1.	The Structural Engineering Profession Role and Scope of Services	Code	Da	ES Init Date of As		ent
			G	K	E	С
Role o	of Structural Engineer					
1.1	Have a general understanding that structural engineer is to develop the skeletal framework and the foundation and other soil/structural interfacing works for bridges, buildings and other structural forms, which are to withstand against the natural forces due to gravitational, wind, soil, water, earthquake and/or other environmental effects.	K				
<u>Scope</u>	of Services to the Client					
1.2	Know that structural engineer is to deliver either on his/her own or in collaboration with other disciplines such as architect, building services engineer, quantity surveyor, etc. structures which meet the client brief requirements.	K				
1.3	Learn the procedures and involvement of structural engineer at the planning, design, tendering, construction and maintenance stages.	Κ				

2.	Vital Structural Engineering Steps and Familiarization of Local, National and International Standards	Code	ES Initials & Date of Assessment			ent
			G	K	E	С
<u>Defi</u>	ning a Structural Engineering Problem					
2.1	Have experience in defining a problem by identifying the purpose and functional requirements of the structure to be developed, the design parameters and constraints, the cost and time implications and other statutory and safety requirements.	Е				
Gat	hering Information					
2.2	Learn the ways and means to obtain design information relevant to the site, including carrying out of site investigation, field tests and laboratory tests for soil, wind, earthquake and/or other environmental parameters.	K				
2.3	Know the application and limitations of local, national and international standards, codes of practice, Building Regulations, practice notes, etc.	К				
2.4	Have updated knowledge of the cost parameters for the various types of structural materials, their manufacture/ construction methods and the associated time implications.	K				
Alte	rnative Solutions					
2.5	Gain practical experience in the identification and evaluation of alternative solutions to a problem.	Ε				
Esse	entials of Documnetation and Drawings					
2.6	Learn to prepare clear and comprehensive calculations and specification of structural solutions.	С				
2.7	Learn the essentials of good structural engineering drawings.	С				

3.	Design Practice	Code	ES Initials & Date of Assessment			nt
			G	K	E	С
<u>Clien</u>	<u>t's Brief</u>					
3.1	Establish the structural design requirements and constraints as set out in the client brief.	Е				
3.2	Consider the design input from other disciplines and liaise where necessary to come up with an optimum solution for the client.	Е				
<u>Desig</u>	<u>m Process</u>					
3.3	Adopt soil parameters as established from site investigation and laboratory tests for foundation design and soil structural interactions.	Е				
3.4	Apply loading parameters due to gravitational, wind, earthquake and/or other environmental effects for superstructure and foundation designs.	Е				
3.5	Carry out manual and/or computer analysis for global and local load and stress distribution within a structural system.	С				
3.6	Apply design codes and standards to design structural members and foundation according to the types of structural materials used and the stresses derived from the analysis.	С				
3.7	Carry out site formation and slope stability designs associated with buildings, bridges and/or other structural forms.	Е				
3.8	Present design output in form of calculations, drawings and specifications.	Е				

4.	Site Experience	Code	ES initials and Date of Assessmen		ıd nent	
			G	K	Е	С
<u>The (</u>	Contract & Its Operation					
4.1	Know how all parties to a contract exercise their duties and responsibilities.	K				
4.2	Be familiar with the various parts of the contract document including the conditions of contract, specifications, bill of quantities and drawings.	K				
4.3	Know the procedures for the issue and/or receipt of work instructions and/or drawings and amendments.	K				
4.4	Be able to keep accurate daily records of events and instructions.	Е				
4.5	Read and coordinate drawings and/or implement work instructions.	С				
<u>Site I</u>	nvestigation					
4.6	Learn how to supervise the site investigation process and to witness the various insitu tests and the recovery of soil and rock samples.	Ε				
<u>Settir</u>	ng Out					
4.7	Learn how to establish the critical coordinates and dimensions for setting out the construction and how to control the construction to be within acceptable tolerance limits.	Ε				
<u>Site H</u>	<u>Formation and Slope Works</u>					
4.8	Learn how to ensure proper execution of site formation and slope works constructed in association with different types of structures.	Ε				
4.9	Know the different methods of construction for a particular type of structure and their advantages and limitations.	К				
4.10	Know the performance and cost of plants and equipment and their applications in site investigation, site formation, foundation and superstructure construction.	К				

4.	Site Experience	Code	ES Initials & Date of Assessm		tials & ssessme	ent
			G	K	Ε	С
<u>Planr</u>	ning and Programming					
4.11	Know how to plan and programme different construction activities and how to monitor and report the programme.	Ε				
Meas	urement					
4.12	Be able to measure, record and check work done for payment prepared.	Ε				
<u>Safet</u>	<u>v at Work</u>					
4.13	Have a critical approach to safety matters in the implementation process and to the observance of safe working practice.	С				
<u>Oual</u> i	ity Assurance and Control					
4.14	Know the principles of quality assurance and control to meet ISO standards.	K				
<u>Inspe</u>	ection of Materials and Workmanship					
4.15	Gain practical experience in carrying out site inspection of materials and workmanship.	С				

5.	Procurement, Tender & Contract Management	Code	ES Initials & Date of Assessment		ent	
			G	K	E	С
<u>Procurement</u>						
5.1	Know various types and methods of procurement for structural engineering works, including consultant services, material supplies, fabrication in factories and construction on sites.	К				
5.2	Learn how the procured products or services are assessed based on track records, job references, past performance, financial capabilities, tender prices and/ or fee proposals.	Ε				
<u>Tend</u>	er and Contract Management					
5.3	Gain practical experience from tender invitation to contract award and the subsequent post contract management.	Ε				
5.4	Know the selection of eligible tenderers, the preparation of tender documentation, the invitation of tender and the assessment of tender returns.	К				
5.5	Know the process of contract management including the control of expenditure, monitoring of progress and quality of works.	K				

Duties of Structural Engineer	Code		ES Initials & Date of Assessment			
		G	K	Ε	С	
Professionalism						
6.1 Know the statutory, contract and professional duties of structural engineer in addition to those covered by the Common Core Objectives.	Κ					