Hochschule Kempten

Prof. Dr. Viviane Wolff, Hochschule Fulda

Christine Barthelme, FH Wuerzburg-Schweinfurt

Prof. Axel Zimmermann, Hochschule Aalen

Prof. Dr. Thomas Burghardt, Hochschule Aalen

Martina Kübler, International Office Hochschule Aalen

Excused

Prof. Dr. Volker Siegismund, DHBW Mosbach

Prof. Dr. Tobias Pfeifroth, EAH Jena

Prof. Dr. Michael Fischer, EAH Jena

Minutes

Stefanie Kirsch, Network Coordinator, GJU

**Monday 1st of July**

Prof. Dr. Ulrich Holzbaur welcomed the participants of the Network meeting as the Dean Prof. Dr. Ingo Scheuermann was excused, the official welcome was followed by an introduction round of all participants. Prof. Dr. Axel Zimmermann presented the faculty of Industrial Engineering at Hochschule Aalen and Prof. Ralf-Christian Härting who is responsible for international relationships at the faculty of Industrial Engineering introduced the four departments Industrial Management, International Business, Health Management and Business for Small and Medium sized economies (SME) with around 2500 students. He mentioned that the faculty focuses on new topics such as Design Thinking, Artificial Intelligence (AI), Digitalization and Management 4.0. Prof. Dr. Alice Kirchheim who recently joined the Industrial Engineering faculty at Hochschule Aalen is responsible for Industrial Management. Both Prof. Härting and Prof. Kirchheim showed interest in student & lecturer exchange with GJU.

Prof. Dr. Ulrich Holzbaur held a presentation (PPP attached) about Hochschule Aalen with the four biggest faculties Mechanical Engineering, Management and Business, Industrial Engineering and Computer Science, Mechatronics and Optics. In Industrial Management similar to SATS Industrial Engineering is connected with Logistics and Controlling. Hochschule Aalen has 3D printing labs that are part of the faculty of Industrial Engineering and Mechanical Engineering and Mechatronics. Prof. Holzbaur presented his teaching approach called “espresso” – learning by projects where students chose their project given by the professor and all projects are done with real customers/stake holders which indicates that students have to deliver real projects to the customer at the end. All projects are goal-oriented. The courses follow a scheduled PPM (prepared project method) where students continuously learn about project management. Prof. Holzbaur gave many practical examples such as students supporting urban gardening, barrier free mobility and joint projects with high schools in Aalen. His students also learn sustainable event management with participation at a local event called “Tag der Regionen”. They invented a smoothie bike, solar steem engines and the keep-cup project (Mehrwegbecher). Students learn about the human side of ressources (two sides of mining), organize a sustainability slam and participate in Model United Nation projects. Hochschule Aalen applies new teaching methods like flipped classroom projects and includes Youtube videos into the classroom, students discuss in the classroom and present a report at the end – all in English. This is a first step towards publishing a scientific paper. 50% of the lectures at HS Aalen are taught in English. Project based teaching trains the skills of the students and has an output on society through their projects.

Prof. Holzbaur structures his scheduled project teaching during the semester one week of lecture first, while during the second week he offers the students a list of 20 projects to select one and work on. One student out of 80 will be the project leader of the group and the professor is only communicating with him during the project phase. Every month a presentation about the project work has to be held. The professor is in contact with the student only via email. All students have to follow a work-break-down structure, present their schedules and risk analysis so they can also learn from the project work of the other 19 student groups. Nevertheless HS Aalen offers a lot of formal courses on Industry 4.0 and Artificial Intelligence. Prof. Ulrich Bauer from Hochschule Kempten supports the Aalen approach and teaches in a similar way, he introduces a topic via lecture and then the students have to do their own project. He confirms that students learn more from other students and their own project work than from the professor’s Frontalunterricht, the improvements can be clearly seen throughout the semester.

