Module 9: Problem Solving and Project Management

Module title			
Problem Solving and Project Management			
Module NFQ level	**Module number / reference**	**ECTS Value**	**Duration**
9	MSC_PBM_PSPM	**5**	**12 Weeks**
Parent programme(s)		**Stage of parent programme**	**Semester No.**
Master of Science in Pharmaceutical Business Management		1	1 or 2
Postgraduate Diploma in Science in Pharmaceutical Business Management		1	1 or 2
Certificate in Pharmaceutical Business Management		1	1 or 2

Teaching and Learning modes	**Proportion** (% of Total Directed Learning)
Classroom / Face to Face	**80%**
Workplace	
Online	
Other (Identify)	**Blended: 20%**

Entry requirements (statement of knowledge, skill and competence)	
Learners should normally hold an honours (NFQ Level 8) degree in a cognate or non-cognate discipline or equivalent qualification, from an approved tertiary/or professional institution.	
Maximum number of learners per instance of the module	**100**
Average (over the duration of the module) of the contact hours per week	**3**
Pre-requisite module title(s) (if any)	
Co-requisite module title(s) (if any)	**N/A**
Is this a capstone module? (Yes or No)	**No**

Module-specific physical resources and support required per centre (or instance of the module)
Lecture room with internet access, audio-visual equipment and white board. Moodle Area.

Specification of the qualifications (academic, pedagogical and professional/occupational) and experience required of staff working in this module.		
Role e.g. Tutor, Mentor etc	**Qualifications & experience required:**	**# of Staff with this profile (WTEs)**
Lecturer	Lecturing staff are required to hold at least a master's degree qualification in Business, Engineering, Management or Leadership. Industry experience is beneficial but not a requirement. Ideally, they would also hold a third level teaching qualification (e.g. the Griffith College Certificate in Education, Learning and Development).	0.25

Analysis of required learning effort		
***Effort while in contact with staff**	**Minimum ratio teacher / learner**	**Hours**
Classroom and demonstrations	1:100	18
Mentoring and small-group teaching	1:20	18
Other (specify)		
Independent Learning		
Directed e-learning (hours)		-
Independent Learning (hours)		89
Other hours (specify)		-
Work-based learning hours of learning effort		-
Total Effort (hours)		125

Allocation of Marks					
	Continuous Assessment	**Supervised Project**	**Proctored Practical Exam**	**Proctored Written Exam**	**Total**
Percentage Contribution	100%				**100%**

1.1.1 Module aims and objectives

This module examines in detail the subject of how projects are managed successfully to deliver business goals. The module assesses the importance of identifying, assessing, controlling and managing projects in a business context.

Learners gain a detailed understanding of project management best practices and the relationship between project management, technology and strategy. Learners therefore learn and apply an approach and techniques to completing projects within the constraints of budget, time and specifications.

1.1.2 Minimum intended module learning outcomes

On successful completion of this module, learners are able to:

MIMLO 9.1 Discuss the importance of a structured approach to project management
MIMLO 9.2 Create a project plan for a project scenario that includes key tasks, critical path, dependencies, and realistic timeframes
MIMLO 9.3 Apply various tools and techniques to initiate, plan and evaluate a project
MIMLO 9.4 Evaluate the critical role of resource allocation to projects
MIMLO 9.5 Analyse the monitoring and control approaches in a project.

1.1.3 Rationale for inclusion of the module in the programme and its contribution to the overall MIPLOs

Project management and strategic management theory provide useful tools for time management, setting goals and in critical thinking and problem solving. World Economic Forum (2020) identifies these as key skills for industry. Based on research carried out with industry and secondary research, it is understood that managers are required to oversee multiple projects. Companies measure employees and vendors based on their ability to manage projects efficiently. This module will equip learners with the tools and techniques needed to ensure they manage projects and cope successfully in the workplace.

Project work is an integral and ever-growing feature of the pharma industry and an increasingly necessary skill for managers in the sector. Understanding the different challenges, requirements and skills for managing projects compared to managing continuous work, is a vital attribute for managers in the industry, and this module provides this. Managers need to be able to distinguish between the two approaches to business challenges, because though complimentary, they are fundamentally different and require different skillsets and knowledge, all of which are covered in this module.

