



# Professional Development Courses

2021 Programme



# Introduction

Welcome to the Institution of Structural Engineers 2021 Continuing Professional Development (CPD) training programme.



**Louise Tingley**  
Head of Training and Events  
The Institution of Structural Engineers  
[training@istructe.org](mailto:training@istructe.org)

As we move into our fifth year of the CPD programme, we are delighted to offer over 60 courses.

Through partnerships with leading experts, elite academic institutions and trade and professional organisations, our programme presents a range of technical, professional and management courses designed to support at every stage of your career.

### Virtual learning

In 2020 we launched a brand new *Professional Review Interview online preparation course*. This offers an accessible and flexible way for engineers working towards professional membership to get ready for the PRI.

Our *Conceptual design for structural engineers: an introductory course* also continues to be popular. This series of two hour interactive online sessions takes place over four weeks. It is supported by individual study and provides a theoretical framework for understanding conceptual design in the context of structural engineering.

### New courses for 2021

In response to feedback, we are pleased to offer six new courses for 2021. Our new professional guidance courses cover key skills such as communication, presentation and management accounting. Our new technical courses are materials focussed, providing training on engineering with bamboo and advanced timber design.

### Leadership development programme

Our *Leadership development programme* is now in its third year. The course is offered in collaboration with the University of Bath School of Management. It runs over one calendar year with four days of teaching delivered by senior University of Bath faculty members. Participants also select a further three complimentary courses from our range of professional guidance courses, so that the programme is tailored to their unique professional development needs, and the needs of their employers.

### Enhanced measures for safer training

COVID-19 response measures at Institution HQ are led by the Government's policies and recommendations around physical distancing.

All staff at 47-58 Bastwick Street are fully trained on our revised health, safety and physical distancing policies. Where necessary courses may be delivered online.

### Expert trainers

Finally, we would like to take this opportunity to thank all the presenters of our courses. It is their expertise and dedication that sets our CPD programme apart.

## How to book

Book online—  
[www.istructe.org/cpd-2021](http://www.istructe.org/cpd-2021)

## Contact us

Email—  
[training@istructe.org](mailto:training@istructe.org)

Telephone—  
+44 (0)20 7235 4535

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# Professional guidance courses

# 1



# The leadership development programme for SMEs

in association with the University of Bath School of Management



Dr Suzanne Pollack



Dr Judy Greevy



Dr Caroline Waters OBE



Dr Bruno Oliveira

## Course dates:

**Day 1: 22 June | Day 2: 22 July | Day 3: 17 September | Day 4: 14 December**

## Aim

This programme prepares early to mid-career structural engineers to lead a small business.

## Learning outcomes

By the end of this programme, you should be able to:

- Evaluate your leadership strengths and weaknesses
- Effectively communicate with colleagues and clients
- Lead a team(s) and individuals within teams
- Assess the business environment, including relevant legislation
- Make strategic decisions
- Design a marketing strategy for your business
- Review commercial and financial constraints to business growth

## Intended for

Recently Chartered Structural Engineers or those preparing for chartership who work in SMEs. Also, those who are preparing to, or have recently, set up in business.

## Price

**£3,000 + VAT for members**  
(Early bird £2,700 + VAT)

**£4,000 + VAT standard**  
(Early bird £3,600 + VAT)

This includes the four core sessions and three further Professional Guidance CPD courses.

## Core sessions

Delivered by faculty members from the University of Bath

### Day 1: Managing self

- Introduction to the programme
- Psychometrics
- Self awareness, leadership behaviours and impact

### Day 2: Leadership

- What is leadership?
- Leadership and followership
- Delegating and building teams
- Influencing

### Day 3: Human resources

- Unlocking the power of your people
- Employee lifecycle – recruitment, selection and performance
- Succession and transition
- Employee engagement and retention
- Leadership and trust

### Day 4: Business strategy and marketing

- Building a business
- Setting strategy
- Marketing and finances

## Includes extra CPD courses

In addition to the core sessions, participants will choose three further training sessions from the Institution's Professional Guidance CPD courses, to suit the needs of their business.

## Tutors

### Days 1 and 2

**Dr Suzanne Pollack** is a professional coach, coaching supervisor, tutor and facilitator. She specialises in personal transformation, leadership and organisational change. Suzanne is currently an associate lecturer and coach at Executive Education, University of Bath.

### Day 3

**Dr Judy Greevy** is an associate lecturer at Executive Education, University of Bath. She works in the area of unconscious bias. She was previously the Director of Corporate HR and Sustainability for HMRC, Head of Diversity at NatWest Bank and Head of Diversity and Corporate Responsibility at Centrica. She has spent time in the Cabinet Office working for Baroness Jay and Baroness Jowell.

**Dr Caroline Waters OBE** is an associate lecturer at Executive Education, University of Bath. She is also Deputy Chair of the Equalities and Human Rights Commission. Previously, Caroline was Director, People & Policy at BT. Here she focused on realising BT's business ambitions through leading edge people strategies and promoting inclusivity and the empowerment of individuals.

### Day 4

**Dr Bruno Oliveira** is a senior teaching fellow and Director of Studies MSc in Entrepreneurship and Management at the University of Bath School of Management. Bruno's research interests include the entrepreneurial mindset, innovation, creativity and idea generation, entrepreneurship education, and strategy development.

Contributes to IPD Core Objective **3.1**

IN COLLABORATION



# Business development seminars

Master key business skills with the Institution's business development seminars. Themed around three essential subjects, they are delivered in partnership with The Business Growth Agency (an ActionCOACH company). The seminars are tutored by Parag Prasad, who has over a decade's worth of experience mentoring more than 80 CEOs in the construction and design industry.

Discounts are available when seminars are booked together.

## Business and strategic planning



Parag Prasad

**Course dates:**  
**10 March (14:00-18:00)**

### Aim

A business plan provides a living blueprint for running and growing your business. It ensures you are on course to meet goals, financial targets and operational milestones. This highly practical half day workshop teaches the skills you need in order to plan the medium and long term growth of your SME.

### Learning outcomes

By the end of the course, you should be able to:

- Write financial and marketing plans in a practical and time efficient manner
- Organise your goals into annual, quarterly and weekly objectives
- Understand the different components of a practical marketing plan
- Recognise the importance of a cashflow forecast and use it to make important numbers-based decisions
- Appreciate the identity shift required to prioritise these critical planning skills

### Intended for

Ambitious big vision SME practice owners and senior director level staff.

### Entry criteria

None.

### Price

**Member: £175 + VAT**  
(Early Booking £145 + VAT)

**Standard: £235 + VAT**  
(Early Booking £195 + VAT)

Contributes to IPD Core Objective **3.1, 3.4**

### Tutor

**Parag Prasad** has been an award winning business mentor to many of London's elite entrepreneurs including: ProperCorn, the 5th fastest growing company in Europe (Financial Times, 2017); Weston Williamson, one of the leading architecture firms behind TFL's £15 Billion Crossrail project, and Chilango, voted one of Britain's 27 most disruptive companies by the Telegraph.



After he coached senior partners in our practice as we grew from 50 to 100 staff he went on to coach the owners of more than 40 other renowned architecture practices in London. Put simply, Parag has become an essential resource for our profession.

**Chris Williamson**  
**Weston Williamson + Partners**

# Effective marketing for SMEs



Parag Prasad

**Course dates:**  
**5 May (14:00-18:00)**

## Aim

During this hands-on half day workshop you will learn a practical business growth system. This system has helped grow our clients' revenues by an average of 34% per year.

## Learning outcomes

By the end of the course, you should be able to:

- Track and measure return on investment for marketing activities conducted by your business
- Identify profitable leads and focus on winning and retaining them
- Understand the 5 most important numbers for your commercial success. These are number of qualified sales leads, conversion rate, average spend, client lifetime and profit margin. Learn the easiest, most commonly overlooked ways of improving each number

## Intended for

Ambitious big vision practice owners and senior director level staff.

## Entry criteria

None.

## Price

**Member: £175 + VAT**  
(Early Booking £145 + VAT)

**Standard: £235 + VAT**  
(Early Booking £195 + VAT)

Contributes to IPD Core Objective **3.1, 3.4**

# Pitching and sales skills



Parag Prasad

**Course dates:**  
**14 July (14:00-18:00)**

## Aim

This interactive half day coaching workshop is a unique opportunity to learn, discuss and receive personalised feedback on your sales skills. The experienced sales trainer will help you to convert prospects into paying clients more effectively.

## Learning outcomes

By the end of the course, you should be able to:

- Manage the fears and insecurities people commonly experience around sales
- Build trust and rapport with leads quickly and easily
- Analyse prospects' objections and respond to them, in order to move forward with a sale
- Build a clearly defined sales process
- Use proven sales methodologies: questioning & listening, sales scripts, emotion vs logic, DISC communication and styles

Contributes to IPD Core Objective **1.2**

## Tutor

**Parag Prasad** has been an award winning business mentor to many of London's elite entrepreneurs including: ProperCorn, the 5th fastest growing company in Europe (Financial Times, 2017); Weston Williamson, one of the leading architecture firms behind TFL's £15 Billion Crossrail project, and Chilango, voted one of Britain's 27 most disruptive companies by the Telegraph.

## Intended for

Ambitious big vision SME practice owners and senior director level staff.

## Entry criteria

None.

## Price

**Member: £175 + VAT**  
(Early Booking £145 + VAT)

**Standard: £235 + VAT**  
(Early Booking £195 + VAT)



# Business skills for engineers



Penny Taylor

IN-HOUSE AVAILABLE

**Course dates:**  
**26 - 27 October**

## Aim

This two day course gives an overview of all the essential business tools needed by graduate engineers to make the best progress in their early career.

## Learning outcomes

By the end of the course, you should be able to:

- Understand the basics of finance
- Know how to manage your time more effectively
- Understand project management principles
- Know how engineering fits into the organisation structure along with the key deliverables
- Know the responsibilities of a professional engineer

## Intended for

Anyone early in a career in the engineering industry heading towards Chartered or Incorporated status.

## Entry criteria

None.

## Price

**Member: £625 + VAT**  
(Early Booking £545 + VAT)

**Standard: £835 + VAT**  
(Early Booking £735 + VAT)

## Tutor

**Penny Taylor** CEng FIMechE FWES has combined an engineering career in the automotive industry and academia, with post-graduate qualifications in teaching, coaching and psychology. She combines the practical experience of running sizeable teams and projects with the underpinning theoretical knowledge. Her style of training is very interactive, adapting to the individual needs and action plans of the delegates. Penny has been delivering highly regarded courses for the IStructE since 2015.



Contributes to IPD Core Objective **1.2, 3.1, 3.4**

# Client appointments and terms of engagement: a legal toolkit



Rob Langley

IN-HOUSE AVAILABLE

Course date:  
**23 September**

## Aim

This course enables engineers to understand, evaluate and negotiate confidently the commercial or legal terms of proposed contracts with clients.

## Learning outcomes

By the end of the course, you should be able to:

- Recognise issues around misrepresentation, implied terms, contractual ambiguity and interpretation
- Appraise and negotiate exclusion and limitation clauses
- Assert skill and care, and resist strict liability and warranty obligations
- Identify the key issues recurring in client-led contract appointments
- Recognise the hidden risks of assignment, staff-naming, coordination, and third party design

## Intended for

Owners, directors, commercial partners, senior and middle management personnel, and engineers growing into a managerial role. The course will also be useful for junior engineers with a special interest in the commercial and contractual aspects of engineering practice.

## Entry criteria

Those attending should have some experience of reading, interpreting and applying commercial terms of appointment. The course will involve a significant element of reading and discussing actual clauses.

## Price

**Member: £345 + VAT**  
(Early Booking £295 + VAT)

**Standard: £465 + VAT**  
(Early Booking £395 + VAT)

Contributes to IPD Core Objective **3.2, 3.5**

## Tutor

**Rob Langley** has an MA (Oxon) in jurisprudence. He is a barrister, solicitor, Fellow of the Society of Advanced Legal Studies, practising adjudicator, arbitrator and mediator. Before specialising in training and consultancy, he was a law firm partner practising in engineering and construction law. During this time, he dealt with almost every form of contract. He has extensive and successful experience of defending claims against construction professionals.

