

MALLA REDDY VISHWAVIDYAPEETH

(Deemed to be University)



School of Dental Sciences and Technology

CURRICULUM & SYLLABUS DOCUMENT

Master of Science (M.Sc.) in Aesthetic Dentistry

2-Year Undergraduate Programme

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1. Preamble, Need and Justification for the Programme

1.1 Preamble

Aesthetic (cosmetic) dentistry has grown rapidly as patients increasingly seek smile-design, tooth-whitening, veneer/laminate, digital-workflow (CAD/CAM, Digital Smile Design) and interdisciplinary esthetic treatments alongside conventional restorative and prosthodontic care. The M.Sc. Aesthetic Dentistry programme provides a two-year, NEP 2020-aligned, Choice Based Credit System (CBCS) postgraduate pathway for dental graduates to specialize in the science, art and clinical practice of aesthetic dentistry, integrating dental materials science, digital dentistry, interdisciplinary treatment planning, practice management and research, culminating in a clinical case portfolio and an independent dissertation.

1.2 Need for the Programme

- Rising patient demand for smile-design, whitening, veneer/laminate and digital-workflow aesthetic dental treatments has created strong demand for dentists with focused postgraduate training in aesthetic dentistry.
- Rapid advances in dental materials (ceramics, composites, adhesives), digital dentistry (CAD/CAM, DSD, 3D printing) and interdisciplinary esthetic techniques require structured postgraduate education beyond the undergraduate BDS curriculum.
- Dental practices, cosmetic-dentistry clinics, dental-materials and digital-dentistry companies increasingly seek dentists and academics with verified specialization in aesthetic dentistry.
- A structured programme aligned with international standards (AACD, GDC/DCI, ISO) strengthens quality, safety and professionalism in the fast-growing aesthetic-dentistry sector.

1.3 Justification

Malla Reddy Vishwavidyapeeth School of Dental Sciences and Technology, with its affiliated dental hospital and clinical infrastructure, is well positioned to deliver an outcome-based M.Sc. Aesthetic Dentistry programme that integrates strong foundations in dental materials and smile-design theory with hands-on training in veneers/laminates, whitening, CAD/CAM, interdisciplinary esthetic treatment planning, practice management, and research, culminating in a supervised clinical case portfolio and dissertation, in line with UGC/NEP 2020 postgraduate curriculum and credit norms and the Choice Based Credit System (CBCS).

2. Vision and Mission

2.1 Vision of the School

To be a nationally recognized center of excellence in Dental Sciences and Technology education, producing graduates who combine sound scientific foundations with hands-on clinical competence, professional ethics, and a commitment to advancing oral and dental healthcare.

2.2 Mission of the School

- M1: To impart a strong foundation in dental materials science and clinical dentistry integrated with hands-on laboratory and clinical practice.
- M2: To provide structured exposure to digital dentistry, esthetic and interdisciplinary treatment technologies through simulation, laboratory training and clinical postings.
- M3: To instill professional ethics, patient-safety consciousness and regulatory awareness essential to responsible dental practice.
- M4: To foster lifelong learning, a quality-improvement mindset and research aptitude to advance dental healthcare access and outcomes.

2.3 Vision of the Programme

To develop research-oriented, clinically accomplished Aesthetic Dentistry specialists capable of independently planning and delivering evidence-based, digitally enabled, interdisciplinary esthetic dental care.

2.4 Mission of the Programme

- PM1: Build strong foundations in dental materials, facial/dental esthetic analysis and smile-design principles.
- PM2: Develop competence in aesthetic restorative techniques - veneers, laminates, bonding, whitening and full-mouth esthetic rehabilitation.
- PM3: Provide practical exposure to digital dentistry (CAD/CAM, DSD, 3D printing) and interdisciplinary esthetic treatment planning (orthodontics, implants, periodontics, laser dentistry).
- PM4: Cultivate research, practice-management, ethics and documentation skills through biostatistics, a capstone dissertation, clinical portfolio and structured clinical postings.

3. Programme Educational Objectives (PEOs)

Within a few years of graduation, graduates of the M.Sc. Aesthetic Dentistry programme will:

PEO	Statement
PEO1	Apply advanced scientific and clinical knowledge of aesthetic dentistry to plan and execute smile-design and cosmetic dental treatments safely and effectively.
PEO2	Pursue successful careers as Aesthetic/Cosmetic Dentistry specialists, academic faculty or researchers, or progress to higher research (Ph.D./Fellowship) in dental esthetics.
PEO3	Demonstrate professional, ethical and patient-centred conduct in accordance with dental regulatory bodies (DCI/NDC, GDC) and international aesthetic-dentistry standards (AACD, ISO).
PEO4	Engage in lifelong learning and research to keep pace with evolving digital, material-science and minimally invasive aesthetic-dentistry technologies.

4. Governance Structure

The programme is governed through the standard multi-tier academic governance framework of Malla Reddy Vishwavidyapeeth, ensuring accountability, curriculum currency and quality assurance.

