AI-HED
Artificial Intelligence in Higher Education Teaching and Learning

AI-HED.EU

BEST PRACTICE · PILOT COURSE

Process Management

AI integrated across four connected assignments, combining authentic process work with critical reflection on AI use and output quality.

INFORMA

FRIEDRICH STALLIN

INTERVIE

28 APRIL 20

INSTITUTI

UAS BFI VIEN

COURSE AT A GLANCE

Two courses in Project Management: Organisation and Data Analytics

3
ECTS CREDITS

67
STUDENTS

1stth
SEMESTER

MA
MASTER LEVEL

COURSE OVERVIEW

Process Management

UNIVERSITY

University of Applied Sciences BFI Vienna

PROGRAMME

Project Management and Organisation; Project Management and Data Analytics

COURSE LEVEL

Master · 1st semester · 3 ECTS

TYPICAL STUDENT BACKGROUND

First-semester master's students working and studying simultaneously, with mixed sectoral backgrounds and uneven prior knowledge in process management and AI usage.

PREREQUISITES

Bachelor-level process management knowledge and competencies. A tutorial is offered prior to the start of the course.

SUMMARY OF AI USAGE

> AI was integrated across four connected assignments over roughly three months. Students first used a customized chatbot as a tutor for process lifecycle models, then worked with prescribed GenAI tools on process landscapes, BPMN-based process modelling, and investigations of technology trends in process management. The primary goal was to combine authentic, practice-oriented process work with critical reflection on AI use and AI output quality. What set the design apart was bounded comparability: two lecturer-written company cases, prescribed tools, and cross-group peer review made differences in AI use discussable.

— FRIEDRICH STALLINGER, COURSE TEACHER

SECTION 02

02

Learning outcomes

Seven outcomes covering process theory, modelling, and organisational application.

INTENDED LEARNING OUTCOMES

Seven outcomes spanning process theory, modelling, and organisational improvement

01 Describe selected process lifecycle models and explain their principles, structure, and context of application.

02 Acquire, model, and document processes using a standard notation.

03 Describe current trends in process management and interpret their effects on process-oriented organisations.

04 Analyse and improve existing processes and work out key indicators for process measurement and controlling.

05 Explain and distinguish process reference, process maturity, and process capability models.

06 Relate process management to process-oriented quality management and integrated management systems.

07 Develop a process landscape in line with corporate strategy in simplified business contexts.

AI SUPPORT · ILO 1

A customized chatbot as interactive tutor for process lifecycle theory

01

INTENDED LEARNING OUTCOME

Describe selected process lifecycle models and explain their principles, structure, and context of application.

“

A customized chatbot acted as an interactive tutor grounded in course reading. Students used it to work through two process lifecycle models, better understand theoretical texts, prepare a structured comparison of the models, and reflect on the adequacy, accuracy, and completeness of AI-supported explanations.

AI SUPPORT · ILO 2

Cross-group comparison of AI-generated technology trend analyses

02

INTENDED LEARNING OUTCOME

Describe current trends in process management and interpret their effects on process-oriented organisations.

“

Groups used prescribed GenAI tools to investigate technology-driven trends such as AI-driven process mining or automation, whereby the groups were all assigned different tools to use for this task. They then compared results across groups/tools and assessed reliability and relevance.

AI SUPPORT · ILO 4

Building process landscapes from AI-assisted company case work

04

INTENDED LEARNING OUTCOME

Develop a process landscape in line with corporate strategy in simplified business contexts.

“

Groups use assigned tools and company cases provided by the lecturer to develop process landscapes and accompanying process descriptions. A guided peer review focused on strategic fit, coherence and consistency within the company case, and how prompt choices shaped the outputs.

AI SUPPORT · ILO 5

Experimentally deriving BPMN models — and discovering AI's limits

05

INTENDED LEARNING OUTCOME

Acquire, model, and document processes using a standard notation.

“

Students experimentally used AI to derive and document processes in BPMN2.0 from incomplete or partly inconsistent case material. They then shared the problems they experienced, limitations, and discussed possible ways to overcome AI’s limitations in regards to modelling languages.