This module supports the achievement of the following MIPLOs (per each award):

Programme Title	MIPLOs achieved
MSc in Pharmaceutical Business Management	(i) to (iii), (v), (vi)
PgDip in Science in Pharmaceutical Business Management	(i), (ii), (iv), (v)
Certificate in Pharmaceutical Business Management	(i), (ii), (iv)

1.1.4 Information provided to learners about the module

Learners enrolled on this module initially receive a copy of the module descriptor, assessment briefs and assessment strategy. These materials are given directly by the lecturer but also by the year head as part of the Semester Schedule Handbook for award stage modules of the programme. All content is provided on Moodle as well as access to additional content through the library and online resources. In class, learners are provided with a PowerPoint pack, and extensive reading list, incorporating professional and academic and non-academic sources. Guest lectures will be introduced to ensure practical knowledge and real-life examples will keep the content relevant.

1.1.5 Module content, organisation and structure

Introduction, Overview & Definitions

- Understanding process work and project work
- Identifying the suitability and requirements of each approach
- Understanding approaches to project challenges
- Agile

The Case for Project Management

- Why and when a project approach is necessary
- The business context
- The organisational context
- The role of stakeholders
- Scope management

Leadership in projects

- Management and leadership
- Team selection and management
- Conflict & communication management

Resource Management

- Work breakdown structure
- Budgeting
- Risk management
- Project Control

Scheduling

- Critical path management
- Gannt charts
- Duration calculation
- Crashing and lagging projects

Project Closure

- Evaluation
- Lesson learnt

Timetabling, Learner Effort and Credit

The contact hours, assessment and total learner effort are detailed above, and are reflective of, and appropriate for, the module ECTS.

The lectures in the first week will introduce the module to learners and cover an introduction and overview of the topic and the importance it plays within change in organisations. The lectures and tutorials of the following weeks will then turn to focus on the core content, and preparing for the assignment. The indicative teaching plan is below.

Week 1	• Introduction: Why Project Management? • The Organizational Context: Strategy, Structure, and Culture
Weeks 2 & 3	• Leadership and the Project Manager • Stakeholder Management
Weeks 4 & 5	• Scope Management • Proper Definition of Business Requirements • Agile and other approaches
Weeks 6 & 7	• Project Team Building, Conflict, and Negotiation • Communications and Change Management
Weeks 8 & 9	• Risk Management • Cost Estimation and Budgeting
Week 10	• Project Scheduling: Networks, Duration Estimation, and Critical Path • Project Scheduling: Lagging, Crashing, and Activity Networks
Week 11	• Resource Management • Project Evaluation and Control
Week 12	• Project Closeout and Termination

1.1.6 Module teaching and learning (including formative assessment) strategy

The module is structured to help learners learn more about the topic through blended learning, including attending lectures, reading case studies and notes, completing short activities, watching video clips, and assessment activities. Throughout, learners will consider different aspects of project management such as scheduling, budgeting and problem solving and considering how these apply in real organisations.

The module is assessed via continuous assessment (100%). Continuous assessment will involve two assignments: (i) a case study to evaluate problem solving abilities, (ii) the preparation of a comprehensive project plan and scope document for the development and launch of a new pharmaceutical product on the marketplace.

1.1.7 Work-based learning and practice-placement

There is no work based learning or practical placement in the module.

1.1.8 E-learning

Griffith College uses Moodle, a virtual learning environment, to support its delivery of e-learning activities in the form of peer-to-peer support based around activities where learners give and receive feedback, forums where learners must contribute, formative quizzes and video links.

1.1.9 Module physical resource requirements

There are no special requirements for this module beyond a standard classroom set up.

1.1.10 Reading lists and other information resources

Primary reading (Core Texts)

Mantel, S.J., Meredith, J.R., Shafer, S.M., Sutton, M.M. (2021) *Project Management in Practice*, 7th ed. New York: Wiley.

Kerzner, H. (2022) *Project Management Metrics, KPIs, and Dashboards: A Guide to Measuring and Monitoring Project Performance*. 4th Edition. Hoboken, NJ: John Wiley & Sons.

Pinto, J.K. (2019) *Project Management: Achieving Competitive Advantage*,5th ed. Harlow: Pearson Education.

Watt, A. (2014) *Project Management.* BCcampus. Available at: https://open.umn.edu/opentextbooks/textbooks/project-management (Accessed: 11/07/2022).

Secondary reading and eResources

Project Management Institute (2021), *A Guide to the Project Management Book of Knowledge*, 7th ed. PMI Publications

Vaidyanathan, G., 2013. *Project Management: Process, Technology and Practice:* International ed, Indiana University, South Bend.

