



EUROPEAN BOARD ASSESSMENT

ORAL AND MAXILLOFACIAL SURGERY / MAXILLOFACIAL SURGERY

Blueprint of Theoretical and Clinical Requirements

Structured Curriculum for the European Board Exit Examination

1. INTRODUCTION

Oral and Maxillofacial Surgery (OMFS) / Maxillofacial Surgery (MFS) is a surgical specialty concerned with the diagnosis, investigation, treatment, and rehabilitation of diseases, injuries, deformities, and defects affecting the **craniofacial skeleton, facial soft tissues, oral cavity, jaws, salivary glands, temporomandibular joint, head and neck region, and associated structures**.

The **European Board Examination in Oral and Maxillofacial Surgery / Maxillofacial Surgery** is intended to assess whether the candidate has acquired the knowledge, judgement, technical understanding, operative maturity, and professional standards expected of a surgeon ready for **independent specialist practice within the European healthcare context**.

The examination is designed to evaluate:

- advanced biomedical and surgical science knowledge
- diagnostic and investigative competence
- clinical reasoning and decision-making
- management of acute and complex surgical disease
- knowledge of operative techniques and complications
- multidisciplinary collaboration and leadership
- professionalism, ethics, communication, and patient safety

This blueprint defines the **theoretical and clinical requirements** expected of candidates and may be used by trainees, trainers, supervisors, national societies, and examiners as a reference framework.



2. FOUNDATIONAL SCIENTIFIC KNOWLEDGE

The candidate must demonstrate a **comprehensive and clinically applied understanding of the biomedical sciences** underpinning OMFS practice.

2.1 Applied Anatomy

The candidate must possess advanced knowledge of the surgical anatomy of the head, neck, craniofacial skeleton, and associated structures.

Craniofacial Skeleton

Advanced surgical anatomy of:

- craniofacial skeleton
- maxilla
- mandible
- zygomatic complex
- nasal skeleton
- frontal bone
- temporal bone
- cranial base

Knowledge must include:

- surgical landmarks
- anatomical variations
- age-related anatomical changes
- anatomy relevant to trauma, oncology, and reconstruction

Skull Base

Detailed understanding of:

- anterior skull base
- selected lateral skull base anatomy
- cribriform plate

- planum sphenoidale
- pterygopalatine fossa
- infratemporal fossa
- orbital apex

Orbit and Ocular Adnexa

Knowledge of:

- bony orbit and orbital walls
- orbital fissures and foramina
- extraocular muscles
- optic nerve and canal
- lacrimal apparatus
- ophthalmic vessels
- periorbital soft tissues

Temporomandibular Joint

Knowledge of:

- condyle and temporal components
- disc morphology and attachments
- capsule and ligaments
- vascular supply and innervation
- biomechanics of mandibular movement

Facial Nerve and Cranial Nerves

Advanced surgical anatomy of:

- facial nerve and extracranial branching pattern
- trigeminal nerve and divisions
- glossopharyngeal nerve
- vagus nerve
- accessory nerve
- hypoglossal nerve

Neck Spaces and Vascular Anatomy

Knowledge of:

- deep and superficial cervical fascia
- deep neck spaces
- carotid sheath
- arterial supply of head and neck
- venous drainage
- lymphatic drainage pathways

Salivary Glands and Ductal Systems

Knowledge of:

- parotid gland anatomy
- facial nerve relationships
- submandibular gland and Wharton's duct
- sublingual gland
- minor salivary glands
- ductal anatomy relevant to sialendoscopy

Airway

Detailed anatomy of:

- oral cavity
- nasal cavity
- pharynx
- larynx
- cervical trachea

Required knowledge includes anatomy relevant to:

- intubation
- tracheostomy
- cricothyroidotomy
- submental intubation

- airway obstruction in trauma, infection, and tumour
-

2.2 Embryology and Development

The candidate must understand craniofacial embryology and developmental biology and be able to relate developmental mechanisms to congenital deformity patterns.

Required knowledge includes:

- craniofacial development
- branchial arch derivatives
- palatogenesis
- mandibular growth
- maxillary growth
- TMJ development
- craniosynostosis mechanisms
- congenital craniofacial syndromes

The candidate must be able to link embryological processes to the clinical presentation of:

- cleft lip and palate
 - craniosynostosis
 - hemifacial microsomia
 - syndromic craniofacial malformations
 - dentofacial deformity
-

2.3 Physiology and Pathophysiology

The candidate must demonstrate a deep understanding of the physiological and pathological processes underlying OMFS disease and treatment.

