



Sheffield Fracture Mechanics

FRACTURE TRAINING ASSOCIATES

A SIX DAY COURSE
IN TWO PARTS

at the Hilton, Sheffield

23-25 April 2001
& 14-16 May 2001

Sheffield Fracture Mechanics

Our case-study based introduction to fracture mechanics for engineers and managers has been fulfilling industries' training needs for almost twenty years. Delegates have come from all the major industrial sectors that need fracture mechanics expertise or an appreciation of fracture mechanics issues.

Continual improvement of the course material addresses key technical developments in Structural Integrity, Codes of Practice, Design, Defect Tolerance and Failure Assessment procedures.

The course is presented in two parts by a team with international reputations in teaching, consultancy and research.

WHO SHOULD ATTEND

The Sheffield Fracture Mechanics course has provided training for project managers, consultants, design and mechanical engineers, metallurgists, risk assessors and inspectors from a wide range of industries.

Engineering professionals from major international companies and their suppliers in the aerospace, pressure vessel, power generating, automotive, offshore, chemical processing, insurance industries and their regulatory bodies have benefited from our course.

Our customers include: AEA Technology, BG Technology, BP, Lloyds Register, BAe, Rover, Nissan, Rolls-Royce, Black & Decker, Dow Corning, Zeneca, Kvaerner, Corus (British Steel), Exxon, Tecnatom SA (Madrid), Shell, Alcan, GKN, GEC, Westland Helicopters, Dowty, Jetstream, Short Bros. (Belfast), NEI Parsons, ICI, BNFL Magnox, British Energy (Nuclear Electric), Nortel, Airbus, CMB, Health & Safety Executive.

COURSE CONTENT

The principles of engineering fracture mechanics from brittle failure to ductile tearing are presented in an accessible way. Video animation is used to portray the physical process that takes place at a crack tip. Structured tutorial sessions reinforce lectures by offering the opportunity for practice and discussion.

The principles learnt are applied in the use of case studies that demonstrate the application of design, failure analysis, damage tolerance and assessment techniques. Case studies are drawn from power, pipeline, processing and aerospace to provide valuable experience in the use of fracture mechanics.

Working in groups with representatives from different industries promotes lively discussion and useful insights.

International standards and codes of practice are used and critically reviewed.

COURSE STRUCTURE

The course is presented in two parts of three days each separated by a few weeks during which participants consolidate their learning by completing the Dinorwic Case Study, the UK's pre-eminent example of the use of fracture mechanics for damage tolerant design.

Guidance and advice on the project are available from the course team by telephone, fax, email or letter.

Feedback is very positive about the two part structure of our course. The design case study allows consolidation of principles, practice and techniques.

COURSE TEAM

Adrian Demaid
Ian Howard
Martin Goldthorpe
John Yates

The course team has been active in high quality research, training and consultancy for more than 20 years.

Copyright and all other intellectual property rights deriving from our work remain with us unless otherwise agreed by us in writing.

The course notes are for the personal use of those attending the course. They should not be circulated, reproduced or published in whole or in part without the permission of Fracture Training Associates in writing.

We shall be entitled to suspend or cancel the course with only the obligation to return payments made.

VENUE

The 2001 course will be held at the Hilton, Sheffield, a 4 star hotel set in a city centre quayside location. The course fee includes luncheon and coffee & tea each day and the course dinner in Part 2 on the evening of Tuesday, 15 May.

Accommodation is available at a concessionary rate. The hotel is very popular and delegates requiring accommodation at the Hilton, Sheffield are strongly advised to book early, by contacting the address shown below.

A list of alternative Sheffield hotels and guest houses is available from the FTA Office.

Hilton, Sheffield
North Quay, Victoria Quays
Furnival Road, Sheffield, S4 7YA
Tel: 0114 252 5500 Fax: 0114 252 5511
www.hilton.com/hotels/SZDSHHN/index.html

APPLICATIONS

The course fee, excluding hotel accommodation is £950 (VAT not applicable). Payment may be made by BACS or cheques payable to 'Fracture Training Associates'.

Applications should be made using the attached form and sent to the address printed on the reverse side. Please supply invoicing details if appropriate.

APPLICATION FORM

Course fee £950

I enclose a cheque payable to 'Fracture Training Associates'

Please invoice my organisation

Please tick applicable box

Name:	<input type="text"/>		
Address:	<input type="text"/>		
	<input type="text"/>	Post code:	<input type="text"/>
Tel:	<input type="text"/>	Fax:	<input type="text"/>
	e-mail:	<input type="text"/>	
Organisation/employer:	<input type="text"/>		
Appointment in organisation:	<input type="text"/>		

Course Administration

Rinda Haake
 FTA Office
 39 Blakeney Road
 Sheffield S10 1FD
 Tel/fax: 0114 266 7384
 www.fracturetraining.co.uk

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23-25 April and 14-16 May, 2001

TIMETABLE OF THE COURSE

		MORNING	AFTERNOON
PART I	Monday 23 April	Why Fracture Mechanics? <i>(case-study & video)</i> Crack tip mechanics <i>(lecture & video)</i>	Engineering with K <i>(lecture and tutorial)</i> Fracture toughness testing <i>(lecture, video, validation exercise and specimen examination)</i>
	Tuesday 24 April	Plasticity <i>(lecture and tutorial)</i>	Tough alloys <i>(lecture)</i> Failure assessment diagrams <i>(lecture and tutorial)</i>
	Wednesday 25 April	Deaerator failures <i>(group case-study)</i> Fatigue <i>(lecture and tutorial)</i>	Stress corrosion cracking <i>(lecture and tutorial)</i> Design of hydroelectric penstocks:- Project briefing
INTERMISSION AND PROJECT: Design of hydroelectric penstocks			
PART II	Monday 14 May	Project de-briefing Aircraft stabiliser failure <i>(group case-study)</i>	J & COD <i>(lecture and tutorial)</i> Resistance curves <i>(lecture and tutorial)</i>
	Tuesday 15 May*	Aircraft wing design <i>(group case-study)</i> R6 failure assessment <i>(lecture)</i>	R6 failure assessment <i>(tutorial)</i> Fracture mechanics testing <i>(lecture)</i> Numerical methods <i>(lecture)</i>
	Wednesday 16 May	Design assessment codes; BS 7910 <i>(lecture)</i> Cement ball mill:- Structural integrity assessment <i>(group case-study)</i>	

*Course dinner during the evening

Coat of Arms by kind permission of Sheffield City Council

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