

IS Project WS21/22

Inverted Classroom of Undergraduate Courses

A. Project Scope

A team of Master students from the University of Duisburg-Essen, Germany (UDE) and Bachelor students from Binus University, Indonesia (BU) is expected to develop an inverted classroom concept applicable to undergraduate (and Master) courses in general. In addition, students from each university are expected to design the course materials in line with the inverted classroom concepts, e.g. IT project management (ITPM) for UDE students.

The following are the activities of the project:

- 1) Inverted Classroom (UDE & BU students)
 - a. Literature review on Inverted Classroom
 - i. academic journals/conferences
 - ii. practitioner outlets
 - b. Inverted Classroom Concept
 - i. applicable to all SITM's undergraduate courses (in general)
 - ii. expandable to Master courses as well (extension)

- 2) As-Is Analysis of Undergraduate course (UDE & BU students)
 - a. Analysis of the gap between concept (To-Be) and existing situation in the courses
 - i. As-Is Analysis of UDE undergraduate course (UDE)
 - ii. As-Is Analysis of BU undergraduate course (BU)
 - iii. Combined As-Is Analysis (UDE & BU)
 - b. Requirement gathering
 - i. Stakeholder Interview sessions
 - Lecturers of ITPM courses (2 UDE & 2 BU lecturers)
 - Education Studies Advisors (2 UDE scholars)
 - Students from ITPM courses (4-5 UDE & BU students)
 - Project management practitioner interview (2-3 experts)
 - ii. Wish list
 - iii. Requirement list (prioritized wishes)

- 3) Course materials for IT Project management course (UDE students)
 - a. Course Handbook and Syllabus
 - i. Propose updated draft of Handbook (MHB)
 - ii. Update syllabus
 - b. Lecture slides
 - i. Propose improvement points of slides
 - ii. Update the slides in current e-learning platform
 - iii. Create new slide deck for the classroom sessions
 - c. Case and mini-cases
 - i. Update existing case to be used throughout the course
 - ii. Create or add mini-cases for classroom exercises
 - d. Assignment for students
 - i. Propose improvement points of quizzes or other assignments
 - ii. Update Quiz or assignment in the e-learning platform
 - iii. Create/update exercise materials for students in the classroom
 - e. Consistency & Alignment
 - i. All course materials have to be interrelated and consistent
 - ii. Course materials should be in German

B. Project team

- All students from participating universities will be grouped into a single project team:
 - The students will, however, be further divided into sub-teams, which allows the accountability and responsibility for the given tasks to be clearly defined.
 - Master students will have a larger number of tasks than Bachelor students and will take leadership roles in managing the sub-teams and conducting the quality assurance of the deliverables.
- All participating students would need to sign a consent letter that they are willing to be part of a research project.

C. Quality of Deliverables

- The students are expected to deliver all of the deliverables in English, such as website materials (HTML/PHP files, images, scripts, etc.) and documents/report (XLS, word, PPT, PDF)
- Joint-working deliverables between UDE and BU should be prepared in English
- Course materials for UDE should be in English/German (see Project Scope in Section A)
- Courses materials for BU should be in English/Bahasa (see Project Scope in Section A)
- The quality of the deliverables must meet scientific standards:
 - References should not be cited manually, always use reference management tools (e.g. Zotero, Citavi) and follow the latest APA style
 - Students are expected to use suitable and scientifically adequate design and sources to develop the deliverables. Failing to do so will result in a lower grade.
 - Only use the free materials from sources, and always indicate the sources.
 - Language style should be consistent and free from grammatical errors.
 - To increase the results' quality, the team members will be subject to a peer-review approach. In other words, individual students will review the work of their colleagues (including their active participation) and provide feedback. This will be done twice throughout the project.
- All deliverables must be delivered to a designated platform by participating universities (e.g. Ms. Teams). The students are expected to upload those as requested by their supervisors.
- Team is recommended to use the free-version of supporting tools (e.g. Mantis for bug tracking, Asana/Monday for project management, Atlas.ti for data analysis).
- The IS Project credits for UDE team are 12 ECTS for Master students (equal to 360 hours).
- UDE Master students need to allocate around 18 hours/week over five months for this project.

