



Modules Summary

Stefan Hillmann | TU Berlin | MIELES | Barcelona, January 9–10, 2020



Overview Main Activities

- Participation in SWOT Analyses and Strategy Development
 - SWOT Analysis for TUB
 - Analysis of Indian partners SWOT Analyses regarding pilots
- Pilot MOOC Multimodal Interaction
- Training Events
 - Study Visit to Berlin on Digitalization in HEI, April 15–16, 2019
 - Training on e-Learning Methods in Chennai and Bangalore, August 12–14, 2019
- Recognition of NPTEL courses at TU Berlin
- Participation in several activities like workshops and project quality control




Potential Pilots from SWOT Analyses and Action Plans

- CoPro HQ
 - Platform to **collect** and **provide high-quality** open online-learning resources for selected teaching topics
- LLP
 - Enabling Indian partners to setup and maintain a **local** (institutions intranet) learning **platform**
- ixBL
 - **Inexpensive blended learning** using limited resources and open source tools
- MMI
 - **MOOC on Multimodal Interaction**



Motivation for the MOOC Multimodal Interaction Course

WE8




Human-Computer Interaction

Syllabus Course Content



Computer Science and Engineeri...

VIDEO



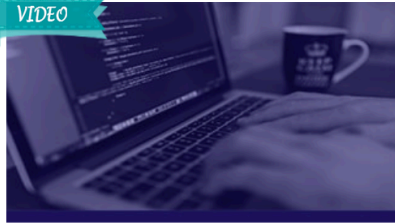
NOC:Interaction Design

Course Content





Engineering Design ,IIT Guwahati

VIDEO

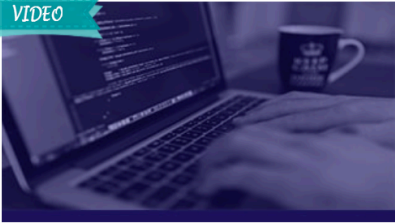


NOC:Introduction to Human Computer Interaction

Syllabus Course Content



   

VIDEO



NOC:Multimodal Interaction

Course Content

Computer Science and Engineeri...

- (Only few) HCI-related courses (in 2018) at NPTEL
- Existing know-how and resources at TU Berlin



