Wrexham glyndŵr UNIVERSITY

MODULE SPECIFICATION PROFORMA

Module Title:	**Project and Manufacturing Operations Management**	**Level**:	6	**Credit Value**:	20

Module code:	ENG626	**Is this a new module?**	No	**Code of module being replaced**:	

Cost Centre:	GAME	**JACS3 code**:	N290

Trimester(s) in which to be offered:	1, 2 & 3	**With effect from:**	September 16

School:	Applied Science, Computing & Engineering	**Module Leader:**	Nataliia Luhyna

Scheduled learning and teaching hours	56 hrs
Guided independent study	144 hrs
Placement	0 hrs
Module duration (total hours)	200 hrs

Programme(s) in which to be offered	Core	Option
BEng(Hons) Industrial Engineering	☐	✓

Pre-requisites
None

Derogations
None

Office use only
Initial approval June 16
APSC approval of modification *Enter date of approval* Version 1
Have any derogations received SQC approval? Yes ☐ No ☐

Module Aims
To analyse and apply methods of forecasting, capacity planning, activity scheduling and inventory management, within a manufacturing environment and compare traditional methods with more recent developments in the application of technology and philosophy in manufacturing. Also to examine the evolution and adoption of management techniques in engineering business.

Intended Learning Outcomes

Key skills for employability

KS1	Written, oral and media communication skills
KS2	Leadership, team working and networking skills
KS3	Opportunity, creativity and problem solving skills
KS4	Information technology skills and digital literacy
KS5	Information management skills
KS6	Research skills
KS7	Intercultural and sustainability skills
KS8	Career management skills
KS9	Learning to learn (managing personal and professional development, self-management)
KS10	Numeracy

At the end of this module, students will be able to		Key Skills	
1	Analyse and use the techniques of forecasting and explain how production capacity is determined and how capacity is adjusted.	KS1	KS4
		KS2	KS5
		KS3	KS6/10
2	Research and utilise traditional methods of inventory control for independent demand, along with the preparation of schedules and appreciate how schedule performance is monitored.	KS1	KS4
		KS2	KS5
		KS3	KS6/10
3	Design project control systems and produce associated documentation as a key to successful project completion.	KS1	KS4
		KS2	KS5
		KS3	KS6/10
4	Analyse capital project expenditure/budgeting methods and be able to identify any weaknesses or improvements that could be implemented.	KS1	KS4
		KS2	KS5
		KS3	KS6/10
5			

	Evaluate the responsibilities and legal liabilities of the project manager's role: Transferable/Key Skills and other attributes: 1. Apply managerial attributes to a number of circumstances. 2. Develop an awareness of legal implications affecting the engineering role.	KS2 KS3	KS5 KS6 KS10

Assessment:

A Portfolio of Continuous Assessment 100%
The Assessment would consist of a series of tasks, these may be case studies relevant to the students workplace, or from given scenarios.

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)	Duration (if exam)	Word count (or equivalent if appropriate)
1	1-4	Portfolio	100%	N/A	3000

Learning and Teaching Strategies:

Presentation will be through a series of lectures, tutorials, works visits and assignments using suitable computer packages where appropriate. Case studies will be used to promote student's research and investigative skills.
The essence of engineering management is teamwork and accordingly this part will be mainly directed towards opportunities for students to research, work and give presentations in teams. The reality of the situation will be enhanced by role - playing involving members of staff and invited practising engineers. The use of lateral/innovative thinking to produce answers to problems will be encouraged together with the constant querying of any 'concrete' parameters given for any situation. Where the more formal lecture content of the course is given this will be supplemented by talks/lectures from visiting project managers active in the field.
Individual study time will be used for the reading of set texts, which will be provided as hand-outs or via Moodle, or both.

Syllabus outline:

Management Issues:
Organisational behaviour, personnel management: the dynamics of team building and composition, leadership styles, running meetings, selection of team members. Context of own business.

Business Issues:
Market research; selection, collection, interpretation and presentation of information; market segmentation; identification of market opportunities and threats; customer base - social, demographic and economic issues. Product development as a project. Patents. Sourcing of finance.

Project Planning:
Establishing and interpreting the brief, setting budgets, negotiation of fees, professional indemnity, project strategy, programming techniques, 'what if?' scenarios, project manuals, quality assurance. Contractor appraisal and selection, maintenance management. Formal and informal contracts; product liability;

Project Control:
Cash flow, progress reports. Client report. Project - team and client/user feedback meetings. Problem solving and decision making. Feedback regarding planning, costs/strategy.

Project Management:
Personal attributes of a successful project manager. The control of time and quality. Cost as a definition. Terms of Engagement in common use, legal precedent regarding project manager's responsibilities.

Project Management Systems:
General Systems Theory - applied to project management in the Engineering Industries, and its application in both professional and contracting industries.

Company Economics:
Concept of resource allocation, mechanisms for determining resource allocation. Idea of opportunity cost. Market versus command economy. Examination of demand behaviour. Market demand curves, conditions of demand, changes in demand. Examination of supply behaviour. Market supply curves, conditions of supply, changes in supply. Interaction of supply and demand, basic market model. Concept of equilibrium shifts in demand and supply and their consequences.

Budgeting and costing:
Appreciation of the need for overall cost control. Budgeting control and budgeting, standard costing and variance analysis. The elements of job costing, break even analysis and marginal costing.

Project appraisal:
Concept of cash flow across a company boundary. Sources of funds, time value of money. Rate of return or investment. Present and future worth calculations. Evaluation and comparison of projects using rate of return, payback method, discounted cash flow techniques. Risk analysis, dealing with investment under conditions of uncertainty management of risk.

Bibliography:

Essential reading

Galloway R L; (2000) Operations management in context.; Butterworth - Heinemann

Other indicative reading
Russell R S and Taylor B W; (2000) Operations Management; Prentice Hall Terry hill; (2004) Operations Management; Palgrave Macmillan Dennis Lock (2007) Project management; Gower Publishing Ltd