D. Project Deliverables & Milestones

- for UDE students, project duration would be 5 months (November 2021 – March 2022)
- For BU students, it would be 2.5 to 3 months (November 2021 – January 2022)

➤ Below table highlight the expected deliverables from the project team

Area	Activities	Deliverables
Inverted Classroom (UDE & BU)	i. Literature review on Inverted Classroom ii. Inverted Classroom Concept	(1) Inverted Classroom Concept for Undergraduate Courses (15--20 word document + 10-15 slides PowerPoint) (2) Bachelor thesis (BU only)
Course materials for IT Project management course (UDE)	i. As-is analysis ii. Proposed improvement points of slides iii. Conduct expert interview with project management practitioners (as inputs for "practice-oriented" parts of course materials) iv. Update the slides in current e-learning platform v. Create new slide deck for the presence classroom sessions vi. Update existing case to be used throughout the course vii. Create or add mini-cases for classroom exercises viii. Create/update quiz or assignment in e-learning platform (Moodle) ix. Create/update exercise materials for students in classroom	(1) UDE-ITPM As-Is Analysis (5-8 pages word doc). Additional excel list(s) might be required as appendix. (2) UDE-ITPM Conceptual document for improving ITPM course materials (10-15 pages word doc) (3) Create UDE-ITPM lecture slides, either new or update the existing (4) Create UDE-ITPM case and mini-cases, either new or extend existing ones (5) Create UDE-ITPM classroom exercise materials, e.g. quiz

➤ There will be 5 (five) **graded** project milestone meetings with the project sponsors (lecturers, experts, supervisors) and the participating students (see the section below):

- Attendance is mandatory; as well as submitting the results in advance (at least one week prior to the milestone's scheduled date).
- Students are strongly recommended to actively participate in these milestone meetings (not just simply presenting their parts separately, but students should share and discuss the progress as a whole team).

- Students will receive immediate feedback on whether their task is being carried out as expected and the anticipated good quality. Team is expected to note and implement these feedbacks latest in two weeks' time after the milestone meeting.
- Missing the milestones and/or providing poor quality results will affect individuals' grading and, in extreme cases, result in failing the entire project.
- Students do not need to prepare a comprehensive set of slides for each Milestone meeting; few simple summary slides are sufficient. However, they are required to present all of the major deliverables so that it is visible that the team is making progress and that they will be able to deliver the whole deliverables in high quality on time.
- BU students will participate only in the 1st and 2nd Milestone meetings/presentations.

1st Milestone: As-Is (UDE-BU)	2nd Milestone: Concept (UDE-BU)	3rd Milestone: Initial (UDE)	4th Milestone: Interim (UDE)	5th Milestone: Final Submission (UDE)
<ul style="list-style-type: none"> • ca. 2-3 weeks after the Kick-Off Meeting • As-is Analysis initial draft • Project timeline • Project tools setup (for exchanging documents, e.g. Ms Teams) 	<ul style="list-style-type: none"> • ca. 3-4 weeks after 1st Milestone meeting • As-Is Analysis final draft • Inverted Classroom Concept • Conceptual document for improving course materials 	<ul style="list-style-type: none"> • ca. 6-8 weeks after 2nd Milestone meeting • First round of QA for course materials 	<ul style="list-style-type: none"> • ca. 4-5 weeks after 3rd Milestone meeting • Second round of QA for course materials 	<ul style="list-style-type: none"> • Final presentation of the project results • Final round of QA for course materials • Project lesson learned after two weeks

Project Evaluation

The final grading for UDE students will be based on the sum of performance across the individual milestones:

- 1) Milestone-01: As-Is (10%)
- 2) Milestone-02: Concept (10%)
- 3) Milestone-03: Initial (15%)
- 4) Milestone-04: Interim (15%)
- 5) Milestone-05: Final Submission (50%)

Project Registration

- Interested Master students of UDE can apply for this project by submitting a) a *current grade transcript* and b) a *brief motivational letter* before **Friday, 29.10.2021, 23:59**. Please send your application, including the relevant documents (in PDF format), via email to **Anna Khodijah** (anna.khodijah@uni-due.de), using the subject line **IS Project WS21/22 Application**.
- Interested Bachelor students of BU can apply for this project by submitting a) a *current grade transcript* and b) a *brief motivational letter* before **Friday, 29.10.2021, 23:59**. Please send your application, including the relevant documents (in PDF format), via email to **M. Ichsan** (mohammad.ichsan@binus.edu), with the subject line **Thesis: Inverted Classroom**
- Shortly after the submission deadline, you will receive information via email about your acceptance and the date of the initial kick-off meeting for this project.