IN COLLABORATION

**RL.**

ROB LANGLEY MEDIATION

# Communication skills for engineers



Penny Taylor

IN-HOUSE AVAILABLE

Course date:  
**6 – 7 September**

## Aim

This two day course teaches engineers communication skills, building on specific engineering scenarios and examples.

## Learning outcomes

By the end of the course, you should be able to:

- Understand the principles of effective communication
- Know the barriers to effective communication and how to overcome them
- Develop a greater understanding of your own and other people's communication styles
- Know how to influence others using the four influencing styles
- Learn techniques to lead and engage others in effective team meetings
- Know how to ask good questions and understand the importance of good listening skills

Contributes to IPD Core Objective **1.2, 3.1**

## Intended for

Anyone who wants to improve their communication skills. Ideal for anyone who needs to build better relationships with their colleagues and team.

## Entry criteria

None.

## Price

**Member: £625 + VAT**  
(Early Booking £545 + VAT)

**Standard: £835 + VAT**  
(Early Booking £735 + VAT)

## Tutor

**Penny Taylor** CEng FIMechE FWES has combined an engineering career in the automotive industry and academia, with post-graduate qualifications in teaching, coaching and psychology. She combines the practical experience of running sizeable teams and projects with the underpinning theoretical knowledge. Her style of training is very interactive, adapting to the individual needs and action plans of the delegates. Penny has been delivering highly regarded courses for the IStructE since 2015.



# Contract law for engineers



Rob Langley

**Course dates:**  
7 July

IN-HOUSE AVAILABLE

## Aim

This course covers the practical issues arising from commercial contracts.

## Learning outcomes

By the end of the course, you should be able to:

- Interpret lawyers' terminology
- Identify which legal issues are critical in a negotiation
- Recognise how to use the contract during the progress of a project or delivery of a service

Contributes to IPD Core Objective 3.2, 3.5

## Intended for

Middle and senior managers.

## Entry criteria

Participants would benefit from having at least some years' experience in practice.

## Price

**Member: £345 + VAT**  
(Early Booking £295 + VAT)

**Standard: £465 + VAT**  
(Early Booking £395 + VAT)

## Tutor

**Rob Langley** has an MA (Oxon) in jurisprudence. He is a barrister, solicitor, Fellow of the Society of Advanced Legal Studies, practising adjudicator, arbitrator and mediator. Before specialising in training and consultancy, he was a law firm partner practising in engineering and construction law. During this time, he dealt with almost every form of contract. He has extensive and successful experience of defending claims against construction professionals.



Rob was very personable and obviously extremely knowledgeable. He gave lots of examples with construction industry specifics which was really helpful.

2019 course attendee

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RL.

ROB LANGLEY MEDIATION





# Dealing with domestic clients



Rob Langley

IN-HOUSE AVAILABLE

**Course date:**  
2 March (online) | 30 September 13:00 – 17:00

## Aim

This half day course assists engineers working in the domestic sector for householders or small businesses.

## Learning outcomes

By the end of the course, you should be able to:

- Agree and record clear, enforceable agreements with non-professional clients with no technical background and limited experience
- Recognise the 'consumer protection' background
- Recognise and avoid misunderstandings around fees and variations, delays, and your own and the contractor's responsibility
- Respond to complaints correctly
- Communicate effectively and get paid more easily

## Intended for

Owners, directors, managers and employees working in small practices or as sole practitioners, particularly for the domestic sector and for non-commercial or non-professional clients.

## Entry criteria

None.

## Price

**Member: £175 + VAT**  
(Early Booking £145 + VAT)

**Standard: £235 + VAT**  
(Early Booking £195 + VAT)

Contributes to IPD Core Objective **1.1, 1.2, 3.5**

## Tutor

**Rob Langley** has an MA (Oxon) in jurisprudence. He is a barrister, solicitor, Fellow of the Society of Advanced Legal Studies, practising adjudicator, arbitrator and mediator. Before specialising in training and consultancy, he was a law firm partner practising in engineering and construction law. During this time, he dealt with almost every form of contract. He has extensive and successful experience of defending claims against construction professionals.



Brilliant course, really well worth the time.

2019 course attendee

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ROB LANGLEY MEDIATION

The Institution of  
**StructuralEngineers**

THE  
ACADEMY  
OF  
EXPERTS

# Become an IStructE Expert Witness



## Promote and demonstrate your experience as an Expert Witness

Unlike other registers, the IStructE Expert Witness register includes details of your structural engineering specialisms

Achieve an internationally recognised professional status as an accredited Expert

Join today:  
[www.istructe.org/expert-witness-register](http://www.istructe.org/expert-witness-register)

# Expert witness: an introduction

**Course date:**  
**14 – 15 June**

## Aim

The two-day course is a comprehensive introduction to the roles and responsibilities of an Expert. The practical training also concentrates on the Expert's Report and preparation for going into court.

## Learning outcomes

By the end of the course you should understand:

- What is required to perform as an Expert
- Terms of Engagement
- What the Expert needs to know and do prior to writing the Report
- Witness Statements
- Fact Finding, early evaluation and pre-trial advice
- Codes of Practice for Experts
- The Meeting of Experts - procedures and problems
- How to get paid

Contributes to IPD Core Objective **1.2, 3.2**

## Intended for

This course has been designed for those wishing to become Experts and is also a valuable refresher for the experienced Expert.

## Entry criteria

None.

## Price

**Member: £495 + VAT**

**Standard: £665 + VAT**

## Tutor

**The Academy of Experts** is the professional society and accrediting body for expert witnesses of all disciplines. It is independently run by experts for experts and those using them. The training is conducted by a team of experienced tutors. Although their disciplines are all very different, they all have practical experience of working as Expert Witnesses and Mediators or instructing them.

IN PARTNERSHIP WITH



# Expert witness: going into court

**Course date:**  
**4 November**

## Aim

This course is designed to give you knowledge and experience of being in court. You will be cross-examined by a practising barrister in a protected environment to improve your technique, so can be confident if you are called to give evidence.

## Learning outcomes

By the end of the course you should understand:

- How and when to prepare for court
- How to introduce yourself and your expertise
- How to give evidence
- Lawyers' techniques for cross-examination and how to handle them

Contributes to IPD Core Objective **1.2, 3.2**

## Intended for

Suitable as both an introduction to the art of success and survival in court and as a refresher for those with experience.

## Entry criteria

None.

## Price

**Member: £295 + VAT**

**Standard: £375 + VAT**

## Tutor

**The Academy of Experts** is the professional society and accrediting body for expert witnesses of all disciplines. It is independently run by experts for experts and those using them. The training is conducted by a team of experienced tutors. Although their disciplines are all very different, they all have practical experience of working as Expert Witnesses and Mediators or instructing them.

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# Financial fundamentals



Penny Taylor

**Course date:**  
**19 October**

**IN-HOUSE AVAILABLE**

## Aim

This course provides an overview of accounting principles and an explanation of accounting terminology. It also covers how three key financial documents are produced.

## Learning outcomes

By the end of the course, you should be able to:

- Recognise how the three key financial documents (cash flow forecast, profit and loss account, and balance sheet) are constructed
- Explain some key financial ratios that inform the health of a business
- Interpret financial data to set forward plans
- Use key financial terminology
- Identify what financial data is available in the public domain
- Work confidently alongside your financial colleagues

Contributes to IPD Core Objective **3.4**

## Intended for

Anyone who must interpret or produce financial figures in their role.

## Entry criteria

None.

## Price

**Member: £345 + VAT**  
(Early Booking £295 + VAT)

**Standard: £465 + VAT**  
(Early Booking £395 + VAT)

## Tutor

**Penny Taylor** has combined an engineering career in the automotive industry and academia with postgraduate qualifications in teaching, coaching and psychology. She has been teaching Finance and Management to engineers for over 10 years, based on practical lessons learned during her engineering career.

# Management accounting for SMEs



Penny Taylor

**Course date:**  
**9 March (online)**

**IN-HOUSE AVAILABLE**

## Aim

This course addresses issues that affect and worry business owners. Practical advice is delivered in a way that delegates can relate to. Issues specific to small businesses will be covered including: concerns over management of cash and management accounting for strategic decision-making.

## Learning outcomes

By the end of the course, you should be able to:

- Increase prices and profits
- Manage cash flow properly
- Eliminate what you are offering for free
- Identify financial key performance indicators (KPIs) that will make a big difference to your business
- Create plans and forecasts which enable better control of your business
- Use budgets to benchmark future years' performance of the business

Contributes to IPD Core Objective **3.4**

## Intended for

Engineers in the roles of: Owner/Directors, Managing Directors, Senior Partners and Directors or other roles where they have equity in business.

## Entry criteria

None.

## Price

**Standard: £465 + VAT**  
(Early Booking £395 + VAT)

**Member: £345 + VAT**  
(Early Booking £295 + VAT)

## Tutors

### Penny Taylor

Penny has combined an engineering career in the automotive industry and academia with postgraduate qualifications in teaching, coaching and psychology. She has been teaching Finance and Management to engineers for over 10 years, based on practical lessons learned during her engineering career.

### Julia Leask

Julia is a Fellow of the Chartered Institute of Management Accountants (Member in Practice) and Chartered Global Management Accountant. She won a 'Woman Who Achieves' award in 2018 and has over 25 years' experience of financial troubleshooting and of being a Company Secretary / Financial Director with extensive experience of training in small businesses.



# Managing engineering projects



David Atkinson

**Course dates:**  
**29-30 June**

## Aim

This two day course addresses the challenges of managing projects in an engineering context. It includes practical project management tools and techniques, with an emphasis on technical and commercial aspects.

## Learning outcomes

By the end of the course, you should be able to:

- Deploy a structured framework for projects
- Use a range of practical tools and techniques to help scope, plan and deliver projects
- Differentiate the roles and responsibilities in a project environment
- Manage project risks
- Monitor and communicate project status
- Use the language of project management
- Apply project management techniques in an engineering context

Contributes to IPD Core Objective **3.1, 3.4**

## Intended for

Existing or aspiring project managers who wish to improve their ability to achieve their project goals by acquiring best practice tools and techniques.

## Entry criteria

Experience of working in a project environment would be helpful.

## Price

**Member: £625 + VAT**  
(Early Booking £545 + VAT)

**Standard: £835 + VAT**  
(Early Booking £735 + VAT)

## Tutor

**David Atkinson** has over 30 years' management experience, including 18 years in a consultancy, training and coaching role. He has successfully worked with many leading organisations in a range of industries. David is a Fellow of the Association for Project Management.

# Moving into engineering management



Penny Taylor

**Course dates:**  
**1-2 March (online)**

## Aim

This two day course gives first time managers a toolbox of techniques to use for managing engineers and other technical staff.

## Learning outcomes

By the end of the course, you should be able to:

- Manage effectively
- Build and develop an effective team
- Delegate appropriately and effectively
- Set, monitor and achieve SMART goals for your team
- Use performance management to get the best out of everyone

Contributes to IPD Core Objective **3.1**

## Intended for

Anyone who is about to, or has recently, taken up responsibility for managing people for the first time.

## Entry criteria

None.

## Price

**Member: £625 + VAT**  
(Early Booking £545 + VAT)

**Standard: £835 + VAT**  
(Early Booking £735 + VAT)

IN-HOUSE AVAILABLE

## Tutor

**Penny Taylor** has combined an engineering career in the automotive industry and academia with postgraduate qualifications in teaching, coaching and psychology. She has been teaching Finance and Management to engineers for over 10 years, based on practical lessons learned during her engineering career.



Penny was an excellent and engaging speaker who really pushed for involvement and sold the points of her course very well.

**2018 course attendee**

IN COLLABORATION



# Presentation skills for engineers



Penny Taylor

**Course date:**  
**10 – 11 June**

**IN-HOUSE AVAILABLE**

## Aim

This highly practical two day course helps engineers develop presentation skills through practical exercises and feedback.

## Learning outcomes

By the end of the course, you should be able to:

- Understand the purpose and value of powerful presentations
- Be aware of what makes an effective presentation
- Utilise rapid preparation tips
- Control nerves when giving presentations
- Lead and engage effective team meetings
- Apply techniques for giving clear and concise answers to questions in public
- Use appropriate and engaging visual aids

## Intended for

Anyone who has to give presentations, whether internally, externally, technical, commercial or management.

## Entry criteria

None.