Lecturers



Prof. Dr.-Ing.
Sebastian Möller



Prof. Dr.-Ing.
Jens Ahrens



Dr. Benjamin Weiss

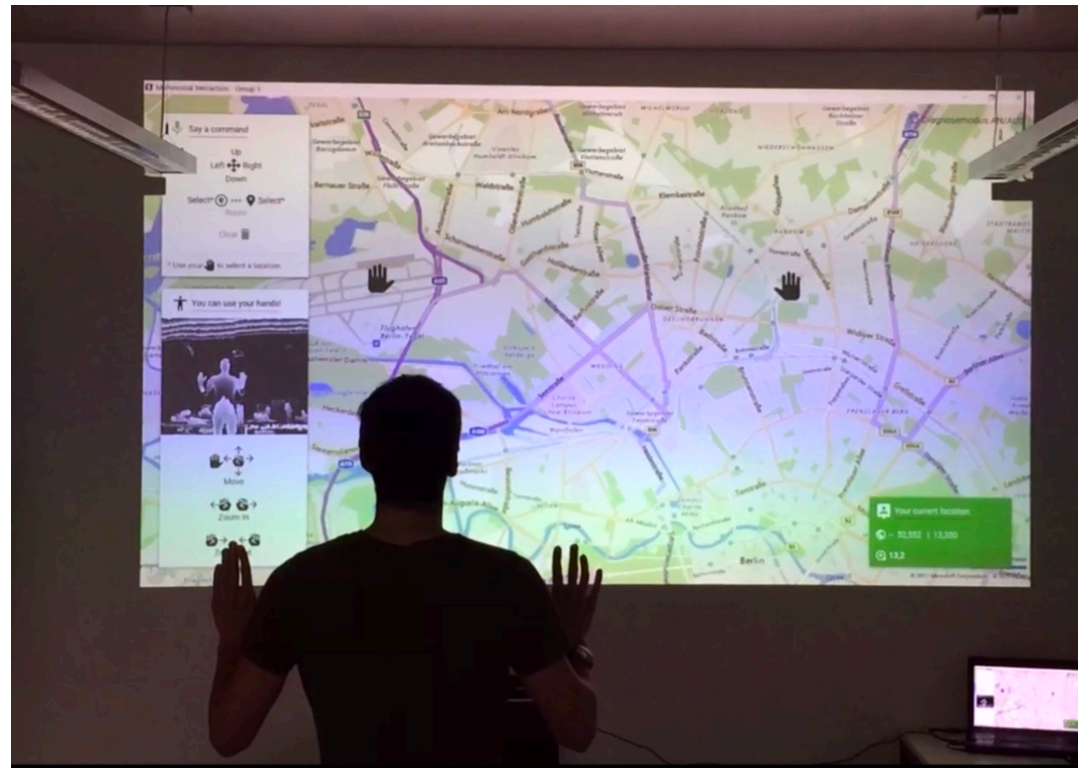


Dr.-Ing. Stefan Hillmann



Course Content

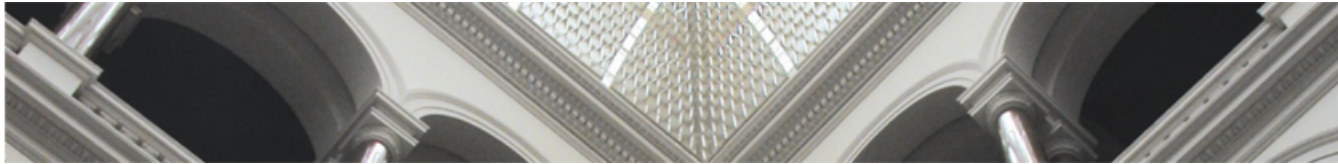
- Multimedia and Multimodality
- Hearing and Speech
- Vision
- Other Senses
- Integration and Cognition
- Multimodal Perception
- Human Multimodal Interaction
- Multimodal Input and Output Systems
- Multimodal Interactive Systems
- Virtual Environments





Running the Course

- 4 weeks (February 25 until March 24, 2019)
- "business as usual" in a MOOC:
 - Answering questions in the forum
 - Publishing material in time (thanks to NPTEL)
 - grading of assignments (problems with plagiarism)
- Exams were carried out in late April, 2019



Course Creation

Material:

- 4 topics were completely revised and newly post-produced:
Multimedia and Multimodality, Hearing and Speech, Vision, Other Senses
- 1 completely new topic produced: [Audio in Virtual Environments](#)
- New introductions to all topics produced
- New weekly assignments created
(instead of a manually graded programming task)
- 1 new electronic exam was developed



Enrolments

Student Participation

432

Enrolled Candidates

101

Registered

95

Present

Results

0

Gold (90 and above)

0

Silver (75-89)

7

Elite (60-74)