Body	Role
University / Board of Management	Apex governance; approves new programmes, policy and resource allocation.
Academic Council	Approves curriculum, regulations, examination rules and academic calendar for all programmes including this one.
Board of Studies, School of Dental Sciences and Technology	Designs and periodically revises the curriculum, course content, CO-PO-PSO mapping and question-paper templates; includes external subject experts and practicing aesthetic/cosmetic dentistry specialists.
Programme Committee / Departmental Academic Committee	Day-to-day academic planning, timetabling, internal-assessment moderation and course-file audit.
Examination Committee / Controller of Examinations (CoE) Office	Conducts internal and end-semester examinations, results processing and grievance redressal.
Programme Coordinator	Single point of accountability for curriculum delivery, student mentoring, clinical-posting liaison and outcome-based education (OBE) documentation.

Body	Role
Internal Quality Assurance Cell (IQAC)	Monitors quality benchmarks, accreditation readiness and continuous improvement through CO-PO attainment review.
Institutional Ethics Committee (IEC)	Reviews and clears research proposals/dissertations and clinical case documentation involving patient data or images.
Anti-Ragging, Grievance Redressal, ICC and Ethics Committees	Student welfare, safety and disciplinary oversight as per statutory requirement.

5. Academic Structure

- Programme: M.Sc. in Aesthetic Dentistry, Choice Based Credit System (CBCS) (Two-Year Postgraduate Programme, NEP 2020 compliant).
- Duration: 2 years (4 semesters).
- Academic Calendar: Two semesters per year, each of minimum 90 working days including internal assessment and examinations.
- Medium of Instruction: English.
- Mode: Full-time, on-campus with laboratory, simulation and clinical postings at an affiliated dental hospital.
- Total Credits: 80 (Semesters I-IV: 20 + 22 + 22 + 16), as per the revised Final Curriculum Structure.
- Category of Courses: Major Core (MC), Skill Enhancement Course (SEC), Value Added Course (VAC, SWAYAM/NPTEL), On-the-Job Training (OJT, clinical postings/portfolio) and Dissertation (DISS). The revised structure does not include a Minor Stream / Elective (MS) component, and the dissertation is a single DISS component rather than separate Research (RES) and Dissertation-defense (DISS) components.
- Teaching-Learning Modes: Lectures, laboratory/simulation practical's, clinical chairside training, digital-workflow (CAD/CAM/DSD) practical's, case-based learning, journal clubs and seminars.

5.1 Scheme of Multiple Entry and Exit (as per NEP 2020 / UGC Guidelines)

In accordance with NEP 2020 and the UGC Curriculum and Credit Framework for Postgraduate Programmes, the programme offers multiple entry and exit options. Credits earned at each stage are recorded on the Academic Bank of Credits (ABC) and are available for lateral re-entry or credit transfer, subject to University regulations:

Exit Stage	Duration	Minimum Credits	Award / Qualification
PG Diploma	After 1 Year (2 Semesters)	42 credits (Semester I + II)	PG Diploma in Aesthetic Dentistry
Master's Degree	After 2 Years (4 Semesters)	80 credits (Semesters I-IV)	M.Sc. in Aesthetic Dentistry

Students exiting with a PG Diploma may re-enter to complete the Master's degree within the maximum permissible period, subject to seat availability, academic eligibility norms and validity of credits in the ABC.

6. Eligibility Criteria for PG Admission

- Candidate must hold a Bachelor of Dental Surgery (BDS) degree recognized by the Dental Council of India (DCI)/National Dental Commission (NDC) or equivalent, from a recognized University, including satisfactory completion of a compulsory rotating internship.
- Minimum aggregate of 50% marks (relaxable for SC/ST/OBC and other reserved categories as per applicable State/UGC norms) in the qualifying examination.
- Admission shall be based on merit in the qualifying examination and/or any University/State-level entrance test, as notified by the University, followed by counseling as per Malla Reddy Vishwavidyalaya admission regulations.
- Provisional/permanent registration with the State Dental Council is required prior to commencing clinical postings, as per applicable regulatory norms.

7. Programme Outcomes (POs)

On completion of the programme, graduates will be able to:

PO	Title	Description
PO1	Foundational & Clinical Knowledge	Apply foundational and advanced clinical knowledge of dental materials, facial and dental esthetics relevant to aesthetic dentistry.
PO2	Smile Design & Facial Esthetic Analysis	Perform facial and smile analysis and apply smile-design principles (conventional and digital) to individualized treatment planning.
PO3	Aesthetic Restorative & Prosthodontic Techniques	Plan and perform veneers, laminates, bonding, whitening, inlays/onlays and full-mouth esthetic rehabilitation procedures.
PO4	Digital Dentistry & CAD/CAM Applications	Apply digital imaging, Digital Smile Design (DSD), CAD/CAM and 3D-printing technologies to aesthetic treatment workflows.
PO5	Interdisciplinary Esthetic Treatment Planning	Integrate orthodontic, implant, periodontal-plastic and laser-dentistry approaches into comprehensive interdisciplinary esthetic treatment plans.
PO6	Patient Communication, Psychology & Ethics	Apply patient psychology, communication and counseling skills, and ethical/legal principles, in aesthetic dental practice.
PO7	Research, Biostatistics & Evidence-Based Practice	Apply research methodology, biostatistics and critical appraisal of literature to evidence-based aesthetic-dentistry practice.
PO8	Practice Management & Professional Standards	Apply principles of dental practice management and international professional standards (AACD, GDC/DCI, ISO) in clinical practice.
PO9	Documentation, Quality & Case Portfolio Management	Maintain accurate clinical documentation, case photography and quality-assured case portfolios of aesthetic treatments.
PO10	Lifelong Learning & Professional Development	Demonstrate commitment to lifelong learning and continuing professional development in a rapidly evolving field.

