قسم الهندسة المدنية - مواد الامتحان التنافسي للعام الدراسي 2025-2026

دبلوم عالي

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ت	المادة الدراسية	الدرجة
.1	هندسة الاساسات	20 %
.2	ادارة مشاريع	20 %
.3	تكنولوجيا الخرسانة	15 %
.4	خرسانة مسلحة	15 %
.5	تحليل منشآت	15 %
.6	منشآت هيدروليكية	15 %

Competitive Exam - Post-Graduate (Diploma Program) – 2025-2026		
Foundation Engineering : by Braja M. Das & Nagaratnam Sivakugan		
Chapter	**Subject**	**Remarks**
Three	**Subsoil Exploration** Subsurface Exploration Program, Exploratory Borings in the Field, Procedures for Sampling Soil, Split-Spoon Sampling and Standard Penetration Test, Observation of Water Tables, Vane Shear Test, Cone Penetration Test,	
Six & Seven	**BEARING CAPACITY OF SHALLOW FOUNDATIONS** Methods of determining bearing capacity, Effect of soil compressibility, Footings with inclined or eccentric loads, Effect of water table on bearing capacity, Skempton's bearing capacity equation	
Nine	**SETTLEMENT OF BUILDINGS** Immediate settlement based on the theory of elasticity, Schmertmann's method (1978), Bjerrum's method for average settlement of layered clay soil, Primary consolidation settlement, Secondary consolidation settlement, Degree or rate of settlement	
Twelve	**Pile Foundations** Introduction, Pile Materials, Point Bearing and Friction Piles, Load Transfer Mechanism, Meyerhof's Method for Estimating Qp, Vesic's Method for Estimating Qp, Frictional Resistance (Qs) in Sand , Frictional (Skin) Resistance in Clay, Pile Load Tests , Elastic Settlement of Piles ,Negative Skin Friction, Group Piles, Group Efficiency , Ultimate Capacity of Group Piles in Saturated Clay, Elastic Settlement of Group Piles	
Sixteen	**Lateral Earth Pressure** Lateral Earth Pressure at Rest, Active Pressure, Rankine Active Earth Pressure, Coulomb's Active Earth Pressure, Passive Pressure, Rankine Passive Earth Pressure, Coulomb's Passive Earth Pressure	
Seventeen	**Retaining Walls** Gravity and Cantilever Check for Overturning, Check for Sliding Along the Base, Check for Bearing Capacity Failure	
Eighteen	**Sheet-Pile Walls** Cantilever Sheet-Pile Walls, Cantilever Sheet Piling Penetrating Sandy Soils, Cantilever Sheet Piling Penetrating Clay,	

Competitive Exam - Post-Graduate (Diploma Program) – 2025-2026		
Principles of construction management- By Roy Pilcher		
Chapter	**Subject**	**Remarks**
Nine	Critical path	
Nine	PERT method	
Ten	Precedence networks	
Ten	Line of balance method	
Eleven	Cost and the networks	
Twelve	The allocation of resources	

Competitive Exam - Post-Graduate (Diploma Program) – 2025-2026		
مؤيد نوري الخلف – هناء عبد يوسف By -تكنلوجيا الخرسانة		
Chapter	**Subject**	**Remarks**
One	Title - Portland Cement - Physical and chemical properties of cement - Hydration of cement - Tests of cement - Types of cement	
Three	Concrete Aggregate - Classification of aggregate - Properties of aggregate - Deleterious Substances of aggregate - Sieve analysis and Maximum aggregate size - Aggregates testes	
Four	Fresh concrete - Components of Fresh Concrete - Consistency and workability - Segregation and bleeding - Mixing and compaction of concrete	
Five	Strength of concrete - Types of Concrete Strength - Factors Affecting of concrete strength - Tests of hardened concrete	
Six	Elasticity , shrinkage, and creep in concrete	
Eight	Concrete Mix Design	

Competitive Exam - Post-Graduate (Diploma Program) – 2025-2026		
Reinforced Concrete Design of concrete structure by Arthur H. Nilson		
Chapter	**Subject**	**Remarks**
One & Two	Introduction- - Mechanical Properties of concrete - Concrete materials and its properties	
Three	Reinforcement details - Loading using ACI-Code. - Flexural Analysis and Design of Beams - Ultimate strength method (Introduction) - Singly Reinforced Rectangular Beams (Analysis and design) - ACI- Design requirement - Doubly Reinforced Rectangular Beams (Analysis and Design) - T-Beams (Analysis and Design)	
Four	Shear and Diagonal Tension in Beams - ACI Code Provisions for Shear Design - Design of Web Reinforcement	
Seven	Analysis and Design for Torsion - ACI-Code Provisions for Torsion design	
Eight	Design of Short Columns - Short columns subject to Axial Load and Bending	
Nine	Slender Columns	
Eleven	Indeterminate Beams - Analysis of Indeterminate Beams (Continuous Beams) - Design of Indeterminate Beams (Continuous Beams)	
Twelve	Analysis and Design of One-Way Slabs	

Competitive Exam - Post-Graduate (Diploma Program) – 2025-2026		
Structures Analysis- By R. C. Hibbeler		
Chapter	**Subject**	**Remarks**
Two	**Analysis of Statically Determinate Structures** - Determinacy and Stability - Applications of the Equations of Equilibrium	
Three	**Analysis of Statically Determinate Trusses** - Classification of Coplanar Trusses - The Method of Joints - Zero-Force Members - The Method of Sections	
Four	**Internal Loadings Developed in Structural Members** - Internal Loadings at a Specified Point - Shear and Moment Functions - Shear and Moment Diagrams for a Beam - Shear and Moment Diagrams for a Frame	
Eight	**Deflections Using Energy Methods** - Principle of Virtual Work - Method of Virtual Work: Trusses - Method of Virtual Work: Beams - Method of Virtual Work: Frames	
Ten	**Displacement Method for Analysis: Slope-Deflection Equations** - Displacement Method of Analysis: General Procedures - Slope-Deflection Equations - Analysis of Beams - Analysis of Frames: No Sidesway - Analysis of Frames: Sidesway	
Eleven	**Displacement Method of Analysis: Moment Distribution** - General Principles and Definitions - Moment Distribution for Beams - Stiffness-Factor Modifications - Moment Distribution for Frames: No Sidesway - Moment Distribution for Frames: Sidesway	

Competitive Exam - Post-Graduate (Diploma Program) – 2025-2026		
Hydraulic Structures - Subhash Kumar Garg		
Chapter	**Subject**	**Remarks**
One	Regulators - Discharge of Regulators with fully and partial opening of gate	
Two	Design of Floor - Bligh's Theory - Lane's Theory - Khosla's Theory	
Three	Transitions - Design of Warped Transition	
Four	Energy Dissipaters -Hydraulic Jump -Standard Stilling Basins	
Five	- Hydraulic Design - Culvert - Pipe and Flume Aqueduct - Siphon	
Six	Dams - Concrete Gravity Dam - Earth Dams	
Seven	Spillways -Design of Ogee Spillway	