35

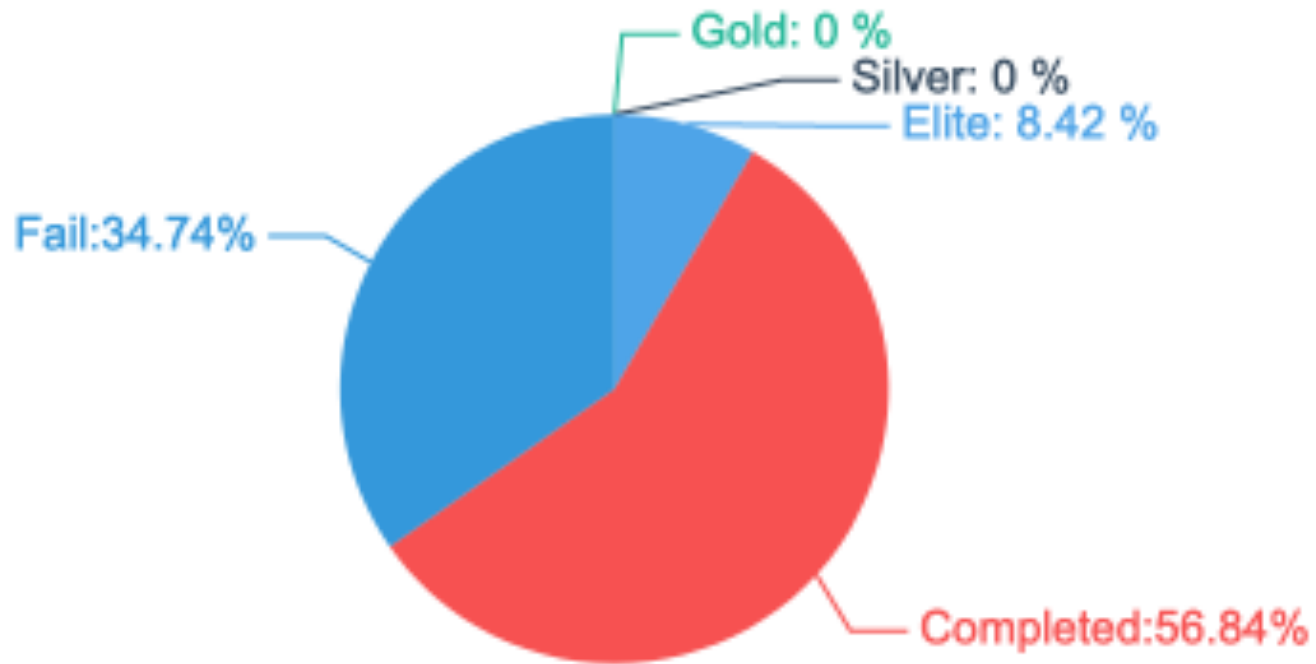
Completed(40-59)

53

Failed(less than 40)