1.1.11 Specifications for module staffing requirements

Lecturer and other personnel should hold a Masters Level (Level 9) qualification in Business, Engineering, Management or Leadership. Industry experience is beneficial but not a requirement

Ideally, they would also hold a third level teaching qualification (e.g. the Griffith College Certificate in Education, Learning and Development).

1.1.12 Module summative assessment strategy

The following table indicates the module's learning outcomes' alignment with the assessment used for the module:

No.	Description	MIMLOs	Weighting
1	Presentation	MIMLOs 1 to 5	40%
2	Assessment 2 (Project plan 4,000 words)	MIMLOs 1 to 5	60%

Reassessment/Repeat assessment strategy: Griffith College regulations state that learners must pass all component elements of the module to be deemed to have passed the module.

- In the event of a learner failing components of / this module, they will be required to submit a new individual repeat assignment which will be made available on Moodle to learners, and which must be submitted as per faculty instructions.
- In the event of a learner failing the group assessment element of this module, a new individual repeat assignment will be made available on Moodle to learners which must be submitted as per faculty instructions.
- In the event of the learner failing the exam, learners will take the re-sit exam at the next available sitting, details of which will be made available to learners via Moodle.

1.1.13 Sample assessment materials

Please see sample assessment supplementary document.Module 10: Product CommercialisationModule 10: Product Commercialisation

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Product Commercialisation			
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Workplace			
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Maximum number of learners per instance of the module	**100**		
Average (over the duration of the module) of the contact hours per week	3		
Pre-requisite module title(s) (if any)			
Co-requisite module title(s) (if any)	N/A		
Is this a capstone module? (Yes or No)	No		
Module-specific physical resources and support required per centre (or instance of the module)			
Lecture room with internet access, audio-visual equipment and white board. Moodle Area.			
Specification of the qualifications (academic, pedagogical and professional/occupational) and experience required of staff working in this module.			
Role e.g. Tutor, Mentor etc	**Qualifications & experience required:**		**# of Staff with this profile (WTEs)**
Lecturer	Lecturing staff are required to hold at least a master's degree in Business, Engineering, Management or Leadership, or a related discipline and/or an equivalent professional qualification. Industry experience is beneficial but not a requirement. Ideally, they would also hold a third level teaching qualification (e.g. the Griffith College Certificate in Education, Learning and Development).		0.4

Analysis of required learning effort		
***Effort while in contact with staff**	**Minimum ratio teacher / learner**	**Hours**
Classroom and demonstrations	1:100	60
Mentoring and small-group teaching	1:20	12
Other (specify)		
Independent Learning		
Directed e-learning (hours)		-
Independent Learning (hours)		178
Other hours (specify)		-
Work-based learning hours of learning effort		-
Total Effort (hours)		250

Allocation of Marks					
	Continuous Assessment	**Supervised Project**	**Proctored Practical Exam**	**Proctored Written Exam**	**Total**
Percentage Contribution	60%	-	-	40%	**100%**

1.1.14 Module aims and objectives

This module aims to introduce learners to the Regulatory, Financial and Commercialisation Frameworks in the Pharmaceutical and Biotechnology Industry. Success in the pharmaceutical and biotech industry requires a basic understanding of the R&D, financial and commercial launch paradigms. The main purpose of the module is to explore the phases of R&D through to regulatory approval; understanding the basic financial considerations and elements of global commercial launch. This module highlights the emergence of Biosimilars and Platform technology in a competitive and ever-changing global marketplace.

1.1.15 Minimum intended module learning outcomes

On successful completion of this module the learner will be able to:

MIMLO 10.1 Critically evaluate the Keys Phases in Pharmaceutical/Biotech Research and Development.
MIMLO 10.2 Analyse the role of Global Regulatory Affairs.
MIMLO 10.3 Evaluate the regulatory approval process in both the US and EU for new drug applications and changes to existing NDA.
MIMLO 10.4 Define a Biosimilar and discuss the challenges associated with the growth of the Biosimilar Market.
MIMLO 10.5 Evaluate basic financial investment metrics and demonstrate their associated advantages and disadvantages plus other selection methods.
MIMLO 10.6 Differentiate the elements of a commercial launch including phases, milestones and success factors.
MIMLO 10.7 Critically analyse the position of Platform technology as an emerging technology; co-developing new processes with vendors and/or other stakeholders.