

Course Title	SP131: Design Programme on Soil Slope Stability and Earthworks
Duration	6 evening sessions, 4pm to 7.30pm
Delivery Mode	1 evening per week
Cost	£695 + VAT per delegate
Delegate Nos.	4 to 10
Intended Audience	<ul style="list-style-type: none"> • Engineering geologists with limited design experience wanting to develop their understanding • Graduate civil and structural engineers early in their careers wanting to refresh and develop their understanding and skills
Objectives	<p>At the end of this course delegates should have:</p> <ul style="list-style-type: none"> • Refreshed their understanding of the types of slope failure using case studies and relevant soil mechanics principles • Developed their knowledge and understanding of the principles of slope stability analysis and slope remediation techniques • Reviewed design codes and principles, and applied their knowledge to a case study • Refreshed their understanding of the types of earthworks and their contrasting performance requirements • Developed their understanding of how fills perform and how to design general earthworks • Developed their appreciation of earthworks specifications and how to set acceptability and monitoring / control criteria based on the available GI data
Course Description	<p>Many developments will require some degree of ground profile modification. This will commonly result in the ground being cut or fill being placed as part of earthworks operations, and this new condition must be stable. Design and construction of the earthworks must be considered holistically if a successful scheme is to be delivered.</p> <p>The aim of the course is to develop the abilities of the delegates to recognise and address slope stability issues, and understand how to design and monitor earthworks. The first half of the course will examine how slopes fail and the fundamental basis of why they stand up. It will examine the contrasting analytical issues in granular and cohesive soils, and the importance of time, before progressing to design codes and practicalities, and the principles of slope remediation. This part of the course will conclude with a practical slope stability exercise using proprietary software.</p> <p>The second half of the course will focus on the design and implementation of an earthworks scheme. It will start from a review of the typical forms of earthworks, with an emphasis on the need to consider design and construction holistically. The design and specification of fills will then be addressed, including the definition of appropriate acceptability criteria, monitoring and control of earthworks, and reporting and certification.</p> <p>The course will be taught in a tutorial style via a series of short lectures followed by discussions and questions. Between sessions, coursework will be provided to further amplify and reinforce the learning.</p>

<p>Indicative Content</p>	<p>The indicative content comprises the following:</p> <p><u>Weeks 1 to 3</u></p> <ul style="list-style-type: none"> • Types of failure through case studies • Key soil mechanics principles • Principles of circular slope stability analysis • Simple chart based analytical methods • Design codes and 'factors of safety' • Slope analysis design examples • Overview of the investigation and remediation of slope failures • Practical design example <p><u>Weeks 4 to 6</u></p> <ul style="list-style-type: none"> • Range of earthworks forms and their contrasting performance • Earthworks compaction plant and construction requirements • Performance of fills and defining project specific requirements • Forms and nature of a range of earthworks specifications • Acceptability criteria and relationship to ground knowledge • Monitoring, testing and control of earthworks • Verification, certification and reporting of earthworks
<p>Course Tutor</p>	<p>The tutor will be Dr Andy Goodwin, a chartered engineer with over 30 years' experience in industry and academia. He is a geotechnical specialist, with a thorough knowledge of both the theory and practicalities of geotechnical engineering.</p>