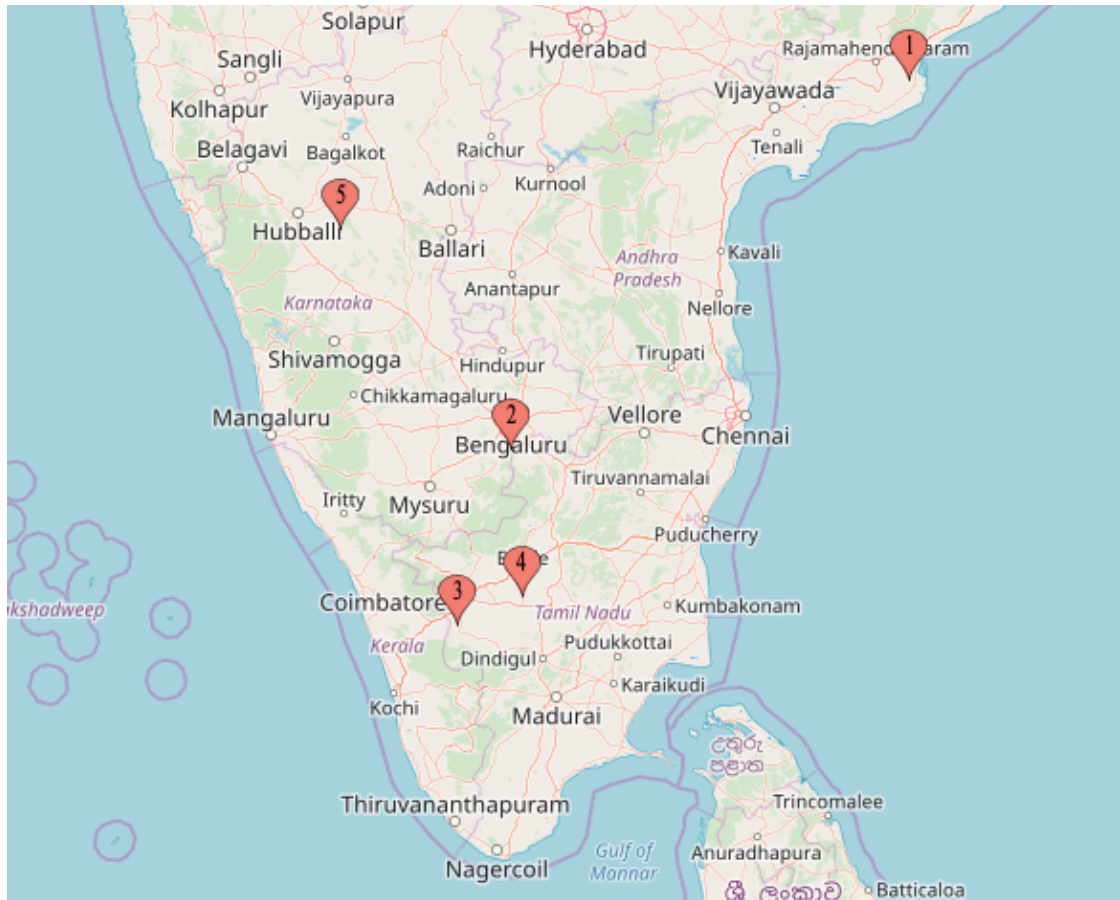


Course Results

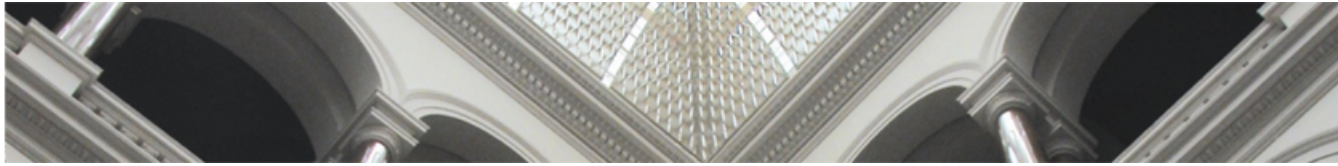




Enrollments – Top 5 Colleges



1. ADITYA ENGINEERING COLLEGE, SURAMPALEM, **ANDHRA PRADESH.**
2. NEW HORIZON COLLEGE OF ENGINEERING, BENGALURU, **KARNATAKA.**
3. PSG COLLEGE OF ARTS & SCIENCE, COIMBATORE, **TAMIL NADU.**
4. KONGU ARTS AND SCIENCE COLLEGE, ERODE, **TAMIL NADU.**
5. SMT KAMALA AND SHRI VENKAPPA M AGADI COLLEGE OF ENGINEERING AND TECHNOLOGY, GADAG, **KARNATAKA.**



Plagiarism in Assignments

Task:

“Describe the difference between Multimedia and Multimodality in maximal 600 Words.”

Answers:

- Copy and Paste from a scientific article (33)
 - No one referred the article
 - Often even copy of formatting and references to (not copied) figures and literature



Acknowledgments

Thanks to Benjamin Weiss, Jens Ahrens and Rahul Swaminathan for their efforts in the content creation and giving the lectures!

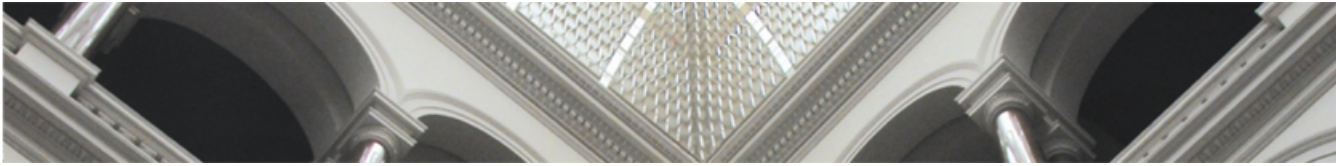
Thanks to TU Berlin's ZEWK team for recording, producing and re-producing the videos!

Thanks to the team(s) at NPTEL for support in course creation, exams and assignments creation and transcription of the videos as well as very fast responding to all my requests!