7.1 Graduate Attributes (GAs) of the Programme

In addition to the programme-specific POs (Section 7) and PSOs (Section 8), the School defines ten institution-level Graduate Attributes (GAs) - generic qualities, values and transferable capabilities every graduate is expected to demonstrate, cascaded into every course through Course Outcomes and mapped to POs/PSOs for NEP 2020/UGC Outcome-Based Education (OBE) and accreditation review.

GA	Title	Description
GA1	Disciplinary & Interdisciplinary Knowledge	Demonstrate integrated foundational and applied knowledge across dental materials science, esthetics and clinical dentistry.
GA2	Critical Thinking & Problem Solving	Analyse esthetic, functional and interdisciplinary treatment-planning problems and propose evidence-based solutions.
GA3	Technical & Procedural Literacy	Select, use and evaluate aesthetic-dentistry materials, digital tools and clinical technologies competently and responsibly.
GA4	Research Aptitude & Evidence-Based Practice	Formulate research questions, apply biostatistics and scientific methods, and use evidence to inform aesthetic-dentistry practice.
GA5	Effective Communication	Communicate clearly, in speech and writing, with patients, colleagues and the public, and present technical/research work persuasively.
GA6	Teamwork & Collaborative Practice	Function effectively as a member of the multidisciplinary dental and esthetic-care team.
GA7	Ethical Reasoning & Professional Integrity	Apply dental ethics, informed-consent norms, professional codes of conduct and regulatory standards with integrity.
GA8	Patient-Centered & Social Responsibility	Prioritize patient safety, informed consent and equitable access to esthetic dental care in professional practice.
GA9	Quality Mindset & Innovation	Identify opportunities to apply quality-improvement, documentation and innovation practices to esthetic-dentistry care delivery.
GA10	Lifelong Learning & Self-Directed Growth	Engage independently and continuously in learning to keep pace with evolving materials, digital and esthetic-dentistry technologies.

7.2 Mapping of Graduate Attributes (GAs) to Programme Outcomes (POs)

H = High, M = Medium, '-' = Not directly addressed.

GA	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
GA1	H	M	M	M	M	-	-	-	-	M
GA2	M	M	M	M	H	-	M	-	M	-
GA3	M	M	H	H	M	-	-	M	M	M
GA4	-	-	-	-	-	-	H	-	M	H
GA5	-	M	-	-	-	H	-	-	-	-
GA6	-	-	-	-	M	M	-	M	-	-
GA7	-	-	-	-	-	M	-	H	M	-
GA8	-	M	-	-	M	H	-	M	-	-
GA9	-	-	M	M	-	-	M	M	H	M
GA10	-	-	M	M	-	-	M	M	M	H

8. Programme Specific Outcomes (PSOs)

At the end of the programme, graduates of M.Sc. Aesthetic Dentistry will specifically be able to:

PSO	Description
PSO1	Apply advanced knowledge of dental materials, facial/dental esthetic analysis and smile-design principles (conventional and digital) to individualized aesthetic-treatment planning.
PSO2	Independently, under supervision, perform veneers/laminates, bonding, whitening, CAD/CAM restorations and full-mouth esthetic rehabilitation procedures.
PSO3	Integrate interdisciplinary approaches — orthodontics, implants, periodontal-plastic surgery and laser dentistry — into comprehensive esthetic treatment plans, applying practice-management, ethical and international-standard (AACD/GDC/ISO) principles.
PSO4	Formulate, execute and present an independent dissertation/research project and maintain a professional clinical case portfolio, demonstrating research and practice readiness for aesthetic-dentistry specialization.

9. Credit Framework (as per UGC / NEP 2020)

The programme adopts the UGC Curriculum and Credit Framework for Postgraduate Programmes (CCFPG) issued under NEP 2020, within a Choice Based Credit System (CBCS). One credit corresponds to 1 hour/week of lecture (L) or tutorial (T), or 2 hours/week of practical (P), sustained over a 15-week semester, consistent with the L-T-P-C values recorded for every course in the source document. Research, dissertation and OJT/portfolio credits are computed on the National Credit Framework basis of approximately 30 notional learning hours = 1 credit.

As per the revised Final Curriculum Structure, the M.Sc. Aesthetic Dentistry curriculum totals 80 credits across 4 semesters (20 + 22 + 22 + 16; Section 18 and Annexure III).

Category	Full Form	Approx. Credits
MC	Major Core (12 courses)	45
SEC	Skill Enhancement Course (2 courses)	7
VAC	Value Added Course (SWAYAM/NPTEL) (2 courses)	4
OJT	On-the-Job Training (Clinical Postings / Portfolio) (4 components)	20
DISS	Dissertation (1 component; thesis, viva & final defense)	4
TOTAL		80

10. Course Outcomes (CO) - Programme Outcome (PO) Mapping

Every course in the curriculum defines Course Outcomes (COs) in its syllabus (Annexure IV). Course Outcomes are drawn directly from the Specific Learning Outcomes (SLOs) recorded against each unit in the source document, which already follows Bloom's-taxonomy action verbs (Explain, Analyze, Apply, Evaluate, and Integrate). Each CO is mapped to the relevant POs and PSOs on a 3-point scale (1 = Low, 2 = Medium, 3 = High correlation); the complete matrix for every course appears in Annexure V.