Dr. Safwan Altarazi gave a presentation (PPP attached) about GJU and the School of Applied Technical Sciences (SATS), that is with 1000 students one of the biggest faculties at GJU. Since last semester a Master in Engineering Management is offered, still in progress is a Master of System Engineering, Dual Studies program and the German Accreditation. A future plan is to have an Industry 4.0 Research and Training Center. Within the last 5 years the number of students doubled, 200 students per year are accepted at the faculty. 15-20% of SATS students do their 3rd year and graduation project in Germany. SATS has many research projects with GJU seed funds, SRSF from the Jordanian Ministry of Higher Education, Erasmus, EC-Tempus and DAAD. Dr. Safwan invited all participants to join the 2nd Conference ISME 2019 from 11th-12th November held in Jordan.

Dr. Saleem Ramadan gave a presentation (PPP attached) about his Department of Industrial Engineering. At HS Aalen he achieves that his students can also take elective courses at SME Management. Dr. Ramadan emphasized the schools challenge of next year as in February 2020 around 90 SATS students will go to their study semester to Germany. The Departments of Industrial Engineering is moving towards Systems Engineering (Lean Tower Management) and plans to include courses to support student’s communication skills in the curricula. GJU students at HS Aalen made positive experience when integrated in project work.

Christine Barthelme from Fachhochschule Würzburg-Schweinfurt (FHWS) presented a university of Applied Sciences with two campuses while the campus in Schweinfurt offers more technical majors as the city is rather industrial. Co-supervision with a German and a GJU professor was discussed especially for Master of Engineering with FHWS special core competence, such as 3D printing or Industry 4.0 via email co-supervision. Prof. Ulrich Holzbaur from HS Aalen was interested as well and planned to identify another colleague. Furthermore twin certificated classes could be attended e.g. Business & Engineering in English and Industrial Engineering in German. The idea of a Double/Dual Degree program for the Master program was negotiated, GJU and Hochschule Aalen were interested because the GJU Master includes no German Year. Prof. Ralf-Christian Härting from HS Aalen gave a short presentation and the SATS professors emphasized that GJU looks for cooperation on lecture and thesis level, joint teaching and supervision.

Prof. Bauer from HS Kempten suggested to approach SAP in order to sponsor labs at GJU campus. This idea will be followed up by Stefanie Kirsch with the Head of the Office for Industrial Links at GJU, Britta Kähler. Then Prof. Bauer held a presentation about his Flying Faculty (FF) stay at GJU and shared some critical points to improve the program (see PPP attached). Firstly he suggested that recruitment of FF professors must become more systematical. Dr. Sameer suggested to up-date the list of matching Dean and Departments to distribute and reach potential people. Dr. Bauer had the idea to select FF professors by rehersal. The Flying Faculty professors could offer new and cutting edge topics as guest lectures at GJU that are also open to other faculties. He himself would like to offer a lecture about management and soft skills and Dr. Lorenia Garcia Bauer about Intercultural Communication at the German Language Center. For better preparation FF professors need a clear guideline where to teach (which GJU school) and some sort of coaching before they start teaching at GJU, especially for Flying Faculty professors teaching for the first time a questionnaire is not enough. Regarding getting around in Jordan he suggested a map with all important sights would be helpful.

Martina Kuebler, from International Office at Hochschule Aalen, announced that since 2008 there have been 100 GJU students at HS Aalen. From this number of students about 50% were problematic cases, like students with weak language competence in German and English, students not attending the language courses or having problems to find an internship because they started applying too late. Improvements at GJU have been done and were presented towards the network members. The fact that the intercultural training at GJU is compulsory again and the Code of Conduct was re-implemented got positive feedback from all sides.

