

Course Title	SP130: Design Programme on Shallow Foundations and Settlement
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 different types of shallow foundation and their modes of failure, using case studies • Developed their understanding of soil mechanics principles relevant to soil strength and compressibility • Developed their knowledge and understanding of bearing capacity • Developed their understanding of the prediction of settlements • Applied their knowledge and understanding to the design of foundations in a range of soil types
Course Description	<p>Those involved in the design of developments, either as designers or in an advisory role, need to understand how the above ground structure will interact with and affect the ground. This requires a sound understanding of soil behaviour.</p> <p>The aim of this course is to develop the abilities of the delegates in the design of shallow foundations and the prediction of settlements. The course will be delivered over 6 weeks with each tutorial-style session designed to be interactive and discussion based, to allow delegates to explore the subject matter in more depth than possible during a typical day course.</p> <p>The course will begin with an introductory section to give delegates perspective on the geotechnical engineering process before discussing how shallow foundations are built and could fail. The importance of a thorough understanding of the ground will be stressed. The course will then look at key soil mechanics principles applicable to foundations, before assessing bearing capacity under vertical and eccentric loading and looking at settlement estimation using a range of methods. The course will be practically focused throughout, and will culminate in the application of the learning to case studies to be supplied by the delegates ideally.</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>

Indicative Content	<p>The indicative content comprises the following:</p> <p><u>Weeks 1 & 2</u></p> <ul style="list-style-type: none">• Overview of geotechnical engineering and the design process• Types of foundation• Failure modes for shallow foundations• Key soil mechanics principles <p><u>Weeks 3 & 4</u></p> <ul style="list-style-type: none">• Shear failure and bearing capacity theory• Bearing capacity under vertical loads• Bearing capacity under eccentric loads• Settlement sensitivity of structures <p><u>Weeks 5 & 6</u></p> <ul style="list-style-type: none">• Stress distribution• Types of settlement and their occurrence• Estimation of settlement under shallow foundations• Design case studies to apply learning
Course Tutor	<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>