Illustrative CO-PO-PSO mapping for 'Fundamentals of Aesthetic Dentistry & Smile Design Principles':

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3	PSO4
CO1	-	3	-	-	-	3	-	-	-	-	3	-	-	-
CO2	-	3	-	-	-	-	-	-	-	-	3	-	-	-
CO3	-	3	-	-	-	-	-	-	-	-	3	-	-	-
CO4	-	3	-	3	-	-	-	-	-	-	3	-	-	-
CO5	3	-	3	-	3	-	-	3	-	-	3	3	3	-

11. Scheme of Assessment / Examination

11.1 Theory Courses

Component	Weight	Remarks
Internal Assessment	40 marks	Written tests, assignments, seminars, case discussions
End-Semester University Examination	60 marks	3-hour written examination covering the entire syllabus

11.2 Practical / Clinical Courses

Assessed as per the source Course Structure's Internal/External split for each course (typically 40 internal + 60 external = 100 marks), combining case presentation/clinical demonstration, spotters, portfolio/logbook review and viva-voce, per Annexure VI.

11.3 On-the-Job Training (OJT) / Clinical Postings & Portfolio

- Summer Clinical Posting / Chairsides Training (Semesters I, II and III) and Clinical Portfolio, Comprehensive Case Studies & On-the-Job Training (Semester IV) are assessed on external evaluation of the maintained case log/portfolio, supervisor assessment and viva-voce.
- A minimum prescribed number of supervised smile-makeover/aesthetic cases, each with informed patient consent for documentation and photography, is required for portfolio completion.

11.4 Value Added Courses (VAC) - SWAYAM/NPTEL

Assessed through the MOOC platform's own certification (completion certificate with proctored assessment where applicable), verified by the Programme Coordinator for credit recognition.

11.5 Capstone Research Dissertation & Final Presentation (Semester IV)

- Capstone Research Dissertation (Thesis, Viva & Final Defense) [MAD401, single 4-credit DISS component]: Internal 50 + External 150 (Thesis, Viva-Voce & Final Defense) = 200 marks, requiring Institutional Ethics Committee clearance and plagiarism-similarity compliance, evaluated before an internal-external examiner panel. There is no separate dissertation-defense course.

12. Grading System

SGPA = $\text{Sum (Credit} \times \text{Grade Point)} / \text{Sum(Credit)}$ for that semester. CGPA is computed cumulatively across all completed semesters.

Marks Range (%)	Grade	Grade Point	Description
90-100	O	10	Outstanding
80-89.99	A+	9	Excellent
70-79.99	A	8	Very Good
60-69.99	B+	7	Good
55-59.99	B	6	Above Average
50-54.99	C	5	Average
40-49.99	P	4	Pass
<40	F	0	Fail
Absent	AB	0	Absent

13. Progression and Examination Rules

- A minimum of 80% attendance in each course (theory and practical) is mandatory for eligibility to appear in the End-Semester Examination.
- A minimum of 90% attendance is mandatory during clinical postings (OJT).
- A student must secure a minimum of 'P' grade (40% aggregate, with at least 40% in the end-semester component) to pass a course; a student who fails must reappear as per University regulations.
- Promotion to the next semester is automatic; however, a student has to earn 80% of the credits offered up to the end of the IInd semester to be eligible for admission to Semester III.
- Malpractice in examinations shall be dealt with as per the University's Unfair Means regulations, ranging from cancellation of the examination to debarment.
- The Capstone Research Dissertation (Semester IV) must be submitted with a plagiarism similarity index within University-prescribed limits and is subject to viva-voce evaluation by an internal-external examiner panel.
- Registration/provisional registration with the State Dental Council must remain valid throughout all clinical postings and the clinical-portfolio component.

14. Infrastructure, Laboratories and Learning Resources

14.1 Classroom and General Infrastructure

- Smart classrooms with interactive panels/projectors, Wi-Fi enabled campus, and seminar halls for guest lectures and case discussions.
- Central biomedical/dental-science laboratories shared with other dental programmes.
- Access to the University's affiliated dental hospital's outpatient, prosthodontic, conservative dentistry and oral-surgery departments for clinical postings and case-portfolio development.

14.2 Dedicated Aesthetic Dentistry Laboratories

Laboratory	Key Equipment / Facilities
Pre-Clinical Simulation Laboratory	Dental simulation units/manikins, typodonts, magnification loupes, hand and rotary instruments for pre-clinical skill-building.
Aesthetic Restorative & Clinical Dentistry Clinic	Dental chairs with curing lights, composite/ceramic restorative kits, isolation systems (rubber dam), shade-matching systems.
Digital Smile Design & Photography Studio	DSLR cameras with ring/twin flash, intraoral cameras, DSD software, facial/smile-analysis workstations.
CAD/CAM & 3D Printing Laboratory	Intraoral/desktop scanners, CAD design workstations, milling units, 3D printers for models, surgical guides and provisional restorations.
Dental Materials & Biomaterials Laboratory	Testing and demonstration setup for ceramics, composites, adhesives and cements; material-handling and mixing stations.
Laser Dentistry Laboratory	Soft- and hard-tissue dental lasers with safety equipment for demonstration and supervised skill-training.
Whitening & Bleaching Demonstration Unit	In-office and take-home whitening systems, shade guides, photography setup for pre/post documentation.