Bone Biology

Knowledge must include:

- direct versus indirect bone healing
- role of stability in fracture and osteotomy healing

- tension and compression forces
- delayed union
- non-union
- malunion
- osteoradionecrosis
- osteomyelitis
- medication-related osteonecrosis of the jaw

Wound Healing

Knowledge must include:

- haemostasis
- inflammatory cascade
- proliferation and remodelling
- wound healing under tension
- effect of dead space, contamination, and poor vascularity

The candidate must understand the effect of:

- diabetes
- smoking
- malnutrition
- radiation
- immunosuppression

Oncology

Understanding must include:

- molecular carcinogenesis
- HPV-associated disease
- tumour microenvironment
- immunobiology
- genetic and epigenetic alterations
- tumour invasion and metastasis

Infection and Sepsis

Knowledge must include:

- odontogenic infection pathways
- deep neck space infection
- systemic inflammatory response
- septic shock
- necrotising fasciitis

Pain Mechanisms

Knowledge must include:

- nociceptive versus neuropathic pain
- peripheral and central sensitisation
- trigeminal neuralgia pathophysiology
- chronic post-surgical pain mechanisms



3. DIAGNOSTIC AND INVESTIGATIVE COMPETENCIES

The candidate must independently request, interpret, and integrate investigations into clinical decision-making.

3.1 Laboratory Testing

The candidate must understand the indications, interpretation, and limitations of:

- full blood count
- inflammatory markers
- coagulation profile
- renal and liver function tests
- tumour markers
- immunological testing including Sjögren's syndrome investigations
- microbiology and culture
- histopathology interpretation
- frozen section principles

Understanding must include:

- sensitivity and specificity
 - predictive values
 - false-positive and false-negative results
 - test limitations and clinical context
-

3.2 Radiological Imaging

The candidate must be competent in requesting and interpreting imaging relevant to OMFS practice.

Plain Radiography

Knowledge of:

- OPG
- occipitomenal views
- PA mandible
- plain skull and facial views where relevant
- radiation dose awareness

CT and CBCT

The candidate must understand:

- image acquisition principles
- slice thickness
- multiplanar reconstruction
- medical CT versus CBCT comparison
- indications in trauma, oncology, implantology, and deformity surgery

MRI

Knowledge of:

- soft tissue tumour assessment
- TMJ disc imaging
- salivary pathology
- skull base and perineural spread assessment

PET-CT and Nuclear Imaging

Applications include:

- oncology staging
- recurrence assessment
- sentinel node biopsy planning

Ultrasound

Knowledge of:

- FNAC guidance
- salivary gland assessment
- cervical lymph node assessment

Endoscopy

The candidate must understand principles and indications for:

- nasendoscopy
- sialendoscopy
- orbital endoscopy

Radiation Protection

The candidate must understand:

- radiation protection regulations
 - ALARA principle
 - justification and optimisation
 - legal responsibilities in radiological prescribing
-

3.3 Computer-Assisted Surgery and Virtual Planning

Required competencies include:

- integration of CT data with planning software
- virtual surgical planning
- design of surgical guides
- patient-specific implant design
- custom TMJ prostheses
- error recognition in digital planning
- intraoperative navigation systems

Applications include:

- trauma reconstruction
- orthognathic surgery
- oncology reconstruction
- craniofacial surgery

The candidate must understand the digital workflow, sources of planning error, and limitations of computer-assisted systems.



4. MANAGEMENT OF THE ACUTELY ILL PATIENT

All OMFS competencies are built upon safe management of acute surgical emergencies.

4.1 Trauma Team Integration

The candidate must demonstrate understanding of:

- ATLS / European Trauma Course principles
 - primary survey (ABCDE)
 - secondary survey
 - transfer to definitive care
 - prioritisation of life-threatening injuries
 - integration within the trauma team
-

4.2 Emergency Airway Management

The candidate must competently perform or demonstrate sound operative understanding of:

- cricothyroidotomy
- open tracheostomy
- percutaneous tracheostomy (knowledge)
- submental intubation
- airway management in paediatric patients

The candidate must also understand:

- difficult airway algorithms
 - airway management in panfacial trauma
 - airway compromise in infection and haemorrhage
-

4.3 Emergency Bleeding

The candidate must understand and manage:

- epistaxis, traumatic and spontaneous
 - post-operative haemorrhage
 - carotid blow-out
 - ballistic injury haemorrhage control
 - major vessel injury
 - blood product use and escalation
-

4.4 Sepsis and Infection

Knowledge must include:

- deep neck space infection
- odontogenic infection
- necrotising fasciitis
- surgical drainage principles
- critical care collaboration
- early recognition of systemic deterioration



5. TRAUMA MANAGEMENT

The candidate must demonstrate advanced competence in the assessment and management of facial trauma, including isolated and complex injury patterns.

