

COASTAL SYSTEMS AND LANDSCAPES (OPTION)

3.1.3.1 COASTS AS NATURAL SYSTEMS	R	A	G
Systems concepts and their application to the development of coastal landscapes – inputs, outputs, energy, stores/components, flows/transfers, positive/negative feedback, dynamic equilibrium			
The concepts of landform and landscape and how related landforms combine to form characteristic landscapes			
3.1.3.2 SYSTEMS AND PROCESSES	R	A	G
Sources of energy in coastal environments: winds, waves (constructive and destructive), currents and tides			
Low energy and high energy coasts			
Sediment sources, cells and budgets			
Geomorphological processes: weathering, erosion, transportation, deposition			
Distinctively coastal processes: marine: erosion – hydraulic action, wave quarrying, corrasion/abrasion, cavitation, solution, attrition; transportation: traction, suspension (longshore/littoral drift) and deposition			
Distinctively coastal processes: sub-aerial: weathering, mass movement and runoff			
3.1.3.3 COASTAL LANDSCAPE DEVELOPMENT (UK EXAMPLES & BEYOND THE UK)	R	A	G
Origin and development of landforms and landscapes of coastal erosion: cliffs and wave cut platforms, cliff profile features including caves, arches and stacks; factors and processes in their development			
Origin and development of landforms and landscapes of coastal deposition: beaches, simple and compound spits, tombolos, offshore bars, barrier beaches and islands and sand dunes; factors and processes in their development			
Estuarine mudflat/saltmarsh environments and associated landscapes; factors and processes in their development			
Eustatic, isostatic and tectonic sea level change: major changes in sea level in the last 10,000 years			
Coastlines of emergence and submergence. Origin and development of associated landforms: raised beaches, marine platforms; rias, fjords, Dalmatian coasts			
Recent and predicted climatic change and potential impact on coasts			
The relationship between process, time, landforms and landscape in coastal settings			
3.1.3.4 COASTAL MANAGEMENT	R	A	G
Human intervention in coastal landscapes. Traditional approaches to coastal flood and erosion risk: hard and soft engineering			
Sustainable approaches to coastal flood risk and coastal erosion management: shoreline management/integrated coastal zone management			

3.1.3.5 QUANTITATIVE AND QUALITATIVE SKILLS	R	A	G
Quantitative and relevant qualitative skills, applicable within the theme landscape systems including: observation skills, measurement and geospatial mapping skills, data manipulation and statistical skills applied to field measurements			
3.1.3.6 CASE STUDIES	R	A	G
Case study(ies) of coastal environment(s) at a local scale to illustrate and analyse fundamental coastal processes, their landscape outcomes as set out above and engage with field data			
Case study(ies) of coastal environment(s) at a local scale to illustrate and analyse challenges represented in their sustainable management			
Case study of a contrasting coastal landscape beyond the UK to illustrate and analyse how it presents risks and opportunities for human occupation and development			
Case study of a contrasting coastal landscape beyond the UK to illustrate and evaluate human responses of resilience, mitigation and adaptation			