Master's degree in Agile Methodologies and Project Management

UCAM
UNIVERSIDAD
CATÓLICA DE MURCIA

Structuralia

SUMMARY

STRUCTURALIA

Structuralia is an online school specialized in graduate engineering, infrastructure, construction, energy, building, new technologies, and digital transformation programs and courses. We are dedicated to providing high-quality education for engineers, architects, and STEM (science, technology, engineering, and mathematics) professionals.

Since our creation in 2001, over 200,000 students from more than 90 countries have participated in our virtual classrooms as we disseminate knowledge and guide professionals toward success.

To this effect, we collaborate with leading international experts in each field, which enables our students to specialize under the guidance of active professionals. Our constant interaction with major companies in each sector, as their specialized training provider, enables us to tailor high-quality academic material to meet the current job requirements of our students.

Our master's programs are certified by our partner universities, such as the Universidad Católica San Antonio de Murcia, UDAVINCI, or Universidad Isabel I.

Every day we strive to provide the best training for engineers, architects, and STEM professionals with a clear goal: your professional success.

BRIEF SUMMARY

This master's degree is intended to provide the necessary knowledge about project management, regardless of the project's size, from both the traditional and the agile perspectives, of which the latter is the "de facto" approach in the context of digital transformation. This program will explain the differences between the traditional and the agile approach, as well as their response mechanisms in highly uncertain and changing contexts.

Furthermore, aspects such as the project management cycle, the most widely used agile methodologies (e.g., Design thinking), the importance of data, and their influence in project management will be addressed. This master's degree aims to equip students with a set of practices, techniques, and tools, along with examples and advice as to how to apply the acquired knowledge in day-to-day project, change and people management.

WHO IS IT INTENDED FOR?

This master's degree is intended for current and/or future project management professionals, as well as for those involved in project teams and service management, who are interested in adopting specialized techniques to carry out estimations, planning, task management, costs, and team performance control, etc. In addition, the knowledge acquired in this program can be used to pursue the PMP or ACP certifications.

JOB OPPORTUNITIES

- Project manager
- Department director
- Agile coach
- Lead facilitator
- Agile expert
- Agile methodologies and digital transformation consultant

GOALS

- Learn about the traditional project planning and control approach
- Learn about the agile management approach and identify the differences with the traditional approach
- Learn the most widely used project and team management methodologies
- Understand the relationship between digital transformation and agile management, and why the latter is suitable for the digital transformation context.
- Learn the existing practices associated with both traditional and agile project management
- Learn the Design Thinking method and its integration with Lean y Agile methodologies
- Identify fields of application of Agile methodologies in knowledge management, construction, technology and data management projects, among others.

PROGRAM

1. PROJECT MANAGEMENT AND CONTROL

Unit 1. Launch planning

- Project launch
- Project management plan (I): project lifecycle
- Project management plan (II): planning
- Project management plan (III): project organization chart
- Lessons learned

Unit 2. Communications and document management

- Communication management (I): general aspects of communication
- Communication management (II): global communication management process
- Communication management (III): specific communication management plan
- Document management and control (I): specific document management plan
- Document management and control (II): document management tool

Unit 3. Procurement management

- Procurement management
- Procurement management and subcontracts
- Expediting management
- Quality control (QC)
- Procurement logistics

Unit 4. HHRR, quality, health, safety, and environment

- HHRR management (I): specific HHRR plan
- HHRR management (II): work team management
- Quality management
- Health, safety, and environment (HSE) management (I): definition
- Health, safety, and environment (HSE) management (II): standards

2. ADVANCED PROJECT MANAGEMENT

Unit 1: Scope and Contract management

- Scope management I
- Scope management II
- Scope management III
- Contract management I
- Contract management II

Unit 2: Negotiation and Cost Control

- Negotiation I
- Negotiation 2
- Negotiation 3
- Cost control

Unit 3: Cost Estimation and Planning

- Cost estimation 1
- Cost estimation 2
- Planning 1
- Planning 2
- Planning 3

Unit 4: Risk management

- Global setting
- Risk management 1
- Risk management 2
- Risk management 3

3. FINANCE PROJECT MANAGEMENT

Unit 1. Financial Projections and Project Finance

- Time value of money
- Investment appraisal methods
- Creation of financial projections
- Quality of financial projections and terminal value
- Project finance sources
- Cost of capital cost and level of project debt
- Evaluation of projects with uncertain results

Unit 2. Project Finance

- Introduction to the project finance model
- Project risk analysis
- Project bankability
- Entities involved in the financing of a project
- Ratios and management of project financing

Unit 3. International Projects

- Financing for international projects
- Country risk management
- Finance sources for international projects