Laboratories and clinics are shared/co-located with the University's affiliated dental hospital, subject to institutional biosafety, radiation and infection-control protocols.

15. Library and Digital Resources

- Central Library with a dedicated Aesthetic/Cosmetic Dentistry and dental-materials-science collection of textbooks, reference books and journals.
- Subscription to e-resources such as Pub Med/PubMed Central, Science Direct and relevant dental/esthetic-dentistry databases (as per University subscriptions).
- Access to NDLI (National Digital Library of India), NPTEL/SWAYAM MOOCs and DELNET inter-library loan network.
- Access to professional-society guideline repositories (AACD, GDC/DCI, ISO) for evidence-based aesthetic-dentistry practice.
- Anti-plagiarism software (Turnitin) for dissertation screening.
- Institutional Repository for storage of student dissertations, clinical portfolios and faculty publications.

16. Faculty and Supportive Staff

Faculty strength and qualifications shall comply with UGC Regulations, applicable Dental Council of India (DCI)/National Dental Commission (NDC) norms, and the deemed university's cadre/ratio norms.

Position	Minimum Qualification	Indicative Strength
Professor / Head of School	MDS/Ph.D. in Prosthodontics, Conservative Dentistry & Endodontics, or a relevant aesthetic-dentistry discipline, with 10+ years' experience	1
Associate Professors	MDS/Ph.D. (relevant dental specialty) with aesthetic/cosmetic-dentistry specialization	2
Assistant Professors	MDS / M.Sc. Aesthetic Dentistry with relevant qualification	3

Position	Minimum Qualification	Indicative Strength
Visiting/Adjunct Clinical Faculty	Practicing aesthetic/cosmetic dentists, orthodontists, implantologists and periodontics for guest lectures and clinical mentoring	As required
Dental Laboratory Technicians / Technical Assistants	Diploma/Degree in dental mechanics with CAD/CAM and 3D-printing experience	2
Administrative & Support Staff	Office superintendent, clinic attendants, librarian support staff, patient coordinator	As per University norms

17. ICT and Simulation Infrastructure

- Campus-wide high-speed Wi-Fi/LAN backbone with a dedicated server room hosting the Learning Management System (LMS).
- Digital Smile Design (DSD) and CAD/CAM software suites for pre-clinical and clinical skill-building.
- Simulation laboratory with dental manikins/typodonts and part-task trainers for pre-clinical procedural training.
- Digital photography and intraoral scanning systems for case documentation and portfolio development.
- Centralized system for academic administration (examinations, results, attendance) integrated with a student-facing mobile/web portal, and a digital case-portfolio/logbook system.

18. Semester-wise Curriculum Structure (Scheme of Instruction)

Course codes follow the pattern MAD<Semester><SINo> (e.g., MAD101 = M.Sc. Aesthetic Dentistry, Semester I, Course 1). Categories: MC = Major Core, SEC = Skill Enhancement Course, VAC = Value Added Course, OJT = On-the-Job Training, DISS = Dissertation. The revised structure has no Minor Stream / Elective (MS) courses, and the dissertation is a single 4-credit DISS component (there is no separate RES category).

1st Year - Semester I

Code	Course Title	Category	L	T	P	C
MAD101	Fundamentals of Aesthetic Dentistry, Smile Design & Digital Imaging	MC	1	0	2	3
MAD102	Dental Materials in Cosmetic Restorations: Ceramics, Composites, Adhesives & Clinical Applications	MC	1	0	2	3
MAD103	Research Methodology, Biostatistics & Research Planning	MC	3	0	0	3
MAD104	Patient Communication, Psychology & Counseling in Aesthetic Dentistry	SEC	1	1	1	3
MAD105	SWAYAM/NPTEL Course	VAC	2	-	-	2
MAD106	Summer Clinical Posting / Chairside Training	OJT	-	-	6	6
	TOTAL					20

1st Year - Semester II

Code	Course Title	Category	L	T	P	C
MAD201	Adhesive Esthetic Dentistry: Veneers, Laminates, Bonding & Tooth Whitening	MC	1	0	3	4
MAD202	CAD/CAM Esthetics & 3D Printing Applications	MC	1	0	3	4
MAD203	Occlusion, Full-Mouth Rehabilitation & Implant Esthetics	MC	1	0	3	4
MAD204	Aesthetic Orthodontics & Soft-Tissue Esthetics	MC	1	1	2	4
MAD205	Summer Clinical Posting / Chairside Training	OJT	-	-	6	6
	TOTAL					22

2nd Year - Semester III

Code	Course Title	Category	L	T	P	C
MAD301	Advanced Smile Design & Esthetic Restorative Dentistry	MC	1	0	3	4
MAD302	Interdisciplinary & Advanced Esthetic Dentistry	MC	1	0	3	4
MAD303	Practice Management, Legal, Ethical & Professional Aspects of Aesthetic Dentistry	MC	2	0	2	4
MAD304	Scientific Writing, Research Communication & Journal Club	SEC	2	0	2	4
MAD305	SWAYAM/NPTEL Course	VAC	2	-	-	2
MAD306	Clinical Posting / Advanced Chairside Training	OJT	-	-	4	4
	TOTAL					22