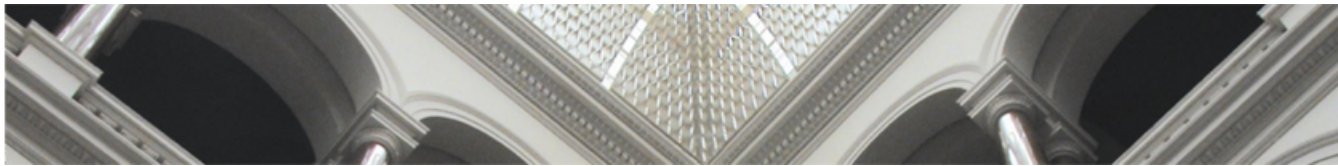
Lessons Learned (Observations)

- Differences in Learning and / or Teaching cultures
 - Same course at TU Berlin: ~ 90 % passed
(vs. ~ 65% passed on NPTEL-course)
 - Plagiarism was an issue
 - Assignments and exercises should be adapted
- Recognition of NPTEL courses by EU partner universities not finally negotiated but possible



Study Visit to Berlin (April 2019)

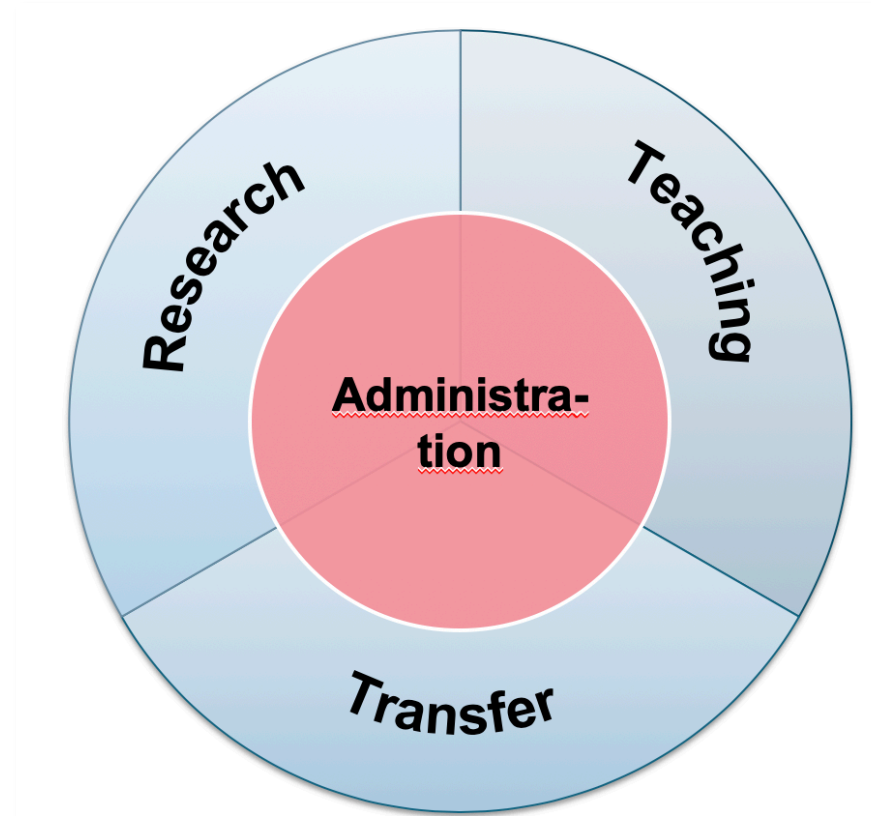




Digitalization at TU Berlin



Prof. Dr. Hans-Ulrich Heiß
Vice President for Education,
Digitalization, and Sustainability





E-Learning at TU Berlin



Dr. Anja Wipper
Center for Scientific Training and Cooperation

Topics

- Services provided by ZEWK (Center for Scientific Training and Cooperation)
- Ways and methods about providing (electronic) learning material online
- Online courses and MOOCs
- Methods like flipped classroom or audience participation (e.g. Kahoot!)
- Blended learning



E-Assessment at TU Berlin



Gabriela Fernandes

Center for Scientific Training and Cooperation,
E-Learning in Higher Education Teaching


