



## Microcredential Specification

Key Information			
Microcredential title	Business Forecasting and Data Analytics		
FHEQ Level	7	Credit value	15
Federation Member	City St George's, University of London	Notional study hours and duration of course	150 hours
Course Academic Subject Expert	Wayne Holland		

Rationale for the course
Every supply chain manager makes plans or decisions that depend on how data are analysed, summarised and translated into forecasts. This course introduces the basic principles in any forecasting and decision making exercise, which are aimed at informing the process of planning, capacity and quality management.

Aims of the course
<p>This course will provide you with tools and insights on how to make use of available data in daily operations, generate and evaluate forecasts and make informed decisions, more specifically, the course aims to:</p> <ul style="list-style-type: none"> <li>• Review basic concepts in data analytics</li> <li>• Introduce time series and multivariate analysis</li> <li>• Develop an understanding of the basic principles in forecasting</li> <li>• Foster critical analysis of time series data</li> <li>• Generate opportunities for hands on experience with a few forecasting problems</li> <li>• Introduce a range of forecasting methods</li> <li>• Enable assessments of different forecasts</li> <li>• Help to make decisions under uncertainty</li> </ul>

Topics covered in this course:
<ol style="list-style-type: none"> <li>1. Inventory modelling</li> <li>2. Introduction to forecasting – the tools and their role in supply chain modelling</li> <li>3. Forecasting with time series decomposition</li> <li>4. Forecasting with exponential smoothing methods</li> <li>5. Forecasting with regression</li> <li>6. Expert judgement in forecasting</li> <li>7. Queueing models</li> <li>8. Optimisation I – linear programming</li> <li>9. Optimisation II – integer programming</li> <li>10. Optimisation III – network modelling</li> </ol>

Learning outcomes for the course

**On successful completion of this course, you will be expected to be able to:**

### **Knowledge and understanding**

- Apply the basic principles of forecasting
- Demonstrate, describe and explain uncertainty and its implications for planning and decision-making
- Select and apply an appropriate forecasting method to the supply chain management problem
- Demonstrate understanding of the judgmental aspects in forecasting

### **Skills**

- Use model building and software as well as make more effective use of judgment when selecting data and variables to model, or when evaluating the results of your models
- Identify key features of time series data and other data
- Evaluate and compare or combine forecasts
- Develop and report forecasts based on the methods covered in the course

### **Values and attitudes**

- Demonstrate recognition of the challenges of planning in an uncertain world, the limitations of forecasting
- Demonstrate an understanding of the importance of stating and acknowledging the assumptions behind model building and expert opinions

## **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 module'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 module to a realistic business scenario.
  - The assessment is designed to develop your global employability skills.
  - The coursework is directly aligned with the module'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**

- Anderson, D.R., D.J. Sweeney, T.A. Williams, J. Freeman and E. Shoesmith *Statistics for business and economics*. (South-Western: Cengage, 2017).
- Anderson, D.R., D.J. Sweeney, T.A. Williams, M. Wisniewski and X. Pierron *An introduction to management science*. (Andover: Cengage, 2017).
- Barnes Jr, J.H. 'Cognitive biases and their impact on strategic planning', *Strategic Management Journal* 5(2) 1984, pp.129–137.
- Eroglu, C. and K.L. Croxton 'Biases in judgmental adjustments of statistical forecasts: The role of individual differences', *International Journal of Forecasting* 26(1) 2010, pp.116–133.
- Goodwin, P. and G. Wright *Decision analysis for management judgment*. (Chichester: Wiley, 2004).
- Lam, J.S.L. and E. Van De Voorde 'Scenario analysis for supply chain integration in container shipping', *Maritime Policy and Management* 38(7) 2011, pp.705–725.
- Larson, R.C., B.M. Larson and K.L. Katz 'Prescription for waiting—in line blues: Entertain, enlighten and engage', *Sloan Management Review* 32(2) 1991, pp.44–55.
- Makridakis, S., S.C. Wheelwright and R.J. Hyndman *Forecasting methods and applications*. (New York: John Wiley, 1998).
- Moon, M.A., J.T. Mentzer and D.E. Thomas Jr 'Customer demand planning at Lucent Technologies: A case study in continuous improvement through sales forecast auditing', *Industrial Marketing Management* 29(1) 2000, pp.19–26.
- Slack, N., A. Brandon-Jones and R. Johnston *Operations management*. (Upper Saddle River, NJ: Pearson, 2016) eighth edition.
- Sodhi, M.S. 'How to do strategic supply-chain planning', *Sloan Management Review* 45(1) 2003, pp.69–75.
- Wilson, J.H. and B. Keating *Business forecasting*. (New York: McGraw Hill, 2007) fifth international edition.

*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.*