SKILLS ENHANCED

Process expertise and AI literacy, developed through direct comparison

“

AI especially strengthened **process-specific analytical skills** and applied AI literacy. Students practised using a chatbot as a tutor, comparing two lifecycle models, investigating technology-driven trends, aligning process landscapes with corporate strategy, and experimentally deriving BPMN models from case descriptions.

Just as importantly, they **learned to compare diverging AI-assisted solutions**, reflect on why other students reached different results, judge adequacy, accuracy, and completeness, and recognize current limits of AI in process modelling. The course also thematized legal/property-right issues around uploading teaching materials and literature into AI tools.

AI-SPECIFIC LEARNING OUTCOMES

No formal AI learning outcome

NO FORMAL ILO

“

The course did not include an AI-specific learning outcome.

SECTION 03

03

Purpose & benefits

Connecting theory to practice — and making AI's role in that discussable.

MAIN MOTIVATION FOR USING AI

Connecting theory to practice — and making AI's role in the process discussable

“

AI was introduced to connect process-management theory with authentic business-process tasks while exposing students to tools they are likely to encounter in practice. Didactically, the design aimed to make more accessible and deepen self-study, support a setting with highly heterogenous prior knowledge, **enable richer case-based work**, and make AI use itself discussable through structured comparison and reflection.

BENEFITS FOR STUDENTS

Complex tasks made feasible — and AI's role made visible through comparison

“

AI helped students tackle complex assignments, especially in a mixed-cohort master's setting with uneven prior knowledge. **Without AI the same workload would not be feasible** in the amount of time students had for the assignments. The customized tutor chatbot supported deeper understanding and reflection of lifecycle models; later, AI made it possible to **investigate trends, build process landscapes, and explore BPMN modelling** from realistic company cases in a limited amount of time.

Students also benefitted from cross-group comparison: they experienced first-hand that **different results often come less from the tool itself than from how it was used.** The course therefore supported both domain learning and AI literacy, including critical evaluation of outputs and insight into current limitations of AI-supported process modelling.

BENEFITS FOR THE LECTURER

More ambitious tasks — and a stronger basis for comparison and discussion

“

AI made it possible to design more ambitious, practice-oriented tasks and to demand broader, more coherent case outputs than before. The bounded setup – two company cases generated with AI plus prescribed AI tools – also created a strong basis for cross-group comparison, peer review, and rich class discussion. In the technology-trend task, AI-supported presentations supported peer teaching because many outputs were already well structured.

SECTION 04

04

Implementation details

One individual assignment and three group tasks, bounded by prescribed cases and tools.

HOW AI WAS USED IN CLASS

Four connected assignments — from AI-supported self-study to peer-reviewed process modelling

“

AI was used across one individual and several group assignments.

— Students first completed an AI-supported self-study task on two process lifecycle models via a customized chatbot and discussed both content and tool reflection in class.
— Later, groups of students worked with lecturer-assigned combinations of two photovoltaic-company cases and three tools (ChatGPT, Gemini, Perplexity) to develop process landscapes and then experimentally model processes in BPMN2.0.
— AI was also used to investigate technology-driven trends in process management.

In class, students compared outputs in peer-reviews, presented their results and AI outcomes, and discussed why solutions diverged and where the tools' limits became visible.

TOOLS & PLATFORMS

Four tools — one tutor chatbot and three prescribed GenAI platforms

01

TUTOR CHATBOT

CustomGPT

A customized GPT grounded in course reading, used as an interactive tutor for process lifecycle model self-study — not a ghostwriting tool.

02

GENERAL-PURPOSE GENERATIVE AI

ChatGPT

Prescribed for process landscape development, BPMN process modelling experiments, and technology trend investigation tasks.

03

GENERAL-PURPOSE GENERATIVE AI

Gemini & Perplexity

Assigned alongside ChatGPT to different student groups, enabling cross-tool comparison of results for the same company cases and tasks.

Tools were prescribed per group to ensure comparability. Students were assigned specific combinations of tool and company case to enable structured cross-group peer review.