## Price

**Member: £625 + VAT**  
(Early Booking £545 + VAT)

**Standard: £835 + VAT**  
(Early Booking £735 + VAT)

## Tutor

**Penny Taylor** has combined an engineering career in the automotive industry and academia with postgraduate qualifications in teaching, coaching and psychology. She has been teaching Finance and Management to engineers for over 10 years, based on practical lessons learned during her engineering career.



Contributes to IPD Core Objective **1.2**



# Writing skills for engineers



Penny Taylor

**Course date:**  
**3 March (online) | 1 November**

**IN-HOUSE AVAILABLE**

## Aim

This course helps you improve the quality of your written reports and reduce the time you spend writing. It covers how to adapt your writing style for different documents and audiences. You will also learn some grammar best practice to help you write clearly and concisely.

## Tutor

**Penny Taylor** has combined an engineering career in the automotive industry and academia with postgraduate qualifications in teaching, coaching and psychology. She has been teaching Finance and Management to engineers for over 10 years, based on practical lessons learned during her engineering career.

## Learning outcomes

By the end of the course, you should be able to:

- Write in a direct and concise style
- Adapt your writing style to a range of audiences
- Write efficiently and not waste time
- Use digital tools for better writing
- Evaluate where to put your effort to improve your writing

## Intended for

This course is relevant for anyone who has to communicate, whether through reports, articles, papers, proposals or just via email.

## Entry criteria

None. However, you will be asked to complete 30 minutes of preparatory work to bring with you on the day.

## Price

**Member: £345 + VAT**  
(Early Booking £295 + VAT)

**Standard: £465 + VAT**  
(Early Booking £395 + VAT)

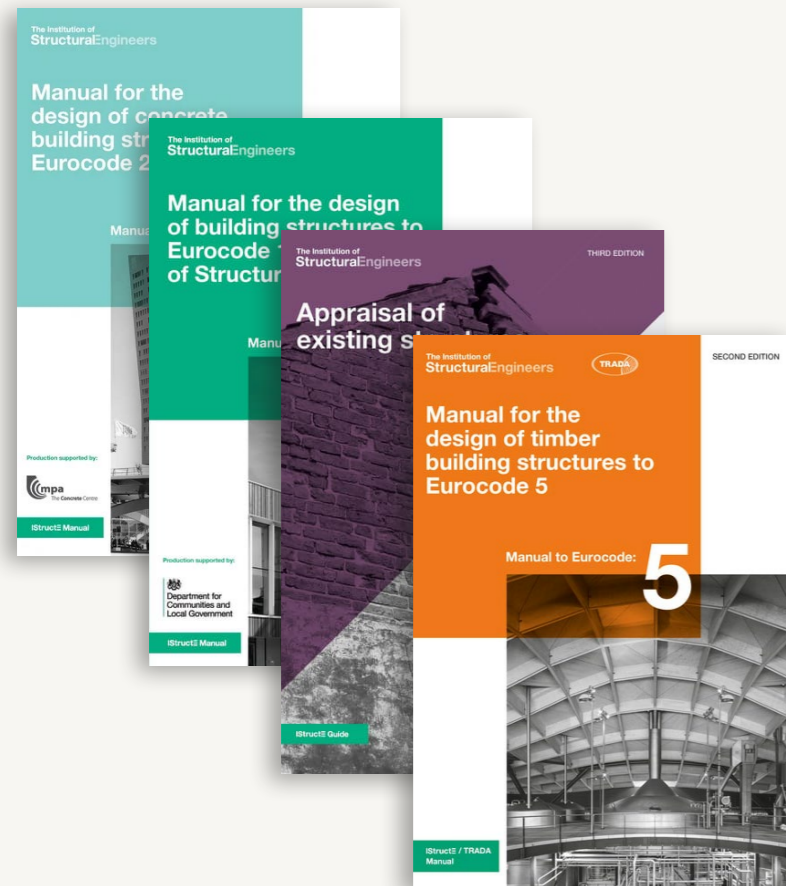
Contributes to IPD Core Objective **1.2**

# Technical courses

# 2



# 25% off manuals and guides when you book a CPD course



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## Conceptual design for structural engineers: an introduction (online)



Oliver Broadbent

### Course dates:

11, 18, 25 February, 4 March (10:30 - 12:30 GMT)

4, 11, 18, 25 May (10:30 - 12:30 BST)

3, 10, 17, 24 Nov (10:30 - 12:30 GMT)

This course is also delivered as a series of two hour interactive online sessions. The sessions take place over four weeks and are supported by individual study.

### Sessions

- Week 1 – Working with a brief
- Week 2 – Developing ideas
- Week 3 – Modelling and testing ideas
- Week 4 – Bringing it all together

### Price

**Member: £295 + VAT**  
(Early Booking £255 + VAT)

**Standard: £395 + VAT**  
(Early Booking £335 + VAT)

**25% discount on associated publications:**

*Conceptual design of buildings*  
See p.30 for details.

Contributes to IPD Core Objective 2.1

### Tutor

**Oliver Broadbent** is an expert facilitator and trainer in design thinking for the built environment. He is Director of the engineering education and training consultancy Constructivist Ltd. He also works with universities to develop innovative approaches to curriculum design and delivery. Oliver has co-authored a series of good practice teaching guides for the Royal Academy of Engineering.

# Conceptual design for structural engineers: an introduction



Oliver Broadbent

**Course dates:**  
**6 July**

## Aim

This course provides a theoretical framework for understanding conceptual design in the context of structural engineering. It will include how to interpret a client brief, strategies for generating ideas in response to a brief, and rapid, iterative modelling and testing of ideas.

## Learning outcomes

By the end of the course, you should be able to:

- Explain the design process as a series of discrete steps
- Describe the characteristics of a good design brief and use this knowledge to write your own brief
- Describe and use techniques for idea generation
- Describe and use techniques for modelling and testing your ideas

Contributes to IPD Core Objective **2.1**

## Intended for

Structural engineers who are preparing to take the Institution of Structural Engineers Chartered Membership Exam.

## Entry criteria

None.

## Price

**Member: £295 + VAT**  
(Early Booking £255 + VAT)

**Standard: £395 + VAT**  
(Early Booking £335 + VAT)

**25% discount on associated publications:**  
*Conceptual design of buildings*  
See p.30 for details.

## Tutor

**Oliver Broadbent** is an expert facilitator and trainer in design thinking for the built environment. He is Director of the engineering education and training consultancy Constructivist Ltd. He also works with universities to develop innovative approaches to curriculum design and delivery. Oliver has co-authored a series of good practice teaching guides for the Royal Academy of Engineering.



The course provided an excellent and broad overview of conceptual design running with practical examples at every step of the way. Oliver engaged with all the students to ensure everyone had the opportunity to participate and contribute to the session.

**2018 course attendee**

# Conceptual design for structural engineers: advanced



Oliver Broadbent

**Course dates:**  
**2-3 December**

## Aim

This two day course helps experienced practitioners take their conceptual design skills to the next level. There will be a focus on understanding client needs, generating and iteratively developing ideas, effective decision making in design, and managing design teams.

## Learning outcomes

By the end of the course, you should be able to:

- Characterise the design process and describe how each stage requires different skills and attitudes
- Describe how conceptual design differs from detailed design and the consequences of these differences for how design is carried out
- Use techniques for understanding the underlying need behind a client brief
- Describe a model for idea generation and use this to lead a design team through the creative process
- Understand the relationship between modelling, testing and the design brief, and use this to establish an effective iterative design process

Contributes to IPD Core Objective **2.1**

- Understand the nature of subjective decision-making in design
- Describe strategies for building an effective design team

## Intended for

Structural engineers with at least five years' experience in practice and experience of managing other people as part of the design process.

## Entry criteria

None.

## Price

**Member: £475 + VAT**  
(Early Booking £415 + VAT)

**Standard: £635 + VAT**  
(Early Booking £545 + VAT)

**25% discount on associated publications:**  
*Conceptual design of buildings*  
See p.30 for details.

## Tutor

**Oliver Broadbent** is an expert facilitator and trainer in design thinking for the built environment. He is Director of the engineering education and training consultancy Constructivist Ltd. He also works with universities to develop innovative approaches to curriculum design and delivery. Oliver has co-authored a series of good practice teaching guides for the Royal Academy of Engineering.



# Conceptual design of bridges



Ian Firth

**Course dates:**  
**10-11 May**

## Aim

This course introduces engineers to the conceptual design process for bridges. It covers two key areas; selecting a structural form to suit the constraints of a site and arranging materials and components to meet the demands of the structure in an elegant and logical way.

## Learning outcomes

By the end of the course, you should be able to:

- Identify how the conceptual design of a bridge is informed by physical and environmental site constraints, social, cultural and historical factors
- Recognise the value of and use sources of inspiration
- Read a bridge design
- Explain basic structural systems typically used in bridges
- Select appropriate structural forms and materials
- Form, develop and communicate a concept

## Intended for

Engineers with little or no experience of conceptual design of bridges, those wishing to explore conceptual design of bridges from an architectural perspective, and experienced engineers wishing to refresh their conceptual design thinking.

## Price

**Member: £475 + VAT**  
(Early Booking £415 + VAT)

**Standard: £635 + VAT**  
(Early Booking £545 + VAT)

## Tutor

**Ian Firth** is a Past President of the Institution of Structural Engineers. He is a world-leading expert in bridge design and construction. During his career, Ian has been involved with the assessment and strengthening of several famous bridges. He is also responsible for the design of many award winning bridges such as the Swansea Sail Bridge, the Third Way bridge in Taunton and the Destructor Bridge in Bath.



An exhilarating workshop. Bits of technical bridge engineering but mostly good bites of why we do what we do and for whom and this is where good architecture blends in. I strongly recommend this course to anybody who wishes to see design concepts from a vantage point.

**2019 course attendee**





# Deep basements

Course date:  
**15 September**

## Aim

This course gives guidance on the key considerations when planning the construction of deep basements. It covers using both embedded wall bottom-up and top-down construction in accordance with Eurocodes 2 and 7.

## Learning outcomes

By the end of the course, you should be able to:

- Apply performance criteria to construction techniques and structural form considering the intended use
- Design appropriate waterproofing to achieve the desired environment
- Propose structural form and sequence to match the geotechnical conditions
- Plan construction methodology and sequence, including estimating schedule and costs
- Assess the logistics and space requirements of different equipment considering the construction methodology and ground conditions
- Design deep basements taking into account of all the above

Contributes to IPD Core Objective **2.1, 2.2, 2.5**

## Intended for

Civil or structural engineers (from contractors to consultants) with some understanding of the design process, or those who wish to develop their design knowledge and experience, in both the technical and practical aspects of deep basement design and construction.

## Entry criteria

Graduate civil and structural engineers, practising design and construction engineers, and other professionals interested in the design and construction of deep basements.

## Price

**Member: £295 + VAT**  
(Early Booking £255 + VAT)

**Standard: £395 + VAT**  
(Early Booking £335 + VAT)

## Tutors

**Peter Cracknell** is a Technical Director in Mott MacDonald's Foundations and Geotechnics Department in Croydon. He has over 40 years' experience of design and construction support, including deep box construction, with emphasis on buildability and holistic design.

**Christina Mavrommati** is a Principal Geotechnical Engineer at Mott MacDonald. She has over 17 years' experience in the design of large scale civil engineering works in Greece and the UK, such as metro stations, embankments and cuttings, foundations and remedial stabilisation works for large scale landslides.

**Neil Henderson** began his career as a civil engineer building roads and bridges across the country. When he joined Laing O'Rourke in 1995, Neil moved into basement and concrete frame construction. During this period, he worked on a number of high profile projects, including the top-down construction for One Hyde Park. He is currently working on London's Northern Line extension.

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# Demolition and structural refurbishment

**Course dates:**  
**10 March (online)**

## Aim

This course provides guidance on specific aspects of demolition and refurbishment. It has a particular focus on comparing existing constructions with new constructions.

## Learning outcomes

By the end of the course, you should be able to:

- Compare the differences between refurbishment and new construction
- Demonstrate an understanding of traditional construction
- Evaluate practical options for the demolition of major buildings
- Identify specific structural hazards that may occur in demolition
- Understand temporary structural support methods

Contributes to IPD Core Objective **2.5**

## Intended for

Design engineers with a reasonable level of experience. However, it will be of use to all concerned with demolition and refurbishment, including contractors, client managers and advisors.