By discussion the SATS professors Dr. Altarazi and Dr. Ramadan achieved to have more seats to distribute their future students at FH Würzburg-Schweinfurt, HS Fulda and HS Kempten. They alongside decided to develop applied project management with HS Aalen and FH Würzburg-Schweinfurt. Especially Prof. Härting was interested in joining a Summer School for Engineering students and suggested to get in touch with the Graduate campus (Weiterbildungsakademie) of HS Aalen. The person in charge, Ms. Janina Bohler suggested in a separate meeting with Stefanie Kirsch at the Graduate Campus to come with a group of 30 students (part-time workers) for a one week to GJU with funded short-term program between February and May 2020. Stefanie Kirsch is following up on the project and will keep the professors at SATS informed.

Further cooperation within the Master programs and in Research was discussed. Prof. Härting also established the link to the Dean for student affairs [Prof. Dr. Christian Kreiss](https://menschengerechtewirtschaft.de/dr-christian-kreiss-2) on the Master level in order to offer GJU students courses and mixed modules from different programs at Hochschule Aalen Business School. Participants of GJUs Train the trainer program can visit SAP lab and Industry 4.0 laboratories at HS Aalen. In terms of research collaboration Dr. Saleem Ramadan explained that at GJU an associate professor needs at least 8 publications to become an assistant professor. The idea of establishing a group within the network to elaborate joint research topics was discussed and Dr. Safwan Altarazi suggested also to include student groups with their MA thesis. HS Aalen currently focuses on 5 research topics:

1) Digital Transformation

2) Health Care Management

3) Industry 4.0

4) Labour 4.0

5) AAUF Compliance Management

Prof. Härting recommended the website [www.kmu.aalen.de](http://www.kmu.aalen.de) for further staff exchange with GJU professors to develop more ideas on joint research.

Dr. Safwan Altarazi advertised the Jordan Engineers Association JEA conference <http://www.jeaconf.org/isme> from November 11 - 13, 2019 in Amman. The network members were encouraged to register and participate in the conference.

**Tuesday 2nd July 2019**

Dr. Thomas Burghardt offered the participants of the network meeting a visit to the Industry 4.0 lab at HS Aalen. Then the GJU students Lubna, Laith, Yazan gave insights in their German Year experience at HS Aalen and presented the projects they were participating in (Sustainability project, Smoothie bike, Quality Management, Management of sustainable events in an international team with German and other students). During their semester abroad the students take around 30 ECTS. Regarding their language competence they said B1 level of German is not sufficient to attend lectures in German. At GJU learning 6 semesters of German with 120 contact hours per semester begs the question if 720 CH can be better used.

Dr. Safwan summarized the topics discussed during the network meeting.

* Dr. Saleem Ramadan will collaborate in Research and on Master level with Prof. Härting
* Industry 4.0 lab can be used by Train-the-Trainer participants
* SATS increased number of seats with HS Fulda, HS Kempten and FH Würzburg-Schweinfurt
* SATS students can take courses from different Departments at HS Aalen (case by case decision)
* SATS students can take part in SAP lab at FH Würzburg-Schweinfurt
* GJU will accept more incoming students from their partner universities

Achievements:

* For students: Project-based courses like in Aalen, Increase number of seats
* For labs: Industry 4.0 with HS Aalen, Labs with FHWS, Establish labs at GJU with donor/funding from SAP or Festo, maybe apply at German Foreign Ministry for all TNE projects
* For Master: Course supervision with HS Aalen and FHWS, Flying Faculty
* For research: Five research topics to collaborate in Digital Transformation, Health Care Management, Industry 4.0, Labour 4.0 and AAUF Compliance Management. JEA Conference in November 2019 in Amman advertised.

A new Network head needs to be nominated as Prof. Dr. Ralf Schumann from EAH Jena asked for a successor. Prof. Dr. Elke Stadelmann from FH Würzburg-Scheinfurt and Prof. Dr. Alice Kirchheim from HS Aalen were asked and the vote will be done via email and announced during the next network meeting.

**The next Network meeting will be held on 1st and 2nd of April 2020 in Amman.** It will be one joint SATS Network meeting on GJU campus involving the three Departments Mechatronics, Industrial Engineering and Mechanical Engineering.