ACCESS TO TOOLS - FREE VS PAID

Mixed access — prescribed tools with uncontrolled licence asymmetry

Mixed

PRESCRIBED PUBLIC TOOLS

Students used prescribed public tools (ChatGPT, Gemini, Perplexity). Some encountered usage limits with the CustomGPT tutor bot when on the free tier.

> Access was mixed. Some students encountered usage limits with the CustomGPT tutor bot, when they were using the free version of ChatGPT. Students used prescribed public tools (ChatGPT, Gemini, Perplexity). Equal access could not be guaranteed because some students had employer-funded higher-tier licences and some did not.

GUIDANCE & SUPPORT FOR USING AI EFFECTIVELY

Task-specific guidance, a structured peer-review questionnaire, and documented usage

> Guidance was task-specific rather than generic. For the tutor chatbot, students were told it was meant to support self-study, not take over the writing assignment. For trend analysis, guiding questions were provided; for the peer review of process landscapes, students used a structured in-class questionnaire with 13 content questions and 6 AI-reflection questions. Across AI tasks, students were asked to document usage as part of their reflections.

AI IN STUDENT ASSESSMENT

AI use was assessed — depth of reflection and critique, not output quality

YES

Part of course assessment

“

Students received points for successful AI-related tasks. Students submitted written reports and reflections on all AI-related assignments via Moodle. Assessment was mainly based on qualitative criteria highlighting students’ own work (depth of investigation and insight, critical evaluation of AI outputs and AI tool usage, documentation of AI usage, etc.). The lecturer gave feedback and up to 5 points for each submission, according to the respective assessment criteria.

These points contributed to the final grade but did not replace the final exam, which was required to successfully complete the course.

SECTION 05

05

Evaluation & risk management

Pilot logbook, in-class feedback, written reflections, and year-on-year performance comparison.

HOW AI IMPACT WAS EVALUATED

Pilot logbook, in-class discussion, peer review, and comparison with previous cohorts

“

Impact was evaluated through the pilot logbook, in-class discussions after assignments, feedback gained from peer-review activities, written reflections and analyses, and a separate informal evaluation conducted by the lecturer about the CustomGPT tutor. In addition, a comparison of the overall performance with previous years is conducted to evaluate the impact of AI on the learning outcomes.

METRICS & KPIS

Qualitative KPIs across assignments — performance trends, engagement, and reflection depth

“

General KPIs:

— Performance (grades) in comparison to previous years

— Level of engagement during in-class assignments and discussions

— The kinds of questions students ask about the topic, assignments or AI tools and usage

KPIs for written reflections:

— Self-study: Clarity and comprehensiveness of the process lifecycle comparison, quality of AI tool evaluation regarding accuracy, completeness and relevance of AI-generated output, depth of understanding about the AI tool's capabilities and limitations

— Trends: Depth of investigation and insight, quality of group presentation and collaboration/coherence, critical evaluation and reflection on AI tool usage, AI usage documentation

— Landscape development: Alignment of landscape with fictional corporate context, consistency and coherence of landscape, relevance of peer review feedback, and AI usage documentation

— Modelling processes (BPMN 2.0): Correctness and clarity of process modelling, critical discussion of limitations, and AI usage documentation

FORMAL COURSE EVALUATION

Evaluated within the AI-HED pilot or part of the institution's standard review

NO

Outside the institution's standard process

RISK MANAGEMENT IN AI USE

Didactic design as the main safeguard — bounded, comparative, and documented

YES

Through didactic design

> “Though mainly through didactic design rather than formal compliance procedures. By introducing the customized chatbot explicitly as a tutor instead of a ghostwriter and explaining the purpose of the task, the risk of students handing in AI-generated texts instead of their own comparison of process landscapes was mitigated. To ensure comparability of the assignments, specific company cases and AI tools were prescribed and students had to document their AI usage. In addition, the peer review activity surfaced differences in results and respective prompts.
>
> At the same time, unforeseen risks emerged during the semester: students sometimes used tools that were not prescribed or used them in ways not intended, uploaded course materials and literature without reflecting on legal/property-right issues, and partly relied on AI in ways that could undermine hands-on competencies. These risks were mitigated by addressing the issues in class and explaining the purpose of tasks to students.