## Entry criteria

The course is designed to cover specific engineering topics, and therefore will be of maximum benefit to those with a reasonable level of experience in construction. However, there are no minimum requirements for attending or benefitting from this course.

## Price

**Member: £295 + VAT**  
(Early Booking £255 + VAT)

**Standard: £395 + VAT**  
(Early Booking £335 + VAT)

## Tutor

**Charles Treasure** has over 40 years' experience in structural and geotechnical design for temporary and permanent works, and in management and coordination of the design process. He is an Associate in Wentworth House Partnership. Charles presented a paper on designing cost-effective temporary works at the 2009 national conference on deep basements and underground structures.

# Design and analysis of tall buildings

**Course dates:**  
**14 June | 13 September**

## Aim

This popular course includes guidance on the design, stability, safety and performance of tall buildings.

## Learning outcomes

By the end of the course, you should be able to:

- Recognise the performance of tall buildings
- Design effective lateral stability systems for tall buildings
- Demonstrate how to design a tall building under blast or impact loading
- Describe how to design tall buildings for fire safety
- Use different software to analyse tall buildings
- Apply the pertinent design codes

Contributes to IPD Core Objective **2.1, 2.2**

## Intended for

Structural engineers or students who work in the tall building design sectors.

## Entry criteria

Practising structural engineers or postgraduate students.

Recommended reading: Feng, F (2018). *Structural Dynamic. Design and Analysis of Tall and Complex Structures*. Oxford: Elsevier.

## Price

**Member: £295 + VAT**  
(Early Booking £255 + VAT)

**Standard: £395 + VAT**  
(Early Booking £335 + VAT)

**25% discount on associated publications:**

*Safety in tall buildings and other buildings with large occupancy.*  
See p.30 for details.



Dr Feng Fu

## Tutor

**Dr Feng Fu** is a Fellow of IStructE, ICE and ASCE. He is Associate Editor, ASCE Journal of Performance of Constructed Facilities; and an editorial board member for proceedings of ICE's Structures and Buildings and the International Journal of Advances in Computational Design. He has worked for several world leading consultancy companies and on extensive prestigious construction projects worldwide, such as the tallest building in Western Europe, the Shard. He has published more than 100 peer reviewed technical papers and 4 textbooks.



This had given me a solid foundation of knowledge from which to refer to in designing tall buildings in my future practice.

**2020 course attendee**

# Design of steel bridges



Dr Ben Lau



Chris Hendy

**Course dates:**  
**9-10 November**

## Aim

This two day course covers the design and analysis of steel bridges to Eurocodes. It uses worked examples, including steel bridge detailing and fabrication.

## Learning outcomes

By the end of the course, you should be able to:

- Select a suitable type of steel bridge
- Apply the bridge loading
- Carry out bridge idealisation and analysis
- Design key structural elements of steel bridges
- Prepare the steel bridge detailing and fabrication

## Intended for

Those relatively new to bridge engineering, whether experienced structural engineers wanting to switch discipline, early career bridge engineers, or those just wanting to refresh their knowledge of bridge design.

## Entry Criteria

Some design experience in steel structures to Eurocodes.

## Price

**Member: £475 + VAT**  
(Early Booking £415 + VAT)

**Standard: £635 + VAT**  
(Early Booking £545 + VAT)

**25% discount on associated publications:**

*Manual for the design of steelwork building structures to Eurocode 3.*  
See p.30 for details.

Contributes to IPD Core Objective **2.1, 2.2**

# Designing for blast resilience and resistance



Bob Sheldon



Piroozan Aminossehe

**Course date:**  
**8 June**

## Aim

This course demonstrates how significant blast resilience and resistance is possible with careful design, planning and detailing of a structure.

## Learning outcomes

By the end of the course, you should be able to:

- Describe structural responses to blast loading with reference to 'equivalent single degree of freedom' analysis
- Use pressure impulse diagrams for approximate response assessment
- Employ principles and guidelines for protective design against the effects of blast
- Design reinforced concrete structures subject to blast loading
- Apply American Society of Civil Engineers' technical guidelines to practical structural design of blast-resistant facilities

Contributes to IPD Core Objective **2.1, 2.2**

## Intended for

Practising engineers who wish to gain an insight into current methods of structural analysis and design against blast loads.

## Entry criteria

No specific knowledge for attending this course is required, although some knowledge about elementary structural dynamics is preferable.

## Price

**Member: £295 + VAT**  
(Early Booking £255 + VAT)

**Standard: £395 + VAT**  
(Early Booking £335 + VAT)

## Tutors

**Bob Sheldon** was formerly senior lecturer in protective structures at the Centre for Defence Engineering at Cranfield University.

**Piroozan Aminossehe** is an independent consultant.



# Eurocode 2: design of concrete structures

**Course date:**  
**1 December**

## Aim

This course introduces participants to the design of concrete structures to Eurocode 2. As well as the basics of materials, cover and fire, it also considers flexure, shear, deflection and column design.

## Learning outcomes

By the end of the course, you should be able to:

- Describe Eurocode 2
- Design procedures for beams, slabs and columns
- Determine cover for a typical element
- Design elements for bending, deflection, shear and axial loads

Contributes to IPD Core Objective **2.2, 2.3**

## Intended for

Practising structural engineers who are looking to start designing to Eurocode 2.

## Entry criteria

A basic understanding of the Eurocode system is assumed, together with a knowledge of the design of concrete.

## Price

**Standard: £295 + VAT**  
(Early Booking £255 + VAT)

### 25% discount on associated publications:

*Manual for the design of concrete building structures to Eurocode 2* and *Standard method of detailing structural concrete: a manual for best practice 3rd ed.*  
**See p.30 for details.**

## Tutor

**Paul Gregory** is a structural engineer for The Concrete Centre, providing technical advice and support to designers. He has over 40 years' experience in building structures with several consulting engineers. In addition to his industrial experience, Paul was a structural design lecturer for 17 years at the University of Bradford.

# Eurocode 3: structural steelwork design

**Course date:**  
**27 May**

## Aim

This course examines changes between BS 5950 and Eurocode 3. The emphasis is on buildings and the provision of general rules for buildings of EN 1993-1-1 and design of joints to EN 1993-1-8.

## Learning outcomes

By the end of the course, you should be able to:

- Design basic steel structures to Eurocode 3
- Navigate effectively around different parts of Eurocode 3 necessary for the design of steel structures
- Identify the practicalities of design using Eurocode 3

Contributes to IPD Core Objective **2.2, 2.3**

## Intended for

Civil and structural engineers who design, or supervise the design, of steel buildings or structures.

## Entry criteria

Graduate engineers and designers with some design experience in steel structures.

## Price

**Standard: £295 + VAT**  
(Early Booking £255 + VAT)

### 25% discount on associated publications:

*Manual for the design of steelwork building structures to Eurocode 3.*  
**See p.30 for details.**



Professor Dennis Lam

**IN-HOUSE AVAILABLE**

## Tutor

**Professor Dennis Lam** is a Chartered Civil and Structural Engineer and Chair in Structural Engineering at the University of Bradford. He has extensive practical experience in structural design and analysis, with particular expertise in steel and composite structures. He is the leading author of *Structural Steelwork: Design to Limit State Theory* and has published widely on structural design and analysis.

# Eurocode 4: composite design



Professor Dennis Lam

Course date:  
**8 September**

**IN-HOUSE AVAILABLE**

## Aim

This course supports the practising designer with the transition to Eurocode-based design for composite building structures. It will enable you to understand the essential requirements of this code for your structural design, how the code operates and how it can support you.

## Learning outcomes

By the end of the course, you should be able to:

- Design basic steel concrete composite structures to Eurocode 4
- Appreciate the Eurocode suite and its impact on UK design practice

Contributes to IPD Core Objective **2.2, 2.3**

## Intended for

Civil and structural engineers who design, or supervise the design, of composite building structures.

## Entry criteria

Graduate engineers and designers with some design experience in steel structures.

## Price

**Standard: £295 + VAT**  
(Early Booking £255 + VAT)

## Tutor

**Professor Dennis Lam** is a Chartered Civil and Structural Engineer and Chair in Structural Engineering at the University of Bradford. He has extensive practical experience in structural design and analysis, with particular expertise in steel and composite structures. He is the leading author of *Structural Steelwork: Design to Limit State Theory* and has published widely on structural design and analysis.

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# Eurocode 5: connections and advanced topics in timber design

Course date:  
29 June

IN-HOUSE AVAILABLE

## Aim

This course introduces advanced topics in timber design to Eurocode 5, including fasteners and connectors.

## Learning outcomes

By the end of the course, you should be able to:

- Design basic and more intricate timber connections to Eurocode 5
- Appreciate the fracture mechanics aspects of wood behaviour and scientific research behind certain clauses of Eurocode 5
- Appreciate the use of dowel type fasteners and contemporary connectors for practical applications
- Use the connections chapter of Eurocode 5 for practical design situations

Contributes to IPD Core Objective 2.2, 2.3

## Intended for

Graduate to very senior and managing engineers.

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## Entry criteria

Familiarity with timber engineering may be beneficial. Participation at the Eurocode 5: The Essentials of Timber Design course may also be advantageous.

## Price

**Member: £295 + VAT**  
(Early Booking £255 + VAT)

**Standard: £395 + VAT**  
(Early Booking £335 + VAT)

**Discount**  
Book both Eurocode 5 courses together and get a discount. Price for both days:

**Member: £475 + VAT**  
(Early Booking £415 + VAT)

**Standard: £635 + VAT**  
(Early Booking £545 + VAT)

**25% discount on associated publications:**  
*Manual for the design of timber building structures to Eurocode 5.*  
See p.30 for details.

## Tutor

**Dr Keerthi Ranasinghe** is a Senior Lecturer at the University of Wales Trinity Saint David, a member of the TRADA Technical Advisory Panel, and an independent timber engineering consultant. Keerthi is the author of several TRADA publications, including the Span Tables to Eurocode 5, and the Institution's *Manual for the design of timber building structures to Eurocode 5 2nd ed.*



This course was very useful specifically in understanding the essentials behind timber connection design. We were privileged to have been taught by one of the leading authors of the revised Eurocode 5.

2019 course attendees

# Eurocode 5: the essentials of timber design

Course date:  
28 June

IN-HOUSE AVAILABLE

## Aim

This course offers an introduction to base and loadings Eurocodes and timber design to Eurocode 5.

## Learning outcomes

By the end of the course, you should be able to:

- Recognise the basics of designing timber elements to Eurocode 5
- Compare and contrast the design methods of BS 5268 and Eurocode 5
- Assess the intricacies involved in designing timber elements to Eurocode 5
- Appraise the wood technology and scientific research behind certain clauses of Eurocode 5
- Use the peripheral standards and further commercial information to design with Eurocode 5
- Use Eurocode 5 for practical design situations

Contributes to IPD Core Objective 2.1, 2.2, 2.3

## Intended for

Graduate to very senior and managing engineers.

## Entry criteria

Familiarity with timber engineering may be beneficial, but is not essential.

## Price

**Member: £295 + VAT**  
(Early Booking £255 + VAT)

**Standard: £395 + VAT**  
(Early Booking £335 + VAT)

**Discount**  
Book both Eurocode 5 courses together and get a discount. Price for both days:

**Member: £475 + VAT**  
(Early Booking £415 + VAT)

**Standard: £635 + VAT**  
(Early Booking £545 + VAT)

**25% discount on associated publications:**  
*Manual for the design of timber building structures to Eurocode 5.*  
See p.30 for details.

## Tutor

**Dr Keerthi Ranasinghe** is a Senior Lecturer at the University of Wales Trinity Saint David, a member of the TRADA Technical Advisory Panel, and an independent timber engineering consultant. Keerthi is the author of several TRADA publications, including the Span Tables to Eurocode 5, and the Institution's *Manual for the design of timber building structures to Eurocode 5 2nd ed.*



Dr Ranasinghe was excellent. I felt very lucky to have him presenting the course... he was so enthusiastic, so human and his understanding so complete that I found no part of the day boring or hard work. I'm very grateful to Dr Ranasinghe for his time and his approach to teaching.

2018 course attendee

# Eurocode 6: masonry design

**Course dates:**  
**13 May**

## Aim

This course provides participants with detailed knowledge of masonry design to Eurocode 6 standards and the National Annexes for Eurocodes.

