Hes·so
Haute Ecole Spécialisée de Suisse occidentale
Fachhochschule Westschweiz
University of Applied Sciences Western Switzerland

MSE | MASTER OF SCIENCE IN ENGINEERING

Management des Projets IT

MA_ITProMan

0. Practical informations

Elena Mugellini, Omar Abou Khaled

HumanTech
Technology for Human Wellbeing Institute

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Contact | Biography | Projects | Publications

Omar Abou Khaled is Professor in computer science at HES-SO campus Fribourg (EIA-FR). He holds a PhD in Computer Science received from the Perception and Automatic Control Group of HEUDIASYC Laboratory of « Université de Technologie de Compiègne », and a Master in Computer Science from the same university. Since 1996 he has been working as research assistant in the MEDIA group of the Theoretical Computer Science Laboratory of EPFL (Ecole Polytechnique Fédérale de Lausanne) in the field of Educational Technologies and Web Based Training research field on MEDIT – (second link) and CLASSROOM 2000 (second link) projects. He holds a Master in Computer Engineering (1991).

He was International Advisor at HES-SO until august 2014. He was Head of Internationale Relations Office at EIA-FR. Head of MRU « Advanced IT Systems Architects » at EIA-FR. Until 2007 He was leader of the MISG (Multimedia Information System Group). He is responsible of several projects in the field of **Document Engineering**, **Multimodal Interfaces**, **Context Awareness, Ambient Intelligence**, **Blended Learning**, and **Content-Based Multimedia Retrieval**. He is involved in the teaching of several courses related to Information Systems, Web Technologies & Multimodal Interfaces.

He was involved in the development of PRO-LAB-II (download my PhD report and see the demonstrator) (Pro-Art project a subgroup of the European Prometheus Eurêka project which aims to increase the traffic safety). He is also involved in many scientific activities: coordinator of several network of excellence (XML Academy Suisse Romande, **Scientific Committee member** of ANR//CONTINT, of RCSO-TIC (Réseau de Compétences – Technologies de l'information et de la communication de la HES-SO) and several conferences as TEI (International Conference on Tangible and Embedded Interaction), IHCI2007 (Interfaces and Human Computer Interaction 2007), CIDE (Conférence Internationale sur le Document Electronique). Finally, He has several international publications (more than 100) related to his research domains and He is a co-editor of special edition of « Document Numérique » concerning the theme « Document & Education ».

Omar ABOU KHALED

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Elena Mugellini, Education & Professional Activities

- **1991-1996: Istituto technico aeronautico, Florence**
- **1996-2002: Bsc and Msc in Telecommunication Engineering - University of Florence**
  - Sistemi di comunicazione OFDM con trasmissione a diversità spazio-tempo e spazio-frequenza
- **2003-2005: PhD in Computer Sciences - University of Florence/HES-SO**
  - eGovernment Service Marketplace: Model-Driven Design for Distributed Service Dynamic Discovery and Delivery
- **2006-2008: Lecturer & post-researcher, HEIA**
- **2009-now: Professor in Computer Sciences - HES-SO Fribourg**
  - class teaching at the bachelor, master and PhD level
  - HEIA-FR, HEG, Unifr, Unifi, etc.
  - homepage: http://elena.mugellini.hefr.ch
- **2019 - now: JOE-SI Sàrl**

Elena Mugellini, Management & Research

- **2012 - now: Head of HumanTech Institute, https://humantech.institute/ Technology for Human Well-being**
  - About 25 persons
  - **Research axes**
    - Advanced Interfaces & Smart Environments
    - Human-Centered IA
    - Product and Service Design
  - Design for Innovation Lab.
  - HumanTech on Youtube: https://www.youtube.com/channel/UCXsw3kmBnyOY2NBGejIaAEA

MA_ITProMan - organization

- 3 periods every week
  - **Class**
    - Wednesday 11:15, 2-3 periods
    - Lausanne Provence A?
  - **Practical Work**
    - Starting in class, to be continued at home
    - Lausanne Provence A?
  - **Teachers**:
    - elena.mugellini@hes-so.ch
    - omar.aboukhaled@hes-so.ch

Class organization

- 1. Concepts
- 2. In-class activities
- 3. Practical work
  - Groups of 4 persons
  - Pour cette année on aura
    - 5 groupes de 4
    - 2 groupes de 3

Practical work organization

Les classes inversées ont pour objectif de tirer parti de l'IA générative pour améliorer chaque phase du cycle de vie du projet (PLC) ainsi que le développement logiciel (SDLC) en gestion de projet. Grâce à cette approche, l'IA générative permet d'améliorer l'efficacité, la qualité et la gestion des projets à chaque étape du SDLC:

- PLC
  - L'IA peut aider dans la phase stratégique de gestion de projet (business case, project charter et plan)
- Planification :
  - Utiliser l'IA pour générer des scénarios de projet, estimer les coûts et optimiser les plannings en fonction des données disponibles.
- Analyse :
  - L'IA peut analyser des exigences et proposer des solutions en fonction des besoins, tout en identifiant des risques potentiels et des opportunités d'optimisation.
- Conception :
  - Générer des schémas de conception, des architectures et des prototypes en s'appuyant sur les meilleures pratiques et en adaptant les solutions aux contraintes du projet.
- Implémentation :
  - L'IA assiste le développement en proposant du code et en automatisant des tâches répétitives, tout en facilitant la collaboration entre les équipes.
- Test :
  - Automatiser la génération de cas de test, identifier des bugs et fournir des suggestions d'amélioration pour optimiser la qualité du logiciel.
- Déploiement :
  - L'IA peut faciliter les stratégies de déploiement, gérer la configuration et proposer des solutions pour la maintenance et l'évolution continue du logiciel.

