

## MODULE DESCRIPTOR

### Module Title

Oil & Gas Financial Analysis, Modelling & Risk Management

Reference	BSM746	Version	5
Created	August 2021	SCQF Level	SCQF 11
Approved	September 2018	SCQF Points	15
Amended	August 2021	ECTS Points	7.5

### Aims of Module

To provide students with critical and analytical skills for appraising oil and gas investments and projects for viability, evaluating the implications of project financing arrangements, managing investment risk using derivatives and understanding the workings of the oil and gas markets.

### Learning Outcomes for Module

On completion of this module, students are expected to be able to:

- 1 Competently identify and critically appraise the unique attributes, contemporary developments and trends of the oil and gas industry as a basis for valuation and risk modelling.
- 2 Independently or collaboratively develop and authoritatively use financial models for making oil and gas investment and risk management decisions.
- 3 Critically evaluate risk management strategies, including real options and the working and regulation of oil and gas markets and derivatives.
- 4 Recommend and provide suitable justifications for alternative oil and gas investments using financial data, valuation models, risk considerations and relevant non-financial information.

### Indicative Module Content

Oil and gas financial/economic characteristics and market/price drivers; Project/investment valuation principles; Investment appraisal techniques; Oil and gas risk and opportunity analysis; Market/price risk; Real Options; Derivatives and crude oil and natural gas markets; Regulation of and accounting for derivatives; International project finance; Non-financial considerations.

### Module Delivery

This module is a lecture based course supplemented with tutorials and modelling workshop/lab sessions and directed study.

**Indicative Student Workload**

	Full Time	Part Time
Contact Hours	36	N/A
Non-Contact Hours	114	N/A
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	150	N/A
Actual Placement hours for professional, statutory or regulatory body		

**ASSESSMENT PLAN**

If a major/minor model is used and box is ticked, % weightings below are indicative only.

**Component 1**

Type:	Coursework	Weighting:	50%	Outcomes Assessed:	1, 2, 3, 4
Description:	Group Coursework.				

**Component 2**

Type:	Coursework	Weighting:	50%	Outcomes Assessed:	1, 2, 3, 4
Description:	Closed Book Exam				

**MODULE PERFORMANCE DESCRIPTOR****Explanatory Text**

The calculation of the overall grade for this module is based on 50% weighting of C1 and 50% weighting of C2 components. An overall minimum grade D is required to pass the module.

		Coursework:						NS
		A	B	C	D	E	F	
Coursework:	A	A	A	B	B	C	E	
	B	A	B	B	C	C	E	
	C	B	B	C	C	D	E	
	D	B	C	C	D	D	E	
	E	C	C	D	D	E	E	
	F	E	E	E	E	E	F	
NS		Non-submission of work by published deadline or non-attendance for examination						

**Module Requirements**

Prerequisites for Module	BSM004 Quantitative Methods for Finance or equivalent.
Corequisites for module	None.
Precluded Modules	None.

**INDICATIVE BIBLIOGRAPHY**

- 1 ANTILL, N. and ARNOTT, R., 2000. *Valuing oil and gas companies: a guide to the assessment and evaluation of assets, performance and prospects*. 2nd ed. Sawston: Woodhead Publishing Limited.
- 2 BREALEY, R.A., MYERS, S.C. and ALLEN, F., 2013. *Principles of corporate finance*. 11th ed. New York: McGraw-Hill International.
- 3 HELBAEK, M., LOVAAS, R. and MJOLHUS, J. O., 2013. *Financial modelling and asset valuation with excel*. Hoboken: Taylor & Francis.
- 4 KASRIEL, K. and WOOD, D., 2013. *Upstream fiscal and valuation modeling in excel: a worked examples approach*. Hoboken: John Wiley.
- 5 SIMKINS, B. J. and SIMKINS, R. E., 2013. *Energy finance and economics: analysis and valuation, risk management, and the future of energy*. Hoboken: John Wiley. ebook
- 6 MACK, I. M., 2014. *Energy trading and risk management: a practical approach to hedging, trading and portfolio diversification*. Singapore: John Wiley. ebook
- 7 JOVANOVIC, S., 2014. *Hedging commodities: a practical guide to hedging strategies with futures and options*. Harriman House Ltd.