## Learning outcomes

By the end of the course, you should be able to:

- Explain design using masonry to Eurocode 6
- Design for vertical load
- Design for lateral load
- Identify and locate relevant information to support your future designs

Contributes to IPD Core Objective **2.2, 2.3**

## Intended for

Structural engineers interested in the design of masonry to Eurocode 6.

## Entry criteria

A civil or structural engineering degree or an equivalent qualification.

## Price

**Member: £295 + VAT**  
(Early Booking £255 + VAT)

**Standard: £395 + VAT**  
(Early Booking £335 + VAT)

### 25% discount on associated publications:

*Manual for the design of plain masonry in building structures to Eurocode 6.*  
See p.30 for details.

IN-HOUSE AVAILABLE

## Tutor

**Professor John Roberts** is an independent consultant and the Principal of the Technical Innovation Consultancy, which specialises in supporting innovation in construction. He currently chairs the UK panel for Eurocode 6 and is the UK project team member for the revision of the Eurocode. He is President of the International Masonry Society and Chairman of the International Advisory Panel for Masonry International.

# Eurocode 7: foundation design for small practitioners

**Course dates:**  
**22 October**

## Aim

This course covers aspects of the geotechnical and structural design of spread and piled foundations. It is tailored for engineers working in small practices. The content is compliant with Eurocodes 2 and 7, with opportunities for comparisons with relevant British Standards.

## Learning outcomes

By the end of the course, you should be able to:

- Develop suitable foundations using ground investigation material
- Prepare scheme designs for spread and piled foundations
- Analyse the practical problems involved in the construction of foundations

Contributes to IPD Core Objective **2.1, 2.2**

## Intended for

Graduate engineers who wish to develop practical design skills, and mid-career engineers, particularly those working in small practices, who are designing foundations and making the transition to Eurocodes.

## Entry criteria

Participants should be familiar with limit state design methods.

## Price

**Standard: £295 + VAT**  
(Early Booking £255 + VAT)

### 25% discount on associated publications:

*Manual for the geotechnical design of structures to Eurocode 7.*  
See p.30 for details.



Bob Benton

## Tutor

**Bob Benton** is a Chartered Structural Engineer with experience of designing building and civil engineering structures and motorway projects. He is a visiting lecturer at the University of the West of England, where he teaches undergraduate, postgraduate and mid-career engineers. He has also authored educational material for The British Standards Institution.



# Eurocode 8: an introduction to seismic design of buildings



Professor Costas  
Georgopoulos

**Course date:**  
**18 February (online)**

## Aim

This course delivers key advice and guidance on seismic design of structures to Eurocode 8 as well as the application of the Eurocode. Emphasis is placed on reinforced concrete buildings although the concepts are widely applicable.

## Learning outcomes

By the end of the course, you should be able to

- Describe E/Q damages and identify their causes
- Apply principles of conceptual design of E/Q-resistant structures in practice
- Appreciate ground motions and geotechnical aspects in structural seismic design
- Apply performance requirements and compliance criteria for various types of buildings
- Select models and methods of analysis of buildings for seismic actions
- Carry out equivalent static analysis of simple buildings
- Carry out safety verifications
- Carry out simple structural element design and detail

Contributes to IPD Core Objective **2.1, 2.2**

## Intended for

Structural and civil practising engineers seeking guidance on the application of Eurocode 8, graduates undertaking their Initial Professional Development, and students, researchers and academics with limited seismic design experience.

## Entry criteria

No previous experience in dynamics is required.

## Price

**Member: £295 + VAT**  
(Early Booking £255 + VAT)

**Standard: £395 + VAT**  
(Early Booking £335 + VAT)

**25% discount on associated publications:**

*Manual for the seismic design of steel and concrete buildings to Eurocode 8.*  
See p.30 for details.

## Tutor

**Professor Costas Georgopoulos** CEng FICE FStructE is Chair of Structural Engineering Practice at Kingston University London. He is also a practising engineer with many years' unique multi-sector experience in seismic design such as conventional buildings in Greece and state-of-the-art structures in the UK (Trident Submarine Refitting Facility at Rosyth and Sizewell B Nuclear Power Station). Costas' continuously-enhanced expertise on EC8 includes consulting engineering worldwide, teaching PG programmes, supervising dissertations, authoring the IStructE Worked Examples to EC8 (in progress) and being a member of the BSI National Expert Committee for EC8.

# Eurocode 9: design of aluminium structures

**Course date:**  
**16 March (online)**

## Aim

The aim of this course is to help attendees use structural aluminium. It introduces basic considerations as well as giving guidance on using Eurocode 9. It includes design examples.

## Learning outcomes

By the end of the course, you should be able to:

- List the considerations necessary when deciding to design in structural aluminium rather than in steel
- Determine how to select the most appropriate aluminium alloys for a structural application
- Examine the pros and cons of different material forms and jointing methods
- Example design calculations will be given to enable attendees to apply the skills required to perform limit state calculations in accordance with the Eurocode
- Quality requirements for execution  
Contributes

Contributes to IPD Core Objective **2.2, 2.3**

## Intended for

The course is primarily intended for structural engineers who will use Eurocode 9 for the design of buildings, civil engineering and structural works including bridges in aluminium. The basic principles and content will also be useful for other engineers who will use aluminium in other applications.

## Entry criteria

Prior experience of design of steel or aluminium structures using British, European and other countries' design codes will be helpful to fully appreciate all the aspects of the design rules for aluminium.

## Price

**Member: £295 + VAT**  
(Early Booking £255 + VAT)

**Standard: £395 + VAT**  
(Early Booking £335 + VAT)

## Tutor

**Professor John W Bull** has many years of professional and academic experience in structural design and construction. John is a Professor and was Head of the Civil Engineering Departments at Brunel University and Northumbria University. He was and is a member of the BSI committee responsible for BS 8118 and for UK inputs to Eurocode 9, including preparation for the new updated Eurocode 9.

# Exam preparation course

**Course dates:**  
24-26 May | 6-8 December

## Aim

This three day course helps you to prepare for the Chartered Membership Exam. You will find out what is required and get a confidence boost.

## Learning outcomes

By the end of the course, you should be able to:

- Plan your own preparation for the exam
- Recognise what is required to pass each element of the exam
- Formulate distinct and viable solutions to exam questions
- Employ conceptual tools to develop efficient solutions to exam questions

## Intended for

Anyone who is preparing to sit The Institution of Structural Engineers Chartered Membership Exam and who intends to answer non-bridge questions.

## Entry criteria

None.

## Price

**Member: £635 + VAT**  
(Early Booking £555 + VAT)

Contributes to all IPD Core Objectives

## Tutors

**Paul Toplis** is a partner at Price & Myers consulting engineers with over 30 years' experience of designing buildings. He is personally involved in producing sketch drawings, calculations and specifications for projects – bringing 'hands on' experience to the course.

**Chris Smaller** is a Chartered Civil and Structural Engineer with over 30 years' experience, including the design of high profile buildings in all structural materials. Chris works in all sectors and is involved with new commercial, industrial and retail developments, refurbishments and conservation work.

**Victoria Edmondson** is a Chartered Structural Engineer with over 15 years' experience in the UK and abroad. She is passionate about coaching the next generation of structural engineers.

**Matt Goswell** has worked for a number of London-based structural consultants on projects such as the Oval cricket ground, KPMG Canary Wharf and The Shard. To broaden his horizons, Matt moved into the energy sector, predominately working as a lead engineer on onshore facilities across the world.

All the tutors are marking examiners for The Institution of Structural Engineers Chartered Membership Exam.

# Exam preparation day

**Course dates:**  
16 December

## Aim

This course helps participants prepare for The Institution of Structural Engineers Chartered Membership Exam, in accordance with the Institution's guidelines.

## Learning outcomes

By the end of the course, you should be able to:

- Describe the general principles and techniques to successfully complete the examination
- Demonstrate these principles by discussing real questions on bridge, steel building, concrete building and a 'general' building
- Judge the requirements of the exam and what the examiners expect to see

Contributes to all IPD Core Objectives

## Intended for

Anyone who is preparing to sit The Institution of Structural Engineers Chartered Membership Exam.

## Entry criteria

None.

## Price

**Member: £295 + VAT**  
(Early Booking £255 + VAT)

**Standard: £395 + VAT**  
(Early Booking £335 + VAT)

## Tutor

**Stephen Vary** has worked in Industry on Building and Process Plant Structures. He has also taught Structural Design at Universities in the UK and abroad.

Since 2002 he has taught on the CM course organised by the North Thames Regional Group and been the Administrator for the course since 2010.



A great start to my exam preparation.

2019 course attendee



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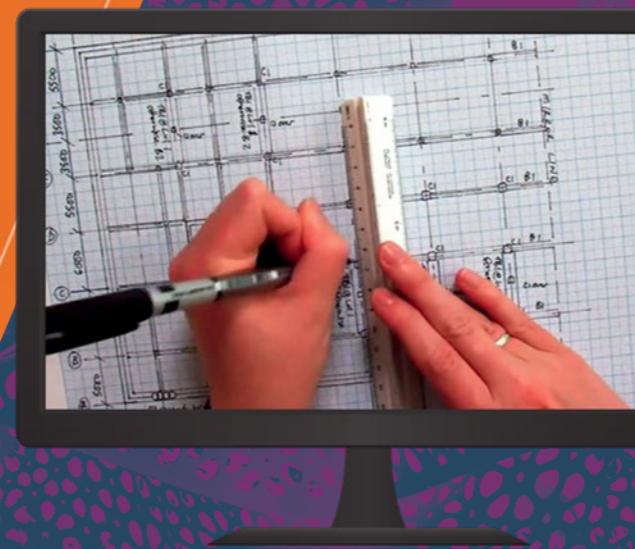
## Online exam preparation course

Whether you're planning to attend an exam preparation day or not, this online course can be used as supplementary learning and development. Prepare for your Chartered Membership Exam wherever you are in the world.

**You will learn to:**

- Plan your own preparation for the exam
- Recognise what is required to pass each module
- Create viable solutions to exam questions
- Use conceptual tools to develop answers
- Identify any gaps in your preparation

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[istructe.org/onlineexamprep](http://istructe.org/onlineexamprep)



## Historic timber structures: assessment and reuse

**Course date:**  
**1 February (online)**

### Aim

This course introduces timber as an engineering material, with a focus on its use in historic structures. It covers non-destructive techniques for condition assessment and strategies for the reuse of heritage structures.

### Learning outcomes

By the end of the course, you should be able to:

- Recognise timber as an engineering material and explain the inherent strengths and weaknesses of this organic and 'living' material
- Identify the cellular structure of timber in relation to softwoods and hardwoods
- Appreciate the timber grading rules to softwoods and hardwoods, and employ the rules and strategies in assigning strength classes to timber used in existing structures
- List the non-destructive testing techniques available in assessing timber used in historic structures
- Distinguish the simple structural forms of constructions used in historic structures

### Intended for

Graduate to very senior and managing engineers.

### Entry criteria

Familiarity with timber engineering may be beneficial, but is not essential.

### Price

**Member: £295 + VAT**  
(Early Booking £255 + VAT)

**Standard: £395 + VAT**  
(Early Booking £335 + VAT)

**25% discount on associated publications:**

*Manual for the design of timber building structures to Eurocode 5 (Second edition).*

**See p.30 for details.**

Contributes to IPD Core Objective **2.3**

### Tutors

**Dr Keerthi Ranasinghe** is the Principal Structural Engineer supporting the TRADA advisory line. Keerthi sits on the TRADA Technical Advisory Panel and the BSI and European (GEN) technical committees on Eurocode 5, as well as being a member of the Project Team updating the connections chapter of Eurocode 5. Keerthi is the author of several popular publications, including the Institution's Manual for the design of timber building structures to Eurocode 5 2nd ed.

**Mr. Philip O'Leary** is the section leader for Timber Technology Investigations at BM TRADA, the technical authority behind TRADA. With around 30 years of post-qualifying experience, Phil has published in local and international journals about wood science. Phil is the leading authority at TRADA for Visual Strength Grading and is also the Assessor for Qualified Visual Strength Graders.

# Structural Awards

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[www.structuralawards.org](http://www.structuralawards.org)

## Lateral stability to building structures

**Course date:**  
**16 February (online) | 5 October 14:00 – 18:00**

### Aim

This half day course covers the methods by which the lateral stability of a building structure is achieved.