Topics

- What is e-assessment and possible scenarios
- Rewards & risks
- Taxonomy of learning objectives & didactical issues -> constructive alignment
- Question types in Moodle
- Quality assurance



E-Assessment at TU Berlin

Taxonomy of cognitive learning objectives (Bloom, 1956)

- Evaluation* 
 - Synthesis*
 - Analysis
 - Application
 - Comprehension
 - Knowledge
- Judgement: Give reasons which learning theory in your opinion allows best to build competences to deal with complex situations.
- Problem solving: Design a learning activity for each learning theory and give reasons for your choice of learning methods. _
- Compare the three learning theories regarding the role of the teacher. _____
- On which learning theory are dog trainings usually based on?
 cognitivism constructivism behaviorism
- What can a teacher use Moodle for? _____
- Which Learning Management System is used at TU Berlin?
 Moodle Blackboard Ilias Clix



Training Events in in Chennai and Bangalore (August 2019)

Events

- August 12, IITM Chennai: Training on course evaluation methods
- August 13, ISSc Bangalore: Multiplier Effect Event about case studies on online courses
- August 14, AID Karnataka (Bangalore): Training on course and exam construction

Trainer

- 4 Trainer from KTH, TU Berlin and UOP
 - Carl-Gustaf Jansson, Rajeev Thottappillil
 - Gabriela Fernandes
 - Christos Koutsambelas

Participants

- ~75 participants from Indian institutions in total
- 5 guest speakers



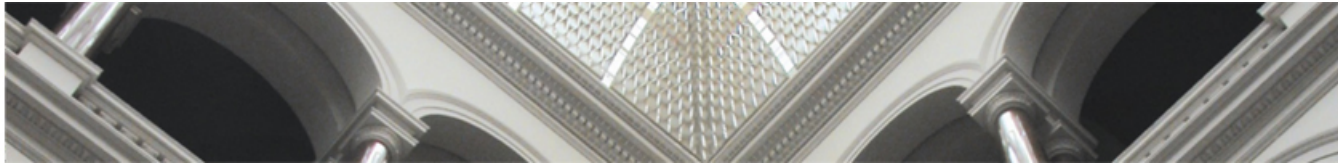
Contributions to Training Events in in Chennai and Bangalore (August 2019)

Learning Outcomes and Competence

- Shift from Teaching to Learning
 - **Competence = applying** knowledge + skills + attitudes & values



- Constructive alignment -> assessment drives learning
- Taxonomy of cognitive learning objectives
- Planning of exam questions & syllabus



Contributions to Training Events in in Chennai and Bangalore (August 2019)

Item Analysis

- Item difficulty
- Item discrimination
- Effectiveness of distractors
- Application in NPTEL

Guidelines about multiple-choice item-writing

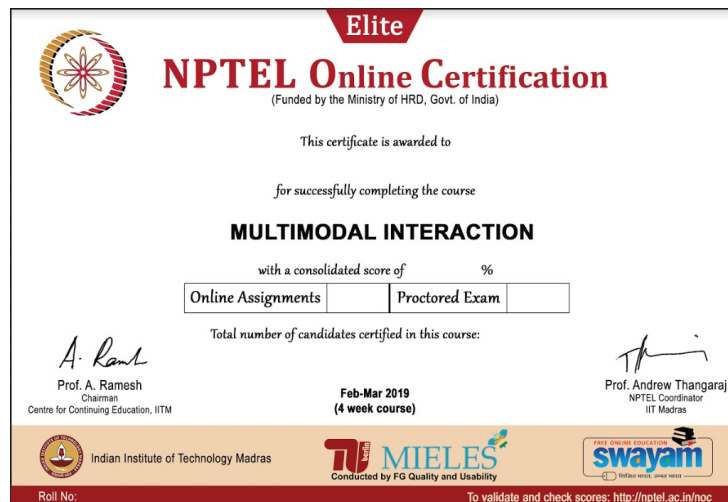
Improvement in the methods for course and assignment construction



Recognition of NPTEL courses

Necessary: Certificate

- **Important: For TUB the University on the (NPTEL) certificate counts, not the university to which the applicant was subscribed before (the first one has to be the recognized one)!**



Credit points + conversion to hours should be added.