2nd Year - Semester IV

Code	Course Title	Category	L	T	P	C
MAD401	Capstone Research Dissertation (Thesis, Viva & Final Defense)	DISS	-	-	-	4
MAD402	Clinical Portfolio, Comprehensive Case Studies & On-the-Job Training	OJT	-	-	-	4
MAD403	International Standards in Aesthetic Dentistry: AACD, GDC & ISO	MC	2	0	2	4
MAD404	Advanced Clinical Case Presentation & Professional Practice	MC	0	0	4	4
	TOTAL					16

ANNEXURES

Annexure I - Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and Graduate Attributes (GAs)

A. Programme Outcomes

PO	Title	Description
PO1	Foundational & Clinical Knowledge	Apply foundational and advanced clinical knowledge of dental materials, facial and dental esthetics relevant to aesthetic dentistry.
PO2	Smile Design & Facial Esthetic Analysis	Perform facial and smile analysis and apply smile-design principles (conventional and digital) to individualized treatment planning.
PO3	Aesthetic Restorative & Prosthodontic Techniques	Plan and perform veneers, laminates, bonding, whitening, inlays/onlays and full-mouth esthetic rehabilitation procedures.
PO4	Digital Dentistry & CAD/CAM Applications	Apply digital imaging, Digital Smile Design (DSD), CAD/CAM and 3D-printing technologies to aesthetic treatment workflows.
PO5	Interdisciplinary Esthetic Treatment Planning	Integrate orthodontic, implant, periodontal-plastic and laser-dentistry approaches into comprehensive interdisciplinary esthetic treatment plans.
PO6	Patient Communication, Psychology & Ethics	Apply patient psychology, communication and counselling skills, and ethical/legal principles, in aesthetic dental practice.
PO7	Research, Biostatistics & Evidence-Based Practice	Apply research methodology, biostatistics and critical appraisal of literature to evidence-based aesthetic-dentistry practice.
PO8	Practice Management & Professional Standards	Apply principles of dental practice management and international professional standards (AACD, GDC/DCI, ISO) in clinical practice.
PO9	Documentation, Quality & Case Portfolio Management	Maintain accurate clinical documentation, case photography and quality-assured case portfolios of aesthetic treatments.
PO10	Lifelong Learning & Professional Development	Demonstrate commitment to lifelong learning and continuing professional development in a rapidly evolving field.

B. Programme Specific Outcomes

PSO	Description
PSO1	Apply advanced knowledge of dental materials, facial/dental esthetic analysis and smile-design principles (conventional and digital) to individualized aesthetic-treatment planning.
PSO2	Independently, under supervision, perform veneers/laminates, bonding, whitening, CAD/CAM restorations and full-mouth esthetic rehabilitation procedures.
PSO3	Integrate interdisciplinary approaches — orthodontics, implants, periodontal-plastic surgery and laser dentistry — into comprehensive esthetic treatment plans, applying practice-management, ethical and international-standard (AACD/GDC/ISO) principles.
PSO4	Formulate, execute and present an independent dissertation/research project and maintain a professional clinical case portfolio, demonstrating research and practice readiness for aesthetic-dentistry specialization.

C. Graduate Attributes

GA	Title	Description
GA1	Disciplinary & Interdisciplinary Knowledge	Demonstrate integrated foundational and applied knowledge across dental materials science, esthetics and clinical dentistry.
GA2	Critical Thinking & Problem Solving	Analyse esthetic, functional and interdisciplinary treatment-planning problems and propose evidence-based solutions.
GA3	Technical & Procedural Literacy	Select, use and evaluate aesthetic-dentistry materials, digital tools and clinical technologies competently and responsibly.
GA4	Research Aptitude & Evidence-Based Practice	Formulate research questions, apply biostatistics and scientific methods, and use evidence to inform aesthetic-dentistry practice.
GA5	Effective Communication	Communicate clearly, in speech and writing, with patients, colleagues and the public, and present technical/research work persuasively.
GA6	Teamwork & Collaborative Practice	Function effectively as a member of the multidisciplinary dental and esthetic-care team.
GA7	Ethical Reasoning & Professional Integrity	Apply dental ethics, informed-consent norms, professional codes of conduct and regulatory standards with integrity.
GA8	Patient-Centered & Social Responsibility	Prioritize patient safety, informed consent and equitable access to esthetic dental care in professional practice.
GA9	Quality Mindset & Innovation	Identify opportunities to apply quality-improvement, documentation and innovation practices to esthetic-dentistry care delivery.
GA10	Lifelong Learning & Self-Directed Growth	Engage independently and continuously in learning to keep pace with evolving materials, digital and esthetic-dentistry technologies.

Annexure II - Minimum Credit Distribution (Category-wise)

Category	Full Form	Approx. Credits
MC	Major Core (12 courses)	45
SEC	Skill Enhancement Course (2 courses)	7
VAC	Value Added Course (SWAYAM/NPTEL) (2 courses)	4
OJT	On-the-Job Training (Clinical Postings / Portfolio) (4 components)	20
DISS	Dissertation (1 component; thesis, viva & final defense)	4
MS	Minor Stream / Elective (discontinued in the revised curriculum)	0
TOTAL		80

Annexure IV - Detailed Course Syllabi (Unit-wise) with Course Outcomes for Every Course

1. Fundamentals of Aesthetic Dentistry, Smile Design & Digital Imaging [MAD101]

L-T-P-C: 1 - 0 - 2 - 3 | Category: MC | Semester: 1

Course Description

This course provides a comprehensive foundation in aesthetic dentistry with emphasis on smile analysis, facial harmony, dental proportions, and principles of smile design. It integrates biological, artistic, and technological aspects of aesthetics to enable evidence-based diagnosis, treatment planning, and execution of aesthetic dental procedures. The course bridges theoretical concepts with clinical and laboratory applications, preparing students for advanced aesthetic practice.