### Learning outcomes

By the end of the course, you should be able to:

- Describe the methods of achieving lateral stability in buildings
- Recognise how robustness impacts on lateral stability
- Identify second order effects on building structure frames
- Illustrate development and projection of load paths in frames
- Identify and exploit vertical and horizontal stability systems

Contributes to IPD Core Objective **2.1, 2.2**

### Intended for

Graduate structural engineers who are expected to develop their understanding of the stability of complex, real world building structures.

### Entry criteria

Attendees must be practising structural engineers who are familiar with building structures and have a minimum of one year's experience.

### Price

**Member: £145 + VAT**  
(Early Booking £125 + VAT)

**Standard: £195 + VAT**  
(Early Booking £165 + VAT)

### 25% discount on associated publications:

- *Stability of buildings Parts 1 and 2: General philosophy and framed bracing*
- *Stability of buildings Part 3: Shear walls*
- *Stability of buildings Part 4: Moment frames (Stability of buildings may also be purchased as a three-volume package at a discount price)*
- *Practical guide to structural robustness and disproportionate collapse in buildings*

See p.30 for details.

### Tutor

**Chris O'Regan** is a principal structural engineer. As a graduate structural engineer he was trained at Dewhurst MacFarlane & Partners, where he first started designing structural glass elements. In 2012, he revised the Institution's *Structural Use of Glass in Buildings*, bringing it in line with current methods of design, construction and maintenance of glass structures.



# Structural engineering with bamboo



David Trujillo



Seb Kaminski

**Course dates:**  
**13 July**

## Aim

This course will equip attendees with practical knowledge about structural design with bamboo stems (culms). The course considers aspects of concept design, detailed design and durability by design.

## Learning outcomes

By the end of the course, you should be able to:

- To describe the structural characteristics of bamboo culms
- To list and interpret the advantages and limitations of using bamboo culms as a structural product
- To comprehend where and how bamboo culms may be used appropriately within a building structure
- To determine the capacity of bamboo culms and their connections through basic calculations
- To examine the state-of-the-art of structural design with engineered bamboo

Contributes to IPD Core Objective **2.1, 2.2, 2.3**

## Intended for

Structural engineers in developed countries who work with glulam and timber and are exploring alternatives. Structural engineers working in developing countries with an interest in building with sustainable materials.

## Entry criteria

None.

## Price

**Member: £295 + VAT**  
(Early Booking £255 + VAT)

**Standard: £395 + VAT**  
(Early Booking £335 + VAT)

## Tutors

### David Trujillo

David has been researching bamboo for over 20 years and has authored or co-authored more than 25 publications on the subject, including the IStructE Technical Papers on bamboo within The Structural Engineer. He has led the development of two ISO standards for bamboo, which are now British Standards (BS ISO 22157 and BS ISO 19624). He is actively participating in the revision of ISO 22156 (Structural Design), and Chapter G of Colombia's building code.

### Seb Kaminski

Seb is a structural engineer in Arup's Specialist Technology & Research Team. He is a specialist in the use of bamboo, especially for housing, and led the IStructE Technical Papers on Bamboo within The Structural Engineer. Seb is currently involved in the revision of ISO 22156 (Structural Design of Bamboo) and the development of a testing guide for bamboo shear walls and runs international training courses in using bamboo structurally.

# Seismic design of structures



Dr Agathoklis Giaralis



Professor Cedric D'Mello



Dr Panagiotis Mergos

**Course dates:**  
**10-11 June**

## Aim

This course introduces seismic design of civil engineering structures. It builds on the basics of structural dynamics and engineering seismology. The course focusses on seismic loading and design codes, conceptual seismic design principles and analysis for seismic loading, and design and detailing of structural members.

## Learning outcomes

By the end of the course, you should be able to:

- Identify situations where earthquake loading must be included in the design of structures and how to define this loading
- Understand the basic principles of seismic design and select appropriate performance requirements for structures subjected to earthquake loads
- Select an appropriate structural configuration for a building situated in a seismic zone
- Analyse a building for seismic loading
- Design and detail reinforced concrete structures
- Have an appreciation of seismic design and detailing of steel and steel-concrete composite structures
- Have an appreciation of seismic design of highway bridges

## Intended for

Practising structural design engineers and consultants seeking guidance on seismic design of structures, graduates undertaking their Initial Professional Development, and students, researchers and academics with limited seismic design experience.

## Entry criteria

Participants should be familiar with the principles of structural design and the basics of structural dynamics.

## Price

**Member: £475 + VAT**  
(Early Booking £415 + VAT)

**Standard: £635 + VAT**  
(Early Booking £545 + VAT)

**25% discount on associated publications:**

*Manual for the seismic design of steel and concrete buildings to Eurocode 8.*  
**See p.30 for details.**

Contributes to IPD Core Objective **2.1, 2.2**

## Tutors

**Dr Agathoklis Giaralis** is the Director of the Research Centre for Civil Engineering Structures at City, University of London (CUoL). His research output documented in over 90 peer-reviewed articles are in structural dynamics and earthquake engineering with a focus on probabilistic seismic analysis methods and on vibration control devices for high seismically performing structures.

**Professor Cedric D'Mello** is Professor of Structural Engineering at CUoL. His research work is in the area of large-scale testing and assessment of composite structures in lab and in situ with much of it being supported by UK and European funding bodies as well as by industry.

**Dr Panagiotis Mergos** is Senior Lecturer in Structural Engineering and the Programme Director of the MSc in Civil Engineering Structures at CUoL. He has worked for 18 years in seismic design and assessment of structures as a researcher and as a consultant and he is panel member of the UK Mirror Group MG2 developing the next Eurocode 8- part 1 seismic design code.



IN COLLABORATION

# Stadium design



Angus Cormie

**Course date:**  
**11 November**

## Aim

This course demonstrates the similarities between stadium engineering and other types of design. It stresses the importance of the Class 3 structure review regulations and the critical compliance with stadium design guides.

## Learning outcomes

By the end of the course, you should be able to:

- Debate structural solutions for compliance with geometric viewing requirements
- Develop the structural form in association with the architect
- Demonstrate critical dynamics for other design team members that may impact on the structural form
- Appreciate the importance of the design for construction

Contributes to IPD Core Objective **2.1, 2.2**

## Intended for

Graduate engineers approaching chartership. The course is also relevant for other engineers who need an understanding of stadium design.

## Entry criteria

None.

## Price

**Member: £295 + VAT**  
(Early Booking £255 + VAT)

**Standard: £395 + VAT**  
(Early Booking £335 + VAT)

## Tutor

**Angus Cormie** is Chief Engineer at J&D Pierce Steel Fabricators and a Chartered Structural Engineer who has spent most of his professional life in contracting. He has designed many stadiums and helped develop innovative solutions for the build process. Angus regularly presents papers on design and construction related topics.

# Steel essentials: practical design of structural steelwork



Richard Dixon

**Course date:**  
**4 October**

## Aim

This course presents practical guidance on key aspects of preliminary scheme development and detailed scheme design in structural steelwork.

## Learning outcomes

By the end of the course, you should be able to:

- Compare steel construction options available at preliminary scheme development and determine the optimum design solution
- Apply a simple methodology for preliminary sizing of members to enable budget costing to be developed
- Judge the significance of steel grade and subgrade for structural steelwork and how to specify them
- Describe the responsibilities for different parties under CE Marking
- Describe key aspects of robustness and corrosion protection
- Design for fire and assess the benefits of critical temperature calculation for fire protection
- Identify resources available to assist with the use of structural steelwork in construction

Contributes to IPD Core Objective **2.1, 2.2, 2.3**

## Intended for

Primarily, structural engineers, but the course has been structured to concentrate on good practice in steel construction rather than focus on how to complete design calculations.

## Entry criteria

Familiarity with steel construction would be helpful, but is not essential.

## Price

**Member: £295 + VAT**  
(Early Booking £255 + VAT)

**Standard: £395 + VAT**  
(Early Booking £335 + VAT)

**25% discount on associated publications:**

*Manual for the design of steelwork building structures to Eurocode 3.*  
**See p.30 for details.**

## Tutor

**Richard Dixon** is a chartered engineer who has worked in the steel industry for the last 20 years. Before partnering with Steel for Life, he worked for British Steel/Corus/Tata Steel in various roles. Recently, he led the Structural Advisory Service at Tata Steel in the joint venture with the BCSA to promote efficient design in structural steelwork to the UK construction industry.



# Structural concepts for engineers



Dr Tianjian Ji



Dr Adrian Bell

**Course date:**  
**15 June**

## Aim

This course gives engineers an enhanced understanding of structural concepts. It covers their applications in design and how they can be used to solve challenging engineering problems.

## Learning outcomes

By the end of the course, you should be able to:

- Analyse several key structural concepts and their applications
- Realise clever engineering solutions using structural concepts
- Be prepared to apply structural concepts in practice
- Identify structural concepts from practice
- Recognise intuitive ways to interpret structural concepts

Contributes to IPD Core Objective **2.1**

## Intended for

Recent graduates from BEng and MEng courses in civil engineering, structural engineering and mechanical engineering. The course will also be of interest to experienced engineers and architects who wish to use structural concepts creatively in their work.

## Entry criteria

Participants are encouraged to read as much as possible at [www.structuralconcepts.org](http://www.structuralconcepts.org) before attending the course.

## Price

**Member: £295 + VAT**  
(Early Booking £255 + VAT)

**Standard: £395 + VAT**  
(Early Booking £335 + VAT)

## Tutors

**Dr Tianjian Ji** and **Dr Adrian Bell** are Reader and Senior Lecturer, respectively, in Structural Engineering at the University of Manchester. They developed 'Seeing and Touching Structural Concepts' for gaining an intuitive understanding of structural concepts by use of simple physical models and appropriate practical examples.



I expect the course will enable me to provide more efficient designs based on basic concepts rather than complex computer analysis. Especially important at initial design stage where limited time is available to provide solutions to structural problems.

**2019 course attendee**

# Structural robustness and disproportionate collapse



Ruth Haynes

**Course dates:**  
**13 May | 28 October**

## Aim

This course equips practising engineers to undertake the full structural design of a building, including designing a robust building to avoid disproportionate collapse. The course covers designing buildings of Class 1 – 2B and alterations/change of use of existing buildings.

## Learning outcomes

By the end of the course, you should be able to:

- Describe the layout and structure of a robust building and explain what makes a building vulnerable
- Summarise which legislation is relevant to disproportionate collapse and identify key clauses
- Classify buildings into their types, with respect to building use and size
- Outline different approaches for achieving robustness
- Determine a strategy for robustness compliance for buildings of different material types, use and size
- Analyse an existing building that is being altered or extended and develop an outline scheme for robustness using guidance from London District Surveyors Association

Contributes to IPD Core Objective **2.1, 2.2**

## Intended for

Newly chartered or almost chartered engineers who are independently doing the outline, scheme and detailed design of buildings.

## Entry criteria

Two to six years in a consulting engineering company, unless you are almost or recently chartered.

## Price

**Member: £295 + VAT**  
(Early Booking £255 + VAT)

**Standard: £395 + VAT**  
(Early Booking £335 + VAT)

## 25% discount on associated publications:

*Practical guide to structural robustness and disproportionate collapse in buildings* and *Manual for the systematic risk assessment of high-risk structures against disproportionate collapse*. Also available as a two-volume package. **See p.30 for details.**

## Tutor

**Ruth Haynes** is a Chartered Civil Engineer with 20 years' experience in consultancy. She worked as a Party Wall surveyor in central London for a number of years and prior to this ran her own engineering consultancy. She has also worked in Dhaka inspecting clothing factories in the wake of the Rana Plaza collapse and currently works for MDIS which provides warranties for new buildings.

# Temporary works appreciation

**Course date:**  
14 January (online) | 29 September

## Aim

This course provides an understanding of temporary works. It covers how they are managed in construction and the importance of controlling costs and risks.

## Learning outcomes

By the end of the course, you should be able to:

- Identify what temporary works are
- Discuss the Bragg Report and procedural management of temporary works
- Differentiate between the roles of Designated Individual, Temporary Works Coordinator and Temporary Works Supervisor
- Identify who can design and check temporary works, residual risks and design responsibilities
- Manage common issues with temporary works

Contributes to IPD Core Objective 2.5

## Intended for

Graduates and structural engineers from consultants, contractors, suppliers or academia who are either approaching, or have recently achieved, chartered status.