Optional: Available course description (syllabus)

- Exists for every NPTEL course, at least in the archive



Thank you for your attention!

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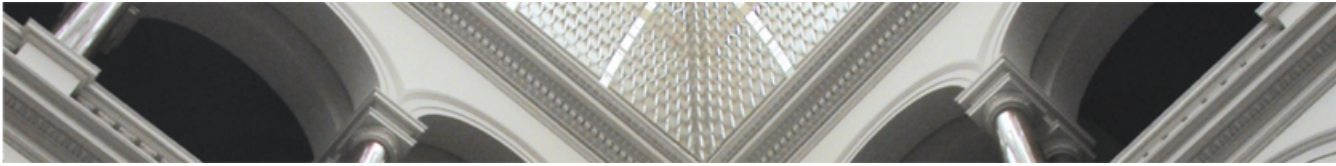
Student's Feedback I

- Lecturers speech are very clear. **Showing examples of the concepts in video is phenomenal. Appreciate the fact the lecturer/session video is not beyond 30 min**
- Good exposure to the content.
- Tough to answer and understand the concepts...
- Content **should be a bit more practical.**
- Interesting course.
- The lecture delivered by Dr. Rahul Swaminathan was very informative, easy to grasp and understand. It was well organized and seamlessly delivered. **In the remaining videos accent was an issue.**
- Content is a bit monotonous in terms of its application



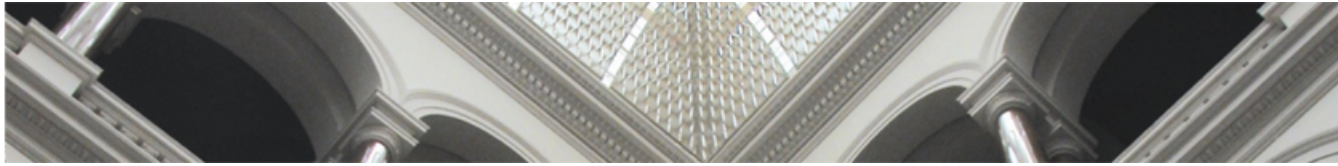
Student's Feedback II

- The Content delivered in week 4 is very good and clear. **Examples shown in the videos in relation to each topic helped to understand/relate the concept easy.**
- From the presentation view point i.e. **clarity** of lecturer speech (without echo) & seeing the slides should have been as how it was till week 3 i.e. With Dr. Rahul and with Jens the tone of voice could have been better.
- Prof. Dr.-Ing. Sebastian Möller. Dr. Rahul & Prof. Dr.-Ing. Jens Ahrens have delivered the content really well **but the body language is very casual.**



Soft Criteria from Meeting in Bangalore

- The proposal should include collaboration between Indian and European institutions
 - IIT Madras
 - National Programme on Technology Enhanced Learning (NPTEL), initiated by 7 IITs and IIS Bangalore ▸ large multiplier
 - TU Berlin, Chalmers University of Technology
- How can we become e-learning ambassador in our institution? We must promote the interest at our faculties.
 - Intrinsic interest at TU Berlin ▸ improvement of existing material, increased awareness
- How can we help the lower level institutions to add value using e-learning?
 - Additional teaching material for smaller institutions
- The outcome should create impact on society.
 - Hard to measure
 - Still, multimodal human-computer interaction becomes more and more relevant with AI-based natural interfaces (e.g. as indicated by smart assistants from Google, Apple, Amazon etc.)



Hard/Technical Criteria from Meeting in Bangalore

- Scalability issues
 - MOOCs designed to scale
 - (manual grading of one assignment has to be replaced)
- Lack of Internet Band
 - NPTEL maintains a service to exchange course content by courier
 - (further thoughts on that topic are planned for tomorrow)
- Language differences (diversity)
 - The course is in English
 - (2 examples used in the course are very German-centric and should be replaced)