

Dental School Subjects and Topics

Year 1 (D1): HMS Pathways pre-clerkship (foundational biomedical + clinical skills)

- **Foundations of Biomedical Science**

- Biochemistry; cell biology; genetics & developmental biology
- Histology & microscopic anatomy
- Introductory pharmacology & pathology (mechanisms of disease)
- Gross anatomy (including head & neck) and basic physiology

- **Immunity in Defense and Disease**

- Core immunology and medical microbiology
- Immune-mediated and infectious disease themes (e.g., dermatology, rheumatology, allergy, infectious disease concepts)

- **Homeostasis I & II (integrated human pathophysiology)**

- Cardiovascular, respiratory, renal, gastrointestinal, endocrine, hematology
- Metabolism & nutrition; acid-base, fluids/electrolytes; thermoregulation; reproduction

- **Practice of Medicine (longitudinal)**

- Interviewing & communication; cultural humility; physical exam; clinical reasoning; interprofessional skills

- **Essentials of the Profession (block)**

- Population health, epidemiology/biostatistics, health policy, social medicine
- Ethics & professionalism

- **Assessments/skills**

- Anatomy labs; case-based/collaborative learning; OSCE-style skills checks
(Curricular elements and block names per HMS Pathways maps/course descriptions.) [Harvard Medical Education+1LWW](#)

Year 2 (D2): Transition to dental sciences & preclinical training at HSDM

- **Dental Basic Science Foundations**

- **Dental & craniofacial anatomy:** tooth morphology; occlusion; TMJ; mandibular movement
- **Oral histology & embryology; craniofacial development & genetics**
- **Oral microbiology & immunology;** cariology; biofilms; caries risk
- **Oral physiology:** saliva; mastication/deglutition; taste; pain pathways
- **Oral pathology & oral medicine:** mucosal pathology; systemic manifestations; lesions
- **Oral & maxillofacial radiology:** imaging physics/safety (ALARA), intraoral/panoramic/CBCT interpretation

- **Preclinical Simulation & Technique Courses**

- **Operative dentistry:** adhesive dentistry; composite/amalgam; isolation; finishing/polishing
- **Cariology & prevention:** risk-based prevention; fluoride; sealants; minimally invasive dentistry
- **Fixed prosthodontics:** tooth preparation principles; provisionals; impressions/digital scanning; occlusal schemes
- **Removable prosthodontics:** complete & partial denture design; RPD frameworks; jaw relations
- **Biomaterials:** dental ceramics, polymers, cements; bonding systems; CAD/CAM workflows
- **Periodontology (preclinical):** periodontal anatomy; instrumentation; scaling/root planing; surgery principles
- **Endodontics (preclinical):** access; canal instrumentation/obturation; asepsis
- **Orthodontic fundamentals:** growth & development; diagnosis; cephalometrics; space analysis
- **Pediatric dentistry foundations:** primary dentition anatomy; behavior guidance; pulp therapy
- **Oral surgery & local anesthesia:** pharmacology of anesthetics; exodontia principles; medical emergencies
- **Infection control & OSHA:** sterilization, PPE, sharps safety; emergency preparedness (BLS)
- **Evidence-based dentistry:** critical appraisal; intro biostats for dentistry

- **Digital dentistry:** intraoral scanning; design/milling basics; imaging integration
- **Treatment planning seminars:** comprehensive, risk-stratified planning; informed consent
(Year-by-year shift to HSDM dental sciences described by HSDM DMD program and handbook.) [Harvard School of Dental Medicine+1](#)

Year 3 (D3): Clinical care immersion & specialty rotations

- **Comprehensive Care Clinic (longitudinal):** diagnosis; treatment planning; prevention; recall/maintenance
- **Restorative/operative dentistry:** direct & indirect restorations; esthetics; occlusal therapy
- **Periodontology clinic:** non-surgical & selected surgical periodontal therapy; maintenance; risk management
- **Endodontics clinic:** vital/non-vital cases; single- and multi-rooted teeth; complications
- **Prosthodontics clinic:** fixed, removable, and implant-supported restorations; occlusion & function
- **Oral & maxillofacial surgery:** exodontia; minor oral surgery; sedation observation; management of complications
- **Oral medicine/TMD:** orofacial pain; mucosal disease; systemic disease interactions; pharmacotherapeutics
- **Orthodontics:** diagnosis & limited treatment/adjunctive care; interdisciplinary cases

- **Pediatric dentistry:** primary/mixed dentition care; behavior guidance; trauma; special techniques
- **Geriatric & special care dentistry:** complex medical conditions; accessibility/accommodations
- **Oral & maxillofacial radiology:** imaging acquisition/interpretation; CBCT cases; radiation protection
- **Emergency/urgent care clinic:** triage; acute pain/infection management
- **Community-based dentistry & public health rotations:** safety-net clinics, outreach, health equity focus
- **Practice management & ethics:** compliance, risk, jurisprudence, finance, quality improvement
(HSDM clinical emphasis and community experiences are outlined in School/Handbook resources; these build after the HMS phase.) [Harvard School of Dental Medicine+1](#)

Year 4 (D4): Advanced clinical practice, electives, externships, and capstone

- **Advanced comprehensive care:** full-mouth rehabilitation planning; interdisciplinary case management
- **Selectives/electives** across disciplines (e.g., esthetics, complex prosthodontics, implants, advanced endodontics, periodontics, oral medicine, orthodontics, pediatric dentistry)
- **Implant dentistry (restorative focus);** exposure to surgical planning & placement with faculty specialists
- **Interdisciplinary case conferences & specialty clinics:** coordinated care with OMFS/Perio/Pros/Endo/Ortho/Peds/Oral Med

- **Community-based externships/affiliations** (expanded service learning and public health dentistry)
- **Radiology & diagnostics (advanced):** CBCT-guided planning; complex interpretation
- **Practice transition & leadership:** business of dentistry, licensure preparation, jurisprudence, ethics
- **Scholarly/research requirement completion** (mentored project; dissemination where applicable)