Unit 4. Service Projects

- Finance management of service projects
- Cost identification in service projects
- Allocation of costs to services
- Budgeting the service
- Service economic follow-up and closure

4. QUALITY MANAGEMENT. QUALITY ASSURANCE

Unit 1: Quality principles

- Introduction.
- Quality policy
- Context analysis development.
- Processes and procedures
- Risk identification

Unit 2: Quality Management System

- Responsibility definition and objectives
- Plans and program definition
- HHRR management
- Material resource management
- External resource management (Suppliers)
- External resource management (Procurement)

Unit 3: Quality-related activities

- Information management.
- Communication management
- Design, product and service planning
- Design, product and service control

Unit 4: Quality monitoring and measurement

- Nonconformity management and corrective measures
- Internal control mechanisms: Reporting
- Control mechanisms: Auditing
- Management review
- External certification

5. WHY AGILE? AGILE VS CLASSIC MANAGEMENT APPROACH. AGILE METHODOLOGIES

Unit 1. Why agile? Agile vs. traditional

- Context
- Myths and realities: why agile?
- Agile approach
- Why should we adopt agile?
- Agile vs. traditional

Unit 2. The agile approach characteristics

- Agile principles and values
- Disadvantages of the traditional approach
- The “traditional” management approach
- The “agile” management approach
- Agile work process for projects

Unit 3. Agile methodologies: Scrum, XP and other methodologies

- Framework of methodologies
- FDD, DSDM and Lean
- Scrum
- XP methodology
- “5 S” methodology

Unit 4. Agile methodologies: Kanban

- The definition of Kanban
- Examples of the task boards
- Designing the Kanban board
- Using the Kanban inside the iteration
- Sinergy of methodologies

6. LAUNCHING AND GLOBAL PLANNING OF AGILE PROJECTS

Unit 1. Project visión

- Business case. Project justification
- Customer-centric approach. Declaration of inter-dependence
- Project vision
- Knowledge management areas according to the agile approach
- The "personas" technique

Unit 2. Agile scope management

- Prioritization of requirements based on business value
- Refining priorities
- User stories
- Splitting requirements
- Agile management of requirements

Unit 3. Agile estimation

- Done" and "ready"
- Common mistakes
- Adaptive planning
- Agile estimation of requirements
- Velocity, timebox, and establishing the process

Unit 4. Planning with uncertainty

- Roadmap
- Adjusting the roadmap
- Limitation of work in progress
- Validity of the agile approach
- Change management

7. ITERATIVE AND INCREMENTAL IMPLEMENTATION AND DELIVERY

Unit 1. Definition of the agile project

- Release plan
- Use of the release plan
- Iteration zero and Spikes
- Preparing the iteration
- Iteration planning

Unit 2. Short term planning

- Detailing the iteration content
- Deadline, cost and people
- Iteration. Implementation and closing
- Agile engineering practices
- Other ways of estimating and planning

Unit 3. Monitoring and reporting

- Earned Value traditional method
- Earned value in lean construction projects
- Agile earned value
- Monitoring the team
- High performance teams

Unit 4. Release and information radiators

- Monitoring the work
- Demo or review meeting
- Retrospective meeting
- Information radiators
- Project closure

8. DESIGN THINKING

Unit 1: Design thinking

- Why design thinking arises: empathy and closeness with the customer or user
- What is Design Thinking?
- Understanding Design Thinking
- Overview of the Design Thinking process
- Methods for identifying the user's needs

Unit 2: Design thinking

- Step 1: Empathize with the users
- Step 2: Define the problem
- Step 3: Ideate
- Step 4: Prototyping
- Step 5: Test

Unit 3: Digging deeper. How does Google do it?

- Detailing the Design Thinking approach
- Agile, Lean and Design Thinking for product development
- Fulfilling objectives
- How does Google do it?
- Stages of Google Design Sprint

Unit 4: Other streamlining tools

- Analysis of the agile process
- Failure modes
- Success modes
- Risk monitoring
- Agile contracts

9. AGILE APPROACH AND DIGITAL TRANSFORMATION

Unit 1. The management approach and digital transformation

- The management approach according to digital transformation
- Data 2.0
- Data democratization
- Democratization of technology
- Agile data management

Unit 2. Agile data. Data driven companies

- Data Driven Companies
- Agile Data
- Data projects and agile approach
- Agile Data delivery
- Agile Data Infrastructure

Unit 3. Agile digitalization

- Present and future: digitalization and the agile approach
- Datification as a pillar of digital transformation
- Other applications of agile digitalization
- Digital transformation strategy
- Agile even related to the UX; mobile first