The course is also suitable for non-technical persons who wish to have a CPD refresher on the latest philosophies and documents on temporary works.

## Entry criteria

None. However, participants with some previous exposure to temporary works will benefit from the tutor's experience.

## Price

**Member: £295 + VAT**  
(Early Booking £255 + VAT)

**Standard: £395 + VAT**  
(Early Booking £335 + VAT)

## Tutor

**Ray Filip** is a Fellow of the Institution of Civil Engineers with over 33 years' experience in the field of temporary works design and management. He has spent 20 years working for contractors in the UK and abroad and is a member of the committee responsible for revising BS5975 (British Standard for temporary works). Ray is currently a self-employed consultant having formed RKF Consult Ltd in 2007.

“Mr Filip gave a wide variety of temporary works illustrations based on his hands-on experiences, which were very informative.”

2018 course attendee

# Temporary works design

**Course dates:**  
3-4 February (online) | 11-12 October

## Aim

This two day course provides participants with an understanding of the basic principles of temporary works design.

## Learning outcomes

By the end of the course, you should be able to:

- Describe the principles of basic temporary works design methodologies
- Explain temporary loads, potential modes of failure and practical considerations
- Calculate concrete pressures and design formwork, falsework and back-propping
- Design a simple trench support scheme
- Apply basic wind loading and design a site hoarding
- Design outrigger spreader pads for mobile cranes
- Design a simple needling scheme
- Apply the principles behind temporary works for demolition, facade retention and structural propping, basement construction and scaffolding design
- Discuss loads and modes of failure

Contributes to IPD Core Objective 2.2, 2.5

## Intended for

Civil or structural engineering graduates from contractors to consultants with some basic understanding of the design process, or those who wish to further their design knowledge and experience.

## Entry criteria

Basic university level engineering knowledge is assumed. Participants will be required to carry out engineering calculations.

## Price

**Member: £475 + VAT**  
(Early Booking £415 + VAT)

**Standard: £635 + VAT**  
(Early Booking £545 + VAT)

## Tutor

**Ray Filip** is a Fellow of the Institution of Civil Engineers with over 33 years' experience in the field of temporary works design and management. He has spent 20 years working for contractors in the UK and abroad and is a member of the committee responsible for revising BS5975 (British Standard for temporary works). Ray is currently a self-employed consultant having formed RKF Consult Ltd in 2007.

“The best course I have been on, very useful. Ray presented brilliantly and left no stone unturned.”

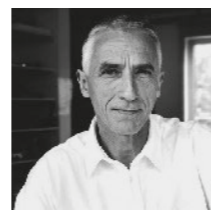
Overall, very good and relevant CPD.

Thanks to Ray for a thoroughly enjoyable course.

Ray was very good at explaining the various topics and was able to answer all questions.

Previous course attendees

# The drawing gym for engineers



Trevor Flynn

**Course date:**  
**3 November**

## Aim

This course introduces a number of drawing techniques and systems. It will increase your confidence in your sketching abilities.

## Learning outcomes

By the end of the course, you should be able to:

- Draw confidently using a repertoire of techniques and drawing systems
- Draw simple geometric forms, building details in isometric, axonometric, section and simple perspectives
- Express a broad range of concepts and forms through drawing
- Draw assuredly from your 'mind's eye'
- Use non-verbal communication professionally

Contributes to IPD Core Objective 1.2

## Intended for

Engineers and designers, including product designers, architects and set designers, who are seeking a set of 2D and 3D strategies to help visualise spatial concepts.

## Entry criteria

This course is suitable for all, including non-sketchers, rusty practitioners, and those who sketch frequently but want to make drawings of a higher standard, possibly for use in presentations. Participants will be sent work sheets before the course, which will enable you to practise sketching before you attend. You will leave with another set to help you keep practising.

## Price

**Member: £295 + VAT**  
(Early Booking £255 + VAT)

**Standard: £395 + VAT**  
(Early Booking £335 + VAT)

## Tutor

**Trevor Flynn** is Director of Drawing at Work and founder of The Drawing Gym. He teaches drawing at University College London and runs the architectural and spatial drawing module of the Architectural Association foundation course. Trevor is a visiting lecturer at the School of Architecture at the University of Bath and is a drawing instructor in several architectural and engineering offices.



Trevor was a fantastic teacher; his passion for sketching is inspiring and everything he taught was useful and communicated so well as to be absorbed easily.

Previous course attendee



Thoroughly enjoyable course which was well structured and current. Would highly recommend this to anyone.

Previous course attendee





# Timber workshop:

## design through worked examples

**Course dates:**  
**5 October**

### Aim

This advanced practical workshop will teach complex timber engineering through worked examples. It encourages problem-solving through teaching tools and group discussion.

### Learning outcomes

By the end of the course, you will learn about:

- Member sizing
- Tapered and curved members
- Connections, moment connections & avoiding brittle failures
- Fire design
- Stability and vertical diaphragm walls
- Vibration analysis
- Strength and stiffness of cross laminated timber
- Glued in rods

Contributes to IPD Core Objective **2.1, 2.2, 2.3**

### Intended for

Graduate and entry level engineers wishing to fast track their timber design experience.

Experienced engineers with specific projects to hand wishing to refresh their timber knowledge.

### Entry criteria

Attendance at the Eurocode 5: The Essentials of Timber Design course or familiarity with timber engineering to Eurocode 5.

### Price

**Member: £295 + VAT**  
(Early Booking £255 + VAT)

**Standard: £395 + VAT**  
(Early Booking £335 + VAT)

**25% discount on associated publications:**

*Manual for the design of timber building structures to Eurocode 5.*

See p.30 for details.

### Tutor

**Dr Keerthi Ranasinghe** is the Principal Structural Engineer supporting the TRADA advisory line. Keerthi sits on the TRADA Technical Advisory Panel and the BSI and European (CEN) technical committees on Eurocode 5, as well as being a member of the Project Team updating the connections chapter of Eurocode 5. Keerthi is an independent timber engineering consultant and is also the Senior Lecturer and Programme Director for Civil Engineering at the University of Wales Trinity Saint David. Keerthi is the author of several popular publications, including the TRADA Span Tables to Eurocode 5, and the Institution's Manual for the design of timber building structures to Eurocode 5 2nd ed.





# Understanding structural behaviour

Course dates:  
17-18 May | 30 November - 1 December

IN-HOUSE AVAILABLE

## Aim

This two day course shows engineers how to arrive at a qualitative solution to both create a structure and check computer results.

## Learning outcomes

By the end of the course, you should be able to:

- Apply a qualitative approach to the solution of a range of framed structures
- Apply checking protocols for computer output and establish a reliable interpretation of the results
- Apply the qualitative approach to the approximate analysis of structures as an aid to the creation of the structural model
- Determine appropriate protocols for the development of these skills in the design office

Contributes to IPD Core Objective 2.1, 2.2

## Intended for

Recent graduates from BEng or MEng courses. As the course is non-numerical, it will also be of interest to those from other construction disciplines who wish to obtain a basic introduction to structural engineering.

## Entry criteria

None.

## Price

**Member: £475 + VAT**  
(Early Booking £415 + VAT)

**Standard: £635 + VAT**  
(Early Booking £545 + VAT)

## Tutors

**Dr David Brohn CEng FStructE** teaches structural engineering in the UK and internationally. David pioneered the 'Brohn Test' in the early 1970s, leading the way in evidence-based tracking of levels of understanding structural behaviour amongst graduates. He was awarded The Institution of Structural Engineers President's Award in recognition of his visionary approach to the education of students and graduates.

**Tim Lai** is founder of The Structural Exam and Operations Director for New Paradigms. He teaches budding graduates in the UK and internationally about structural engineering, finance and entrepreneurship. Formerly an Engineering Leadership Award winner with the Royal Academy of Engineering, he worked at Shell as an Offshore Structural Engineer before venturing into entrepreneurship. Tim is also an accredited journalist writing at Forbes.com.



The course will help me understand the behaviour of structures when modelled using computer software. It has also improved my quick hand checks on reinforcement locations.

2019 course attendee

# Understanding structural design

Course dates:  
20-21 October

IN-HOUSE AVAILABLE

## Aim

This two day course extends the principles developed in the Understanding Structural Behaviour course. It covers more complex real structures and failures; and the important skills of approximate analysis for checking computer output and member sizing.

## Learning outcomes

By the end of the course, you should be able to:

- Review the modelling process
- Recognise the fundamental behaviour of structural elements
- Appreciate overall structural equilibrium
- Describe the behaviour of 3D structures
- Interpret and explain the behaviour of real structures
- Reduce complex structures to simpler forms
- Comprehend the approximate analysis of sub-frames for member sizing
- Describe the case studies: Swiss Re HQ, London, and Centre Pompidou, Paris

Contributes to IPD Core Objective 2.1, 2.2

## Intended for

Recently qualified graduates under training who wish to improve their skills in structural modelling. The course will also be of interest to experienced engineers who are returning to the structural design office.

The course is excellent preparation for The Institution of Structural Engineers Chartered Membership Exam.

## Entry criteria

Attendance at the Understanding Structural Behaviour course is a recommended prerequisite.

## Price

**Member: £475 + VAT**  
(Early Booking £415 + VAT)

**Standard: £635 + VAT**  
(Early Booking £545 + VAT)

## Tutors

**Dr David Brohn CEng FStructE** teaches structural engineering in the UK and internationally. David pioneered the 'Brohn Test' in the early 1970s, leading the way in evidence-based tracking of levels of understanding structural behaviour amongst graduates. He was awarded The Institution of Structural Engineers President's Award in recognition of his visionary approach to the education of students and graduates.

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# Using computational design in practice



Harri Lewis

**Course dates:**  
11-12 March (online) | 6-7 October

## Aim

This two day practical course introduces engineers to various computational design methods and systems. You will experiment with visual programming (using Grasshopper) and text-based programming (using C#). You will see how automation can improve engineers' workflows. No previous experience is required.

## Learning outcomes

By the end of the course, you will have:

- Generated parametric structural layouts
- Seen and implemented various options for parametrically analysing structures
- Explored the differences between visual and text-based programming
- Recognise how and why various data structures are used

Contributes to IPD Core Objective **2.2**

## Intended for

Student or professional engineers.

## Entry criteria

None.

## Price

**Member: £475 + VAT**  
(Early Booking £415 + VAT)

**Standard: £635 + VAT**  
(Early Booking £545 + VAT)

**25% discount on associated publications:**  
*Computational engineering.*  
See p.30 for details.

## Tutor

**Harri Lewis** is an expert in applying and teaching computational methods for structural design. He is the co-founder of Mule Studio, an award-winning design studio who specialise in computational design, industrial design, architecture and teaching. He is a chartered engineer who previously worked in the Specialist Modelling Group at Foster + Partners and Ramboll Computational Design.

He believes learning to create software can make an engineer's job more interesting, efficient, creative and fun.



I enjoyed very much the overall course structure. Particularly, the introduction of software and plugins set the scene of the course

2019 course attendee



# Wind:

## dynamic response of wind-excited flexible structures



Dr Alessandro Palmeri



Dr Giorgio Barone

**Course date:**  
**21 September**

### Aim

This course covers the theoretical background, technical aspects and Eurocode provisions for the analysis and design of flexible structures exposed to wind loads.

### Learning outcomes

By the end of the course, you should be able to:

- Distinguish between and simulate dynamic wind loads on structures
- Describe vortex shedding phenomena on tall structures (such as chimneys and tall buildings) and their design implications
- Propose means to suppress wind-induced responses (wind-resistant design and various damping solutions)

### Intended for

Civil or structural engineers with an interest in the analysis and design of wind-excited flexible structures, such as chimneys, tall buildings and transmission towers.

### Entry criteria

This course covers concepts of structural dynamics. It complements the Wind Loading on Structures to EN1991-1-4 course, which covers the

basic principles underlying EN 1991-1-4. Participants may find it beneficial to have some familiarity with the fundamental concepts of structural dynamics, Fourier analysis and matrix calculations.

### Price

**Member: £295 + VAT**  
(Early Booking £255 + VAT)

**Standard: £395 + VAT**  
(Early Booking £335 + VAT)

### Discount

Book both Wind courses together and get a discount. Price for both days:

**Member: £475 + VAT**  
(Early Booking £415 + VAT)

**Standard: £635 + VAT**  
(Early Booking £545 + VAT)

### 25% discount on associated publications:

*Manual for the design of building structures to Eurocode 1 and Basis of structural design.*

See p.30 for details.