Evaluation

- **Exam** 60%
  - Written exam (closed book)
- **Practical work** 40%
  - Final report + final presentation.

Class Objectives

Learning the fundamentals of project management …
… using some standard good practices and tools …
… in the perspective of IT project!

Elena Mugellini, Omar Abou Khaled

Targeted competencies (1/2)

- **Fundamentals**
  1. Understand the life-cycle of IT project at the company level (strategic, tactic, execution)
  2. Understand the different IT project methodologies from traditional waterfall to modern agile approaches
  3. Chose the appropriate methodology, either waterfall or agile, in the framework of a given business context

Targeted competencies (2/2)

- Specific
  1. Understand client needs and acquire system specifications
  2. Understand the fundamental motivations of waterfall and agile methodologies and organize a project planning using such approaches
  3. Understand, lead and motivate an IT team, manage the stress and handle conflicting situations
  4. Advanced topics
     - Through specific chapters

Calendrier 2025-2026-Sujet à adaptation!

ITProMan - merc 11:15-13:40		Sujet
SA1	17-Sep-2025	Org. Of the class. - Fundamentals of Project Mgmt
SA2	24-Sep-2025	Phase 1 - Init project, business case, MOV + groupes formés + lancement des classes inversées
SA3	1-Oct-2025	Phase 2 - project plan: scope and WBS
SA4	8-Oct-2025	Phase 2 - project plan: task estimation, task scheduling
SA5	15-Oct-2025	Phase 3 - overview of methodologies & intro agile methodologies
SA6	22-Oct-2025	Classe inversée - travail autonome
SA7	29-Oct-2025	Phase 3 - execution: intro agile methodologies
SA8	5-Nov-2025	Phase 3 - execution: overview of different methodologies - intro RUP
SA9	12-Nov-2025	Classe inversée - travail autonome + pointage
SA10	19-Nov-2025	Phase 4 - managing organisational change, closing the project & Phase 5 - evaluating the project
SA11	26-Nov-2025	Soft skills stress management
SA12	3-Dec-2025	Soft skills motivation + Classe inversée - pointage
SA13	10-Dec-2025	Présentation classe inversée
SA14	17-Dec-2025	Présentation classe inversée

Supports

- Slides
  - To be taken as pointers
- PDF or web documents
- Books

· references hereafter and given during class

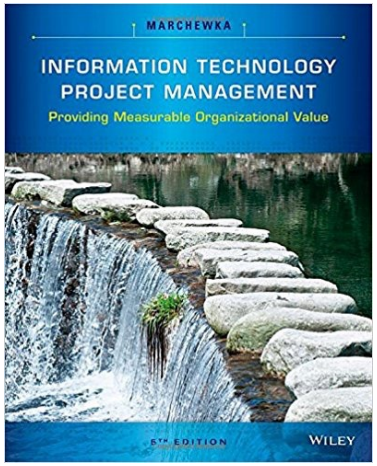
- All e-documents on TEAMS
- 2025-2026 MSE MA-ITProMan
  - Code : pdz8mvs

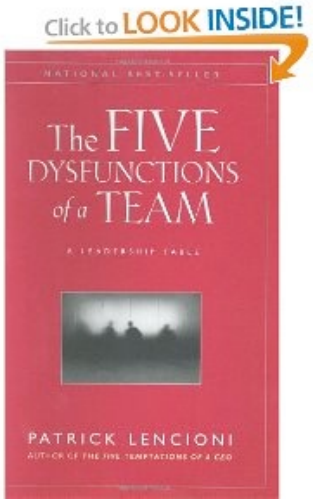
Calendar - subject to adaptation

- Org. Of the class. - Fundamentals of Project Mgmt
  - **Phase 1** - Init project, business case, MOV
  - **Phase 2** - project plan: scope and WBS, project plan: task estimation, task scheduling
  - **Phase 3** - overview of methodologies & intro agile methodologies, execution agile, overview of different methodologies - intro RUP
  - **Phase 4** - managing organisational change, closing the project & Phase 5 - evaluating the project
  - **Soft skills**: motivation, stress management, convince & negotiation, effective meeting
  - Invited speakers

Books

- “Information Technology Project Management”, J. Marchewka, 2016, Wiley
- "The Five Dysfunction of a Team", P. Lencioni, 2002, Jossey Bass Wiley





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