Unit 4. Soft skills needed for agilism and digital transformation

- Soft skills 1
- Soft skills 2
- Soft skills 3
- Soft skills 4

MASTER´S FINAL PROJECT

The program is subject to possible variations / updates of the contents to improve their quality

AUTHOR PROFILE

Director: Miguel Ángel Vera Mellado

Miguel Ángel is a Computer Science engineer, ACP, PMP, MBA and ITIL expert specialized in project management. In addition to his professional experience in working with clients, businesses and software factories, Vera Mellado has 10 years of capacity building experience with multiple companies, business and technical schools, as well as public administration agencies. Miguel Angel has extensive and solid experience in project management and bid coordination, as well as in people management in multidisciplinary teams. He strongly believes in goal-oriented work and in building the necessary capacities to overcome challenges.

Yolanda García Rubio

Industrial and mechanical engineer by the University of Oviedo; AACE International - Certified Estimating Professional (CEP); Industrial Organization School (EOI) – Business and Industrial and Technological management. President of the Spanish Contract Management Association (AEGescon). Contracts Estimates Manager, Tecnicas Reunidas (United techniques), Madrid, Spain (at present); 20 years of experience in engineerin

Gonzalo Oliveros García is a forest engineer with experience in environmental management in the construction sector. During the past 10 years, Gonzalo has been working with nuclear energy quality assurance as Chief Auditor in charge of auditing critical suppliers for nuclear plant security. He continues to hold this position, which provides him with a continuous learning experience.

Besides his qualifications in the area of quality, he is also a member of the Codes and Standards Committee at the American Society of Mechanical Engineers (ASME) with active participation in the improvement of quality standards at nuclear facilities NQA-1.

Jorge Serrano Paradinas

Jose Serrano is a Civil Engineer (Roads, canals, and ports) by the Polytechnic University of Madrid. Serrano has worked in different companies in the construction sector such as Aldesa, Corviam and Arthur Andersen, and audited the main firms in the construction sector.

Dávid López

David Lopez is a Materials Engineer by the URJC, with a Bachelor 's degree in Chemical Science by USAL, and a Level II of non-destructive trials (UT, PT, MT). He has also completed a master 's degree in Oil & Gas Engineering and Business from Structuralia, and another in Large International Turnkey Projects (EPC), Contract Management, and Project Management by Structuralia. ASmfor his professional experience, Lopez has been working in the Oil & Gas sector for 16 years, with international EPCs-Lump Sum projects in different regions: Europe, the Americas, Africa, the Middle East, etc. Presently, David works as the Deputy Director of the Activation Department and Provisioning area in Grupo Técnicas Reunidas SA.

METHODOLOGY

At Structuralia, we apply a modern methodology adapted to the process of change we live in today. Our educational environment is based on an online learning system, that is, learning by observing, reflecting, and practicing with an organized and carefully programmed study pace, which comes along with the constant support from our team. Our learning solution is designed to facilitate learning at the student's own pace, with a uniform structure that includes continuous evaluations and practical exercises to reinforce knowledge.

Our program's calendar consists of 9 monthly modules, which are divided into 4 weekly teaching units. In addition, there are 3 months for the Master's Final Project (MFP). This structure may be adjusted depending on the innate complexities of the program.

Each of these units contain introductory videos on concepts, syllabus prepared by our experts (which can be viewed online or downloaded in PDF), and self-assessments. Some units may even have practical exercises or examples, if required by the expert. At the end of each module, there will be a compulsory exam in order to complete the module.

The Director will ask all students to complete a Master's project, in which they will apply everything they have learnt in the previous modules, to practical cases. Students will have 3 months to complete and submit the project, during which they will receive the support from the program's team.

Finally, you will receive the status reports from our team through regular follow-ups throughout the program.

EVALUATION

The assessment will be ongoing throughout the training program and will take into account not only the acquisition of knowledge, but also the development of skills and attitudes.

At the end of each monthly module, the student must answer a test-type exam on the online training platform, in addition to pose a variety of practical cases along the topics and optional unit test so as to achieve the maximum consolidation of technical concepts.

To obtain the degree it will be necessary to pass the assessable modules of the program.

DEGREE

Students who have visualized all the lessons, successfully passed the self-assessments and exams, and submitted the master's final project, will receive Structuralia's certificate and the title of Master of Professional Development by the Universidad Católica San Antonio de Murcia (UCAM), in digital format.

Likewise, the student can request a certificate of completion of his/her master's degree, or a certificate of completion from Structuralia.

The student may also request a the Hague Apostille on his/her certificate of completion from the university an additional fee.

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