



Microcredential Specification

Key Information			
Course title	PMM020-MC Operations and quality management		
Level	7	Credit value	15
Federation member	RHUL	Notional study hours and duration of course	150 hours
Academic subject expert	Carl Davies		
Course co-author (where applicable)			

Rationale for the course

Operations and Quality Management form important parts of driving forward successful businesses. It is important for Project Managers and management staff to understand how businesses can work both efficiently and to maintain quality. This course provides you with an understanding of operations, strategy, process and quality management within the overall context of the supply chain. It also provides a knowledge framework and principles of operations management using examples from manufacturing and service contexts.

Aims of the course

In this course you will develop an understanding of the key aspects and practices in the management of operations and processes, including scheduling of activities, procurement and the supply chain. You will look at the concepts and theories of quality management, including planning, control and assurance, and learn how to apply these as part of the project management process. You will consider the historical evolution of operations and production management concepts, from craft production, through to mass production, lean production, agile manufacturing, modular manufacturing and mass customisation. You will also examine the totality of the tools comprising lean methods of production and kaizen continuous improvement activities.

Topics covered in this course:

Course overview and introduction

1. Introduction to processes
 - a. definition of process
 - b. how to design and depict a process
 - c. ISO process mapping notation
 - d. why processes are so important to operations management.
2. Understanding operations management
 - a. expanding our understanding of processes to the whole operation
 - b. reviewing end-to-end process view
 - c. reviewing three+ levels of analysis
 - d. understanding and applying the 4 V's method for evaluating a process
 - e. embedding learning through a Tesla case study.
3. Positioning operations
 - a. intrinsic and extrinsic motivation
 - b. breakthrough and continuous Innovation
 - c. process layout types
 - d. job design
 - e. process automation.
4. Managing capacity
 - a. definition of capacity
 - b. capacity/demand mismatch
 - c. demand variability
 - d. overall equipment effectiveness (OEE)
 - e. leading and lagging indicators
 - f. chasing demand
 - g. shaping demand.
5. Inventory management
 - a. EOQ – economic order quantity
 - b. holding costs
 - c. three sources of inventory
 - d. reasons to manage inventory.
6. Lean principles
 - a. TPS (Toyota production system)
 - b. lean thinking
 - c. lean waste
 - d. value stream maps (VSM).
7. Approaches to controlling quality in operations
 - a. European Foundation for Quality Management (EFQM)
 - b. total quality management (TQM)
 - c. ISO certification.
8. Measuring operational quality and performance
 - a. justification for measuring operational performance
 - b. key performance indicators (KPIs)
 - c. balanced scorecard
 - d. KPI target setting approaches
 - e. sample KPIs
 - f. measuring project performance.
9. Operations strategy and further quality/process improvement techniques
 - a. operations strategy
 - b. the drivers for operational change
 - c. Kanban
 - d. process simulation software and techniques.
10. Introduction to Six Sigma and value stream mapping
 - a. statistical process control
 - b. Six Sigma quality control method
 - c. critical to quality (CTQ) factors
 - d. Six Sigma levels.

Learning outcomes for the course

A. Knowledge and understanding

By the end of this course students should be able to:

- Show an advanced understanding of the key aspects and practices in the management of operations and processes including scheduling of activities, procurement and supply chain;
- Show an advanced understanding of the key concepts and theories in quality management (quality planning, quality control and quality assurance) and ability to apply them as part of the project management process;
- Show a good grounding in the historical evolution of operations and production management concepts from craft production, through to mass production, lean production, agile manufacturing, modular manufacturing and mass customisation;
- Show an in depth understanding of the totality of the tools comprising lean methods of production and kaizen continuous improvement activities.

Learning and Teaching Strategy and Methods

The learning and teaching strategy for this course reflects the flexible, self-paced model required for microcredentials, ensuring that all students can progress in a structured yet adaptable way, regardless of their location, background or prior experience of online learning.

The course is designed by subject specialists and supported by expert learning designers and online education teams to ensure that learning activities, digital media and assessment are aligned to the intended learning outcomes.

A structured sequence is embedded into every course, following a coherent approach to content acquisition, active learning, feedback and evaluation.

- Content introduces and explains core concepts through a blend of video and digital reading.
- Activity enables students to apply learning through practice-based, professional and reflective tasks.
- Feedback is provided through automated quizzes, model responses and guidance from the AI study assistant.
- Evaluation encourages learners to reflect on their progress and identify next steps in their learning journey.

This approach ensures continuity throughout the ten modules and supports students in building confidence, competence and independence progressively across the course.

