
FACULTY OF ENGINEERING SCIENCE AND THE BUILT ENVIRONMENT

Unit title:	Asset Management	
Unit number:	BCE/1/026	
Unit value:	1.0	
Unit co-ordinator:	P J Mellow	
Contact time:	Lectures	39 hours
	Tutorials	13 hours
Private study time:	98 hours	
Unit pre-requisites:	None	

SHORT DESCRIPTION

The unit covers railway maintenance procedures, personnel and responsibilities. It deals with inspections, assessment, standards, monitoring and repair of bridges, tunnels, earthworks and drainage structures.

AIMS

To introduce a range of aspects of railway maintenance management.

LEARNING OUTCOMES

- * Understand inspection, monitoring and assessment studies, and interpret the results of these studies.
- * To understand a variety of remediation techniques and their applicability to give best value for the railway
- * To specify inspection, monitoring and assessment regimes and specify appropriate remediation works.

TRANSFERABLE SKILLS

- manage own roles and responsibilities;
- manage own time in achieving objectives;
- receive and respond to a variety of information;
- communicate in writing;
- methodical approach to the recording and analysis of data;
- deal with a combination of routine and non routine tasks;
- extending knowledge and understanding to ability to solve practical problems;
- understanding of relevant technology.

TEACHING AND LEARNING PATTERN

Lectures by experienced engineers with appropriate handouts and group seminars intended to encourage discussion and reflection on their own and other students' experiences. Students will be expected to investigate around the subject outside normal teaching times.

INDICATIVE CONTENT

The following topics will be addressed by the Unit:

Inspection Techniques of inspection (visual, NDT, track rec vehicle)

Assessment and Interpretation Acceptance levels, trigger levels (red, amber) prioritisation.

Remediation Grouting, walls, drainages, stone blowing, ballast cleaning, tamping.
Reconstructions, restrictions, speed, weight

Life Extension Whole life cost, Asset value

Reporting to Regulatory Bodies

Monitoring Techniques, strain gauges, electrolevels, surveying tools and gauges

ASSESSMENT METHOD

Continuous Assessment

The unit is assessed by coursework. Students must achieve a pass mark of 40% in their overall unit. Students must submit an individual piece of work covering an aspect of the course. This piece of work is most likely to take the form of a case study drawing on students' practical knowledge of the subject.

INDICATIVE SOURCES

Core

The Permanent Way Handbook, Permanent Way Institute. Available through membership of PWI which will be arranged during the course.

Background

Cope D L, Ellis J B British Railways Track, 7th Edn, PWI 2001

SRA, Building a better railway, 2000

H&SE Maintaining a safe railway infrastructure. Report on Railtrack's management system for Contractors, 1996

House of Commons Transport Committee. 4th Report on rail safety, 2 vols HMSO London

Railway safety critical work, Railways (Safety Critical Works) Regulations, 1994 Approved Code of Practice and Guidance L50, 2nd Edition H&SE 1996

Smith M, British Railway bridges and viaducts, Ian Allen Publishing, Shepperton, 1994

Murphy IS, Risk assessment of railway junction layouts, Stirling, Arklay Publishers 1997