5.1 Mandibular Fractures

Competencies include:

- fracture classification
- indications for ORIF versus conservative management
- condylar fracture controversies
- management of atrophic mandible
- complications and revision surgery

The candidate must understand:

- occlusal assessment
 - load-sharing and load-bearing fixation
 - management of infected fractures
 - postoperative malocclusion and non-union
-

5.2 Midface and Orbital Trauma

Required knowledge includes:

- Le Fort classification and limitations
- orbital volume and enophthalmos
- NOE fractures and canthal tendon repair
- retrobulbar haemorrhage management
- coronal flap exposure

The candidate must demonstrate knowledge of:

- zygomaticomaxillary complex trauma

- frontal sinus trauma
 - orbital floor and medial wall reconstruction
 - indications and timing of repair
 - multidisciplinary collaboration with ophthalmology and neurosurgery
-

5.3 Panfacial Trauma

The candidate must understand:

- sequencing strategies
- airway planning
- primary bone grafting
- multidisciplinary trauma centre work

This includes:

- top-down versus bottom-up reconstruction
- inside-out versus outside-in strategies
- restoration of facial width, height, and projection
- soft tissue management in high-energy trauma



6. HEAD AND NECK ONCOLOGY

The candidate must demonstrate competence in diagnosis, staging, resection planning, reconstruction, and multidisciplinary care of head and neck cancer.

6.1 Cancer Biology

Knowledge must include:

- epidemiology
- risk factors including tobacco, alcohol, and HPV
- TNM staging
- molecular biology
- tumour grading

The candidate must understand:

- field cancerisation
 - depth of invasion
 - nodal metastasis patterns
 - prognostic markers
-

6.2 Surgical Oncology

Competencies include:

- oral and oropharyngeal resection
- mandibulectomy, including rim and segmental techniques
- maxillectomy
- neck dissection, elective, selective, and radical
- sentinel node biopsy
- reconstruction planning

The candidate must understand:

- principles of oncologic margins
 - frozen section use
 - margin revision
 - functional consequences of resection
 - reconstruction selection according to defect class
-

6.3 Multimodal Therapy

Radiotherapy

Knowledge must include:

- IMRT principles
- side effects
- osteoradionecrosis

Chemotherapy and Immunotherapy

Knowledge must include:

- combined modality scheduling
- toxicities
- perioperative implications
- immunotherapy-related adverse events

The candidate must understand coordination of treatment within a multidisciplinary oncology pathway.

6.4 Palliative Care

The candidate must demonstrate knowledge of:

- symptom control
- pain management
- ethical discussions
- end-of-life communication

This includes:

- airway and swallowing compromise
- bleeding control in advanced disease
- nutrition and tracheostomy issues
- shared goals of care



7. RECONSTRUCTION

The candidate must demonstrate a comprehensive understanding of reconstructive principles across the full reconstructive ladder.

7.1 Reconstructive Ladder

The candidate must understand the indications, advantages, and limitations of:

- secondary intention
- skin graft
- local flap
- regional flap
- free tissue transfer

This includes reconstruction after:

- trauma
 - oncologic resection
 - congenital deformity correction
 - osteonecrosis and infection
-

7.2 Microvascular Reconstruction

Competencies include:

- flap harvest anatomy
- microvascular technique
- monitoring of free flaps
- management of flap compromise

The candidate must understand commonly used flaps, including:

- fibula free flap

- radial forearm free flap
- anterolateral thigh flap
- scapular and subscapular system flaps
- iliac crest flap where applicable

Knowledge must include:

- bony and soft tissue reconstruction
- osteotomies in free flap reconstruction
- donor site morbidity
- salvage strategies in threatened flaps



8. SALIVARY GLAND SURGERY

The candidate must demonstrate knowledge of benign and malignant salivary disease and the operative management of major salivary gland disorders.

Required competencies include:

- extra-capsular dissection
- superficial and total parotidectomy
- facial nerve monitoring
- sialolithiasis management
- sialendoscopy
- ranula management
- Frey's syndrome prevention

The candidate must also understand:

- FNAC and imaging pathways
- facial nerve preservation strategies
- management of salivary fistula
- malignant salivary neoplasms and indications for neck treatment



9. ORTHOGNATHIC AND FACIAL DEFORMITY SURGERY

The candidate must demonstrate competence in diagnosis, planning, and operative management of dentofacial deformity.