Course Objectives

- To understand principles and scope of aesthetic dentistry
- To analyze facial and dental esthetic parameters
- To apply smile design principles in clinical planning
- To evaluate aesthetic dental materials and techniques
- To develop practical skills in aesthetic analysis and documentation

Course Content with Specific Learning Outcomes (SLOs)

Unit I: Introduction to Aesthetic Dentistry

SLO: Explain basic concepts of dental aesthetics.

Evolution and scope of aesthetic dentistry; Psychology of smile and patient perception; Components of facial and dental aesthetics.

Unit II: Facial Analysis & Smile Parameters

SLO: Analyze facial and smile dynamics.

Facial proportions and symmetry; Smile line, lip dynamics, buccal corridors; Static vs dynamic smile analysis.

Unit III: Dental Proportions & Esthetic Guidelines

SLO: Apply dental aesthetic principles.

Golden proportion, RED proportion; Tooth morphology, size, shape, and color; Midline, axial inclinations, incisal embrasures.

Unit IV: Smile Design Techniques

SLO: Evaluate smile design approaches.

Conventional smile design; Digital Smile Design (DSD) concepts; Mock-ups and wax-ups in aesthetic planning.

Unit V: Aesthetic Materials & Treatment Planning

SLO: Integrate materials into aesthetic planning.

Aesthetic restorative materials overview; Interdisciplinary aesthetic treatment planning; Ethical considerations in cosmetic dentistry.

Unit VI: Principles of Digital Imaging

SLO: Explain fundamentals of digital imaging.

Basics of digital photography; Camera types, lenses, sensors, and settings; Image formats, resolution, and color management.

Unit VII: Dental Photography in Aesthetic Dentistry

SLO: Apply clinical photography techniques.

Intraoral and extra oral photographic protocols; Lighting, backgrounds, and retractors; Standardization for aesthetic documentation.

Unit VIII: Smile Analysis & Digital Esthetic Parameters

SLO: Analyze smile components digitally.

Facial proportions and reference lines; Dental midline, smile line, gingival architecture; Static and dynamic smile analysis.

Unit IX: Digital Smile Design (DSD) Concepts

SLO: Apply DSD principles.

Principles and workflow of Digital Smile Design; Use of DSD software and applications; Digital mock-ups and patient communication.

Unit X: CAD-Based Planning & Digital Workflow

SLO: Evaluate digital integration.

CAD tools in aesthetic dentistry; Integration with restorative and prosthetic planning; Ethical, legal, and data protection considerations.

Recommended References & Learning Resources

- Goldstein R.E., Esthetics in Dentistry
- Coachman C., Digital Smile Design
- Magne P. & Belser U., Bonded Porcelain Restorations
- Fradeani M., Esthetic Rehabilitation in Fixed Prosthodontics
- Journal of Esthetic and Restorative Dentistry
- AACD Smile Design Guidelines

Course Outcomes (COs)

CO1: Explain basic concepts of dental aesthetics, including evolution and scope of aesthetic dentistry; Psychology of smile and patient perception; Components of facial and dental aesthetics.

CO2: Analyze facial and smile dynamics, including facial proportions and symmetry; Smile line, lip dynamics, buccal corridors; Static vs dynamic smile analysis.

CO3: Apply dental aesthetic principles, including golden proportion, RED proportion; Tooth morphology, size, shape, and color; Midline, axial inclinations, incisal embrasures.

CO4: Evaluate smile design approaches, including conventional smile design; Digital Smile Design (DSD) concepts; Mock-ups and wax-ups in aesthetic planning.

CO5: Integrate materials into aesthetic planning, including aesthetic restorative materials overview; Interdisciplinary aesthetic treatment planning; Ethical considerations in cosmetic dentistry.

CO6: Explain fundamentals of digital imaging, including basics of digital photography; Camera types, lenses, sensors, and settings; Image formats, resolution, and color management.

CO7: Apply clinical photography techniques, including intraoral and extra oral photographic protocols; Lighting, backgrounds, and retractors; Standardization for aesthetic documentation.

CO8: Analyze smile components digitally, including facial proportions and reference lines; Dental midline, smile line, gingival architecture; Static and dynamic smile analysis.

CO9: Apply DSD principles, including principles and workflow of Digital Smile Design; Use of DSD software and applications; Digital mock-ups and patient communication.

CO10: Evaluate digital integration, including CAD tools in aesthetic dentistry; Integration with restorative and prosthetic planning; Ethical, legal, and data protection considerations.

2. Dental Materials in Cosmetic Restorations: Ceramics, Composites, Adhesives & Clinical Applications [MAD102]

L-T-P-C: 1 - 0 - 2 - 3 | Category: MC | Semester: 1

Course Description

This course focuses on aesthetic dental materials used in cosmetic restorations, emphasizing ceramics, resin composites, and adhesive systems. It integrates material science with clinical decision-making to achieve optimal esthetics, durability, and biological compatibility in cosmetic dentistry.