Teaching methods

The following teaching methods are integrated into the course design:

- Video-based guidance delivering structured explanations of key ideas with visual aids
- Interactive learning activities enabling knowledge application to authentic workplace scenarios
- Self-directed independent learning through guided readings, online library exploration and personal research
- Frequent formative assessment including knowledge checks, worked examples and reflective questions to reinforce understanding and skills development
- AI-supported learning with 24/7 access to the AI study assistant for clarification, feedback and study support at the point of need
- Progress monitoring and reflection helping students assess achievement, review understanding and plan further study

Support for learning

Although this course does not include scheduled live teaching, students are never studying alone. The learning platform includes tools to track progress, submit assessments and access feedback, while the Online Library provides curated digital resources to enhance academic skills and knowledge

Clear guidance is provided to help students manage their study time, structure weekly goals and maintain consistency throughout the learning journey. Recommendations for integrating study into personal and professional schedules are included in the induction resources, promoting resilience, motivation and successful completion.

Assessment strategy, assessment methods

This course uses a practical assessment approach that helps you show both your understanding of key ideas and your ability to apply them to real business situations. You will complete a coursework task that test how well you can use core theories and analytical techniques. This assessment focuses on developing real professional skills, such as interpreting business data, solving operational or financial problems, and explaining your decisions clearly using appropriate frameworks. This approach looks at your abilities as a whole—how you connect theory with practice—while also helping you build your analytical, critical-thinking, and communication skills over time. A mark of 50% is required to pass the assessment.

The assessment design is flexible and supports self-paced learning. For coursework tasks, students can choose from a range of assessment windows and submit their work at the point that best fits their personal schedule and study plans. This flexibility allows you to manage your learning in a way that suits your circumstances, while still meeting the course's academic requirements. It also encourages you to plan your time effectively and engage with the material at a pace that supports deeper understanding.

Assessment Elements

1. Coursework (100% weighting)
 - Students are required to apply the concepts and techniques learned in the course to a realistic business scenario.
 - The assessment is designed to develop your global employability skills.
 - The coursework is directly aligned with the course's learning outcomes, ensuring you are assessed on the knowledge, skills, and competencies you are expected to achieve.

Learning resources

This course is structured into ten modules, designed to support flexible self-paced study and the practical application of knowledge to professional contexts.

The learning resources are curated to enable both directed learning and independent study, providing opportunities to acquire new knowledge, apply concepts in realistic scenarios, receive feedback and evaluate progress throughout the course

Each course follows a consistent learning sequence, incorporating a blend of the following resource types:

Video lessons

Concise explainer videos introduce key concepts and practical methods. Presenters utilise visual aids such as slides and screen demonstrations to enhance understanding and maintain clarity.

Interactive and practical activities

Learning activities provide opportunities to apply concepts to real-world and workplace scenarios. These include worked examples, reflective tasks and application-based exercises designed to build confidence and professional competence as you progress

Quizzes and knowledge checks

Automated quizzes provide rapid feedback to support mastery of key ideas. These may include multiple-choice questions, worked solution examples or feedback from the AI study assistant.

Quizzes are generally used formatively to reinforce learning, but some may contribute to assessment if completed under appropriate conditions.

AI-supported learning

A 24/7 AI study assistant is available throughout the course to provide guidance, help learners reflect on progress, clarify concepts and support completion of designated activities.

Self-evaluation tools

Regular opportunities are provided for learners to monitor progress, reflect on achievements and identify areas requiring further study, ensuring continuous learning and improvement

Project-based learning

Each learner develops a professional-quality project linked to a realistic scenario. This supports the development of globally relevant employability skills, including communication, digital capability, problem-solving and adaptability

E-resources and library access

All students receive full access to the University of London Online Library and VLE resources. Directed reading and recommended online sources are integrated into each course, supporting further research, information-literacy development and independent study

Materials are provided in accessible digital formats suitable for study across multiple devices. Learners are encouraged to extend their engagement with topics of interest through wider reading and exploration of online library holdings.

Study expectations

Courses include indicative timings to support planning and time management, with a total study commitment of approximately 150 hours for the full course. Learners may adjust weekly effort to suit their individual needs and availability whilst progressing through courses in the recommended learning sequence

Reading list

- Slack, N. and A. Brandon-Jones *Operations and process management: principles and practice for strategic impact*. (Harlow: Pearson, 2018) 5th edition.
Note: This is the main book for this course and used almost in every topic of the course
- Slack, N., A. Brandon-Jones, R. Johnston and A. Betts *Operations and process management*. (Harlow: Pearson, 2015) 4th edition
Note: A few chapters from this book are used in the course, i.e. Chapter 6 in topic 3.
- Interview with Peter Hochholdinger, who was Vice President Production at Tesla between 2016 and 2019: Lambert, F. ['Tesla's new VP of Vehicle Production is impressed: 'they are about seven years beyond everything I've seen before' Links to an external site.](#), *Electrek* (2016).
- Office of Rail and Road ['Passenger rail performance' Links to an external site.](#) (n.d.).

Precise reading from this material will be specified as part of the course.

Additional recommended reading and other references will be available in the VLE.