

## Liverpool John Moores University

Title: Bowtie Risk Management  
Status: Definitive  
Code: **7543RTC** (120376)  
Version Start Date: 01-08-2019

Owning School/Faculty: Maritime and Mechanical Engineering  
Teaching School/Faculty: Risktec Solutions

Team	Leader
Alan Wall	Y

**Academic Level:** FHEQ7      **Credit Value:** 10      **Total Delivered Hours:** 16.5  
**Total Learning Hours:** 100      **Private Study:** 83.5

### Delivery Options

Course typically offered: Semester 1

Component	Contact Hours
Lecture	8
Online	.5
Tutorial	8

**Grading Basis:** 40 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Essay	AS1	An essay question comprising several component parts, based around a case study, up to 4,000 words long.	95	
Test	AS2	Individual and group activities eg. quiz, forum	5	

### Aims

*To provide an in-depth analysis of how bowtie analysis can be used to manage risk. To critically review its practical uses and benefits, with hands-on practice at using the technique.*

## Learning Outcomes

After completing the module the student should be able to:

- 1 Analyse hazard scenarios by applying the bowtie method and designing a bowtie diagram
- 2 Develop integrity assurance for bowtie barriers e.g. in terms of HSE critical tasks and/or HSE critical systems
- 3 Devise risk acceptance criteria for hazards in bowties

## Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

4000 word essay	1	2
Individual and group work	3	

## Outline Syllabus

*Introduction to risk assessment and bowties*

*The bowtie method – what is a bowtie and how to build one*

*Assuring barrier integrity*

*Effectiveness and ALARP for bowties*

*Benefits and practical uses of bowties*

*Facilitating bowtie workshops*

*Bowtie software tools*

## Learning Activities

A combination of lectures, exercises and supported self study.

## Notes

Bowtie analysis is an increasingly popular approach to help manage risk. This module introduces bow-tie methodology (also known as barrier diagrams) and examines in detail the various bowtie analysis components. The module also provides a critical review of the method's benefits, limitations and practical uses, with hands-on practice at applying the technique.

Assessment is in the form of an essay combined with activities (e.g. exercises, discussions, etc.). The delivery modes for the module elements are explained below.

Lecture (using slides and notes): will be delivered by classroom based teacher (face to face) or online self-study (distance learning) or mixture of the two (blended

learning).

Tutorial/Activities (exercises and reviews): will be delivered by classroom based teacher (face to face) or online activities with teacher feedback/virtual classroom (distance learning) or mixture of the two (blended learning).

Tutor supported online: will be delivered by email support prior to assessment submission (face to face) or tutor feedback activities, virtual classrooms and email support (distance learning) or mixture of the two (blended learning).