SECTION 06

06

Overall impact

Positive engagement, persistent constraints, and mixed results for BPMN modelling.

OVERALL IMPACT ON TEACHING & LEARNING

> Overall, the use of AI had a positive impact on student engagement, but it also required substantial time, preparation, and support from both teachers and students. It enabled authentic process management tasks, supported mixed-background students, and produced material for peer comparison and discussion. Students were generally satisfied, and overall performance remained the same as in previous years.
>
> However, the design also exposed major constraints: large mixed groups pushed much of the work into homework, leaving limited time for in-class reflection. Moreover, AI-supported BPMN modelling remained technically and didactically problematic since students ran into technical problems and reached the limits of current general generative AI tools for this specific task.

— FRIEDRICH STALLINGER, COURSE TEACHER

IMPACT ON STUDENT LEARNING OUTCOMES

Positive overall — but uneven across tasks, with BPMN modelling as the main exception

> Overall, learning effects were positive, but not uniformly so across all AI-supported tasks. Students generally deepened their understanding of lifecycle models, produced structured trend analyses, and learned from comparing diverging AI-generated solutions for the same company cases.
>
> For LO 5, the effect was mixed: AI helped students discover processes and recognise current tool limitations, but it also prevented some students from gaining deeper hands-on modelling practice.

MAIN CHALLENGES & HOW THEY WERE MANAGED

Scale, workload, and AI's technical limits in BPMN process modelling

“

Main challenges for the lecturer were scale, workload, and control. Two large groups meant many AI tasks had to happen outside of class, reducing lecturer oversight and collective reflection time. Preparation was work-heavy because customized chatbots, company cases, licences, new developments in AI tools, and copyright/material issues all had to be handled.

Students sometimes used AI beyond the intended tutor function, uploaded teaching materials or literature without reflecting on legal implications and faced technical problems around BPMN data/exchange formats. The lecturer managed this through prescribed cases and tools, structured peer review, guiding questions, written feedback, and explicit discussion of limitations.

SECTION 07

07

Scalability & transferability

Bounded design elements transfer well — scaling requires smaller classes and institutional support.

SCALING TO OTHER COURSES AND NEED FOR INSTITUTIONAL SUPPORT

Transferable to applied management courses — with the right conditions in place

YES

TRANSFERABLE

Transferable to other applied management or operations courses using case work, comparative outputs, and reflection on AI-supported problem-solving.

> The experience is transferable to other applied management or operations courses that use case work, comparative outputs, and reflection on AI-supported problem-solving. Its strongest transferable elements are the bounded design (prescribed cases/tools), the tutor-chatbot for self-study, and the cross-group peer-review format.
>
> To scale it well, the institution would need smaller class sizes, fewer AI-supported assignments and respective licenses, more time for in-class debrief, legal and ethical guidance on uploads/materials prior to the course, and allocated time for developing and updating custom chatbots and class materials. Without this support, the design becomes too uncontrolled and too labour-intensive.

KEY ADVICE FOR EDUCATORS

Three practices for designing AI integration that holds up

Less reflection is more. 01

Do not overload the course with too many individual reflection activities on AI. Too many reflections across different tasks cause information overload and lower motivation.

Be prepared to adapt. 02

The number of AI activities that work depends on class size, student background, and institutional context. Build flexibility into the design — plan to adjust spontaneously.

Check your tools shortly before class. 03

Rapid AI developments can have unforeseen impacts on your design, especially for complex, subject-specific settings like process modelling. Verify tools work as expected.

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Artificial Intelligence in Higher Education Teaching and Learning

A bounded design that made AI use discussable — and its limits visible.the student's own voice.

COURS

Process Management

INFORMAN

Friedrich Stallinger

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PROGRAMN

Project Management and Organisation (Master)

Project Management and Data Analytics (Master)

ABOUT AI-HED

An Erasmus+ cooperation project on AI in higher education

The project **"Artificial Intelligence in Higher Education Teaching and Learning"** (AI-HED), launched with co-funding from the European Commission under the Erasmus+ Programme in the fields of education, training, youth, and sport for the 2021–2027 period, was submitted and awarded under **Key Action 2: Cooperation among organisations and institutions**.

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