Competencies include:

- 2D and 3D planning
- model surgery
- BSSO technique
- Le Fort I–III osteotomies
- genioplasty
- stability hierarchy
- complication management

The candidate must understand:

- facial aesthetic analysis
- cephalometric planning
- occlusal planning
- relapse prevention
- neurosensory complications
- management of unfavourable splits and bleeding

9.1 Distraction Osteogenesis

Knowledge must include:

- biological principles
- mandibular and maxillary distraction
- alveolar distraction

The candidate must understand:

- latency, activation, and consolidation phases
 - vector planning
 - internal and external devices
 - complications and relapse
-

9.2 Obstructive Sleep Apnoea

The candidate must understand:

- sleep study interpretation
- maxillomandibular advancement
- multidisciplinary sleep medicine

This includes:

- patient selection
- upper airway assessment
- alternatives to skeletal surgery
- perioperative airway risk



10. CLEFT AND CRANIOFACIAL SURGERY

The candidate must demonstrate knowledge of cleft and craniofacial anomalies and the role of the maxillofacial surgeon within the multidisciplinary team.

Required knowledge includes:

- embryology and classification
- primary lip and palate repair
- alveolar bone grafting
- speech implications
- secondary rhinoplasty
- orthognathic surgery in cleft patients
- multidisciplinary cleft team role
- knowledge on the most frequent craniofacial syndromes: hemifacial microsomia, Crouzon syndrome, Apert syndrome
- knowledge on different forms of craniosynostosis

The candidate must understand:

- long-term growth implications
- velopharyngeal insufficiency
- timing of alveolar grafting
- secondary deformity correction
- syndromic airway issues



11. FACIAL AESTHETIC AND FUNCTIONAL SURGERY

The candidate must understand principles of facial aesthetic and functional surgery and associated risk management.

Competencies include:

- facelift and neck lift
- brow lift
- blepharoplasty
- rhinoplasty
- facial implants
- fillers and botulinum toxin
- complication management

The candidate must understand:

- facial analysis
- ageing changes
- indications and contraindications
- management of haematoma, asymmetry, skin compromise, infection, and functional deficits



12. TEMPOROMANDIBULAR JOINT AND FACIAL PAIN

The candidate must demonstrate knowledge of the full range of TMJ and facial pain management.

Competencies include:

- arthrocentesis
- arthroscopy
- open joint surgery
- alloplastic TMJ replacement
- neuropathic pain management
- multidisciplinary pain clinic participation

The candidate must also understand:

- internal derangement
- degenerative joint disease
- inflammatory arthritis
- ankylosis
- central sensitisation
- non-surgical and multidisciplinary treatment pathways



13. ORAL SURGERY AND PRE-PROSTHETIC SURGERY

The candidate must demonstrate competence in the broader oral surgery field relevant to specialist OMFS practice.

Required knowledge includes:

- surgical exodontia
- third molar surgery
- nerve injury management
- periapical surgery
- exposure of canines
- implant surgery, immediate and delayed
- bone grafting for implants
- replantation of teeth, principles and prognosis
- classifications of cysts, prognosis and treatment

The candidate must also understand:

- pre-prosthetic surgery
- management of oroantral communication
- benign jaw cysts and odontogenic lesions
- surgical anatomy relevant to implant placement
- management of peri-implant complications



14. LEADERSHIP AND MANAGEMENT

The candidate must demonstrate leadership and organisational abilities consistent with independent consultant practice.

The candidate must demonstrate:

- ability to run outpatient clinics
- ward round leadership
- operating list management
- MDT participation and leadership
- audit participation

The candidate must demonstrate understanding of:

- prioritisation and escalation
- theatre efficiency
- incident reporting
- governance processes
- supervision of junior colleagues



15. PROFESSIONALISM AND ETHICS

Professionalism and ethical conduct are core examination domains and must be demonstrated throughout all parts of the assessment.

Required knowledge includes:

- informed consent
- paediatric safeguarding
- end-of-life care
- shared decision making
- clear explanation of risks and benefits

Candidates must communicate:

- success rates
- complication risks
- recovery timelines
- alternative treatment options

The candidate must demonstrate:

- honesty and transparency
- respect for autonomy
- multidisciplinary professionalism

If procedural numbers are not met, competence may be demonstrated via:

- procedure-based assessments
- supervisor verification
- equivalent complex procedures



16. EXAMINATION EXPECTATIONS

The examination is intended to assess whether the candidate can function at the level of an independently practising specialist.

The candidate is expected to demonstrate:

- advanced biomedical knowledge
- independent clinical reasoning
- safe and defensible judgement
- emergency surgical competence
- digital surgical planning expertise
- multidisciplinary leadership
- ethical professionalism

17. CONCLUSION

The European Board Assessment requires demonstration of:

1. advanced biomedical knowledge
2. independent clinical reasoning
3. emergency surgical competence
4. digital surgical planning expertise
5. multidisciplinary leadership
6. ethical professionalism
7. commitment to lifelong learning

The successful candidate must function as an independent consultant Oral and Maxillofacial Surgeon capable of delivering safe, evidence-based, patient-centred care across the full spectrum of OMFS practice within the European healthcare context.