### Tutors

**Dr Alessandro Palmeri** leads the Structures and Materials Group at Loughborough University. His research focuses on applications of structural dynamics, including bridge, earthquake and wind engineering, and probabilistic methods, including reliability- and performance-based design.

**Dr Giorgio Barone** is a lecturer in structural engineering at Loughborough University. His research, expertise and interests include structural dynamics, with emphasis on earthquake and wind engineering, as well as lifecycle engineering and maintenance optimisation of ageing structures.



It was all very useful as it provided me with a great overview on structural dynamics.

2019 course attendee

Contributes to IPD Core Objective 2.2

# Wind:

## wind loading on structures to EN 1991-1-4



John Owen

**Course date:**  
**20 September**

### Aim

This course introduces EN 1991-1-4 for determining wind actions on structures. It outlines the basic principles behind the code and covers each step of the procedure for calculating the wind loads on a structures. Attention is given to important features introduced by the UK NA.

### Learning outcomes

By the end of the course, you should be able to:

- Describe the basic principles of EN 1991-1-4
- Determine site-specific wind data for a site in the UK
- Determine the design wind loads on a typical building structure and its cladding

Contributes to IPD Core Objective 2.2

### Intended for

Recently graduated civil and structural engineers who wish to study wind effects on structures in greater detail.

### Entry criteria

Participants should have a first degree in civil or structural engineering.

### Price

**Member: £295 + VAT**  
(Early Booking £255 + VAT)

**Standard: £395 + VAT**  
(Early Booking £335 + VAT)

### Discount

Book both Wind courses together and get a discount. Price for both days:

**Member: £475 + VAT**  
(Early Booking £415 + VAT)

**Standard: £635 + VAT**  
(Early Booking £545 + VAT)

### 25% discount on associated publications:

*Manual for the design of building structures to Eurocode 1 and Basis of structural design.*

See p.30 for details.

### Tutor

**John Owen** is Associate Professor at the University of Nottingham, where he has taught structural analysis and design since 1993. He has research interests in wind engineering and structural dynamics and has conducted research on tubular structures and structural health monitoring. John is a Fellow of the UK Wind Engineering Society, where he was also Chair from 2009-2012.



# Frequently asked questions

## Q. How can I get 25% discount on printed copies of associated publications?

The Institution's manuals and guides act as a valuable supplementary resource to the live teaching – and where relevant, are identified in the course description. An exclusive **25% discount** on the price is available to course participants. Email [library@istructe.org](mailto:library@istructe.org) prior to the event with your request, attaching your Eventbrite ticket as proof of attendance.

## Q. Why are some courses more expensive than others?

Our pricing is benchmarked against training offered by other professional engineering bodies. Half day and multi-day course prices are calculated as pro rata from the day rate. Generally members pay 30% less than the standard rate.

Any surplus generated from the CPD courses is Gift Aided back to the Institution to further its charitable aims.

## Q. Are there reduced rates for students/the unemployed/those on low incomes?

The CPD programme is generally aimed at postgraduates and those further on in their careers. It is therefore not suitable for undergraduate students, and so we have not set a student rate. However, any Institution member who is paying the Low Income Reduction (LIR) membership subscription fee can claim the same percentage reduction on CPD course bookings. The LIR rate is often an option for postgraduate students, or those on low incomes or not in employment, etc. If you believe this applies to you, please contact [training@istructe.org](mailto:training@istructe.org) before you book your course place and we can generate a discount code for you.

## Q. Why are the courses mostly in London?

The majority of our current CPD programme is delivered at the Institution's headquarters in London. However we have increased the number of courses available online for 2021.

Alternatively, many of our courses can be delivered to your teams on your premises, at a place and time that suits your organisation.

## Q. Can you livestream or record the courses so that they can be watched remotely?

Our CPD courses are run as workshops with a limited number of participants. This is so we can give tutors the opportunity to build hands-on, individual and group work into the day and give participants the chance to ask questions. This format doesn't lend itself to livestreaming or filming in the same way as a lecture.

## Q. Can I get a VAT invoice?

Yes. After you book your place via Eventbrite please contact [training@istructe.org](mailto:training@istructe.org) and we can generate a VAT invoice for you.

## Q. How is the Institution HQ managing the risks of COVID-19?

Delegate safety will always be our highest priority. We have implemented enhanced health and safety measures and are complying fully with government guidance and recommendations. Courses may be moved to online delivery if necessary. Contact us if you have any concerns.



# Terms and conditions

By booking your place on a Continuing Professional Development (CPD ) Course you are entering into a binding agreement. Your booking is confirmed as soon as payment is received. If you request an invoice to pay by BACS, your booking will not be confirmed until payment has reached our account. If you have paid for the Course(s) by credit/debit card online and would like to receive a VAT invoice, please contact us and we will be happy to issue one.

You are advised to take out appropriate travel insurance, as we will not accept any liability for travel, accommodation or other expenses incurred as a consequence of a possible Course cancellation or postponement. In any event, The Institution of Structural Engineers will not accept liability for any loss, including incidental or consequential damages, etc.

## Definitions

For the purposes of these terms and conditions:

the “Course” refers to the Professional Development workshop or lecture

“Participant” means a person for whom you have ordered or purchased a place to the Course including yourself (if you are an individual)

“Venue” means The Institution of Structural Engineers, 47-58 Bastwick Street, London, EC1V 3PS, UK (unless otherwise stated).

“we”, “us” and “our” means IStructE Limited, a company registered with Companies House and incorporated in England and Wales (registered number 2444141). IStructE Limited is the wholly-owned trading subsidiary of The Institution of Structural Engineers. The registered address for IStructE Limited is 47-58 Bastwick Street, London, EC1V 3PS

“you” and “your” means, if you are acting as a consumer, the person named on the Course booking and if you are acting as a business, the organisation named as the “Company” on the Course booking.

## Price and Payment

Ticket prices are exclusive of VAT.

Bookings should be paid by credit card at the time of booking. You can also request to pay by BACS. An invoice will be emailed to you within two working days. Payment must be received by The Institution of Structural Engineers within 14 days of the invoice date or 48 hours before the start of the course, whichever comes earlier.

Your place on the Course is confirmed once payment has been received in cleared funds. You will receive confirmation of your booking by email.

We reserve the right to change (for a reasonable alternative) the delivery format, start and finishing times, dates, speaker or presenter and the venue of the Course without incurring any liability to you.

The price does not include any travel costs or any costs of accommodation. The price relates solely to attendance at the course, (which includes tea / coffee and a buffet lunch for full day face-to-face courses only).

## Special requirements

Special requirements must be requested at least five working days prior to the Course. Any requests made after this date cannot be guaranteed and additional charges may apply, including, but not limited to vegan or kosher menus; special access requirements.

## Communication

You accept that communication with us may be electronic. We may contact you by email or provide you with information by posting notices on our website. For contractual purposes, you agree to this electronic means of communication and you acknowledge that all contracts, notices, information and other communications that we provide to you electronically comply with any legal requirement that such communications be in writing. This condition does not affect your statutory rights.

We may give notice to you at either the email or postal address you provide to us on booking, or in any of the ways specified. Notice will be deemed received and properly served immediately when posted on our website, 24 hours after an email is sent, or three days after the date of posting of any letter.

In proving the service of any notice, it will be sufficient to prove, in the case of a letter, that such letter was properly addressed, stamped and placed in the post and, in the case of an email that such email was sent to the specified e-mail address of the addressee.

All notices given by you to us must be given to The Institution of Structural Engineers, 47-58 Bastwick Street, London, EC1V 3PS, UK, or by email to [training@istructe.org](mailto:training@istructe.org).

## Cancellations

Cancellations must be made in writing to the registration contact at the address below. If you cancel on or before one month before the Course date, we will refund your booking fee in full. If you cancel less than one month before the Course no refund will be given.

If we cancel the course, we will refund all booking fees paid. We do not, however, accept liability for travelling, accommodation or any other expenses incurred as a result of any cancellation or postponement of the Course.

Our liability for loss or damage incurred as the result of cancellation or postponement of the Course is limited to the amount of your booking fee.

If the Course is postponed for reasons beyond the direct control of the organisers (Force Majeure), this booking will be transferred to the revised date of the Course and all these Terms and Conditions shall apply to any such transferred booking.

If, one month before a course, we haven't received a minimum number of

bookings, we may need to cancel a course. We will offer a full refund or a transfer to a future date.

## The Course

A substitution of a Participant named on your booking can be requested by giving written notice to us. We reserve the right to accept or deny your request.

During the Course the presenter may use their own copyrighted material. Any unauthorised recording, copying or posting of this material is an infringement of their copyright.

We reserve the right to refuse entry to the Course to any Participant if, in our opinion or the opinion of the presenter, the Participants' behaviour is considered inappropriate. In this case they may be refused entry or asked to leave and excluded from the Course without refund or compensation. Reasonable security searches at the Venue may take place.

## Liability

The Institution of Structural Engineers shall not be liable to you or any Participant (whether such liability arises in contract, tort (including negligence) or otherwise for:

any loss of profit, loss of or damage to reputation or goodwill or any indirect, special or consequential damages, loss, costs, claims or expenses of any kind; and/or

any loss or damage arising from a failure or delay in performing our obligations under the Contract to the extent that such failure or delay was caused or

contributed to by an act or omission by you or any Participant.

The exclusions and limitations of liability shall not apply to any loss suffered by any person arising out of:

the fraud and/or fraudulent misrepresentation of the person seeking to rely on the exclusion or limitation; and

death or personal injury resulting from negligence on the part of the person seeking to rely on the exclusion or limitation.

You are responsible for taking appropriate insurance cover in connection with your attendance at the Course. Where a Participant is travelling from outside of the United Kingdom to attend the Course, appropriate travel insurance should be purchased independently and in advance of any travel or travel bookings.

The views expressed by any presenter at the Course are representative of the presenter's own opinions and cannot in any way be attributed to us. We are not liable for the content of the Course, although we take reasonable checks to ensure that it is appropriate.

## Correspondence Address:

**CPD Courses**  
IStructE Limited  
47-58 Bastwick Street  
London EC1V 3PS

Email: [training@istructe.org](mailto:training@istructe.org)





## In-house training

### Tailored training to help you achieve individual, team and organisational objectives.

For many of our courses, we can offer delivery to your teams in your premises, at a place and time that suits your organisation.

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We've highlighted the courses that have the in-house training option by featuring the tag on the course page, although we may be able to deliver other courses from our programme in house also.

#### Tailored prices

In-house training prices are based on the unique training solution that you require. Costs are negotiated when we discuss and agree your requirements with you. Contact us if you require more information on how our tailored pricing works.

[training@istructe.org](mailto:training@istructe.org)

IN-HOUSE AVAILABLE

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Visit [www.istructe.org/cpd-2021](http://www.istructe.org/cpd-2021)

### Take advantage of our discounts—

**Up to 15% off** all courses when you book more than a month in advance

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**Big discounts** when you book pairs of complimentary courses (where stated)

### Consider other great ways to gain CPD—

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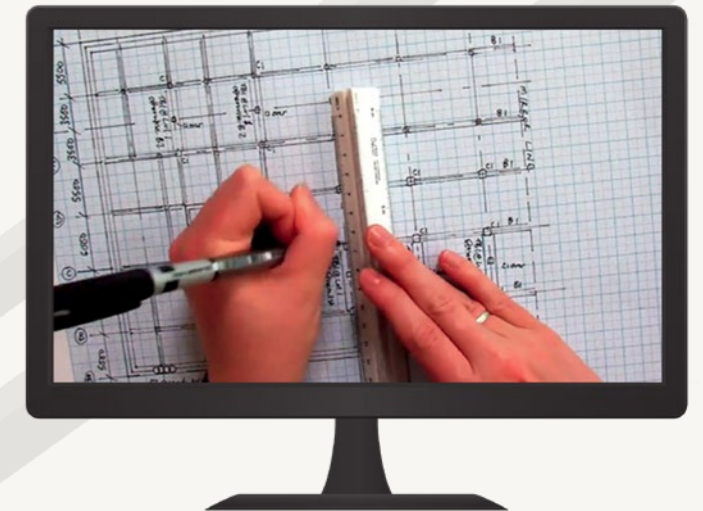
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