Course Objectives

- To understand aesthetic restorative materials and their properties
- To analyze material selection for cosmetic restorations
- To apply adhesive principles in aesthetic dentistry
- To evaluate clinical performance and longevity of restorations

Course Content with Specific Learning Outcomes (SLOs)

Unit I: Aesthetic Dental Materials

SLO: Identify cosmetic restorative materials.

Ceramics, composites, hybrid materials; Optical properties: translucency, fluorescence.

Unit II: Dental Ceramics

SLO: Explain ceramic systems.

Feldspathic, lithium disilicate, zirconia; Indications and limitations.

Unit III: Resin Composites

SLO: Apply composite selection principles.

Microhybrid, nanocomposite systems; Layering techniques.

Unit IV: Adhesive Dentistry

SLO: Analyze bonding mechanisms.

Etch-and-rinse, self-etch systems; Enamel vs dentin bonding.

Unit V: Clinical Performance

SLO: Evaluate long-term success.

Wear, marginal integrity, failures; Laboratory Component; Assessment Strategy; References; Anusavice KJ, Phillips' Science of Dental Materials; Magne & Belser, Bonded Porcelain Restorations; Journal of Esthetic & Restorative Dentistry.

Course Outcomes (COs)

CO1: Identify cosmetic restorative materials, including ceramics, composites, hybrid materials; Optical properties: translucency, fluorescence.

CO2: Explain ceramic systems, including feldspathic, lithium disilicate, zirconia; Indications and limitations.

CO3: Apply composite selection principles, including microhybrid, nanocomposite systems; Layering techniques.

CO4: Analyze bonding mechanisms, including etch-and-rinse, self-etch systems; Enamel vs dentin bonding.

CO5: Evaluate long-term success, including wear, marginal integrity, failures; Laboratory Component; Assessment Strategy; References; Anusavice KJ, Phillips' Science of Dental Materials; Magne & Belser, Bonded Porcelain Restorations; Journal of Esthetic & Restorative Dentistry.

3. Research Methodology, Biostatistics & Research Planning [MAD103]

L-T-P-C: 3 - 0 - 0 - 3 | Category: MC | Semester: 1

Course Description

This course introduces the fundamental concepts of research methodology and biostatistics relevant to dental and aesthetic clinical research. It equips students with skills to design research studies, analyze data, interpret scientific literature, and apply evidence-based decision-making in aesthetic dentistry. Emphasis is placed on ethical research practices, statistical reasoning, and scientific writing.

Course Objectives

- To understand the principles of scientific research and study design
- To develop skills in formulating research questions and hypotheses
- To apply basic biostatistical tools for data analysis
- To interpret and critically evaluate dental research literature
- To promote ethical conduct and integrity in research

Course Content with Specific Learning Outcomes (SLOs)

Unit I: Introduction to Research Methodology

SLO: Explain research fundamentals.

Definition and types of research; Quantitative vs qualitative research; Clinical, laboratory, and translational research in dentistry; Research problem identification and objectives.

Unit II: Study Design and Protocol Development

SLO: Design research studies.

Observational and experimental study designs; Clinical trials and in vitro studies; Sample size determination; Variables, bias, and confounding factors.

Unit III: Biostatistics – Descriptive Statistics

SLO: Apply descriptive statistical tools.

Data types and data presentation; Measures of central tendency and dispersion; Graphical representation of data; Introduction to statistical software.

Unit IV: Biostatistics – Inferential Statistics

SLO: Analyze and interpret data.

Probability and hypothesis testing; Parametric and non-parametric tests; Correlation and regression analysis; Interpretation of p-values and confidence intervals.

Unit V: Ethics, Scientific Writing & Evidence-Based Dentistry

SLO: Demonstrate ethical and scholarly research behavior.

Research ethics and informed consent; Institutional Ethics Committee and ICMR guidelines; Plagiarism and research misconduct; Scientific writing: thesis, papers, and abstracts; Systematic reviews and evidence-based practice.

Recommended References & Learning Resources

- Hulley, S.B. et al., Designing Clinical Research
- Dawson & Trapp, Basic and Clinical Biostatistics
- Kothari, C.R., Research Methodology: Methods and Techniques
- ICMR National Ethical Guidelines for Biomedical Research
- CONSORT, STROBE, PRISMA reporting guidelines
- Selected articles from Journal of Dental Research, Journal of Esthetic and Restorative Dentistry

Course Outcomes (COs)

CO1: Explain research fundamentals, including definition and types of research; Quantitative vs qualitative research; Clinical, laboratory, and translational research in dentistry; Research problem identification and objectives.

CO2: Design research studies, including observational and experimental study designs; Clinical trials and in vitro studies; Sample size determination; Variables, bias, and confounding factors.

CO3: Apply descriptive statistical tools, including data types and data presentation; Measures of central tendency and dispersion; Graphical representation of data; Introduction to statistical software.

CO4: Analyze and interpret data, including probability and hypothesis testing; Parametric and non-parametric tests; Correlation and regression analysis; Interpretation of p-values and confidence intervals.

CO5: Demonstrate ethical and scholarly research behavior, including research ethics and informed consent; Institutional Ethics Committee and ICMR guidelines; Plagiarism and research misconduct; Scientific writing: thesis, papers, and abstracts; Systematic reviews and evidence-based practice.

4. Patient Communication, Psychology & Counseling in Aesthetic Dentistry [MAD104]

L-T-P-C: 1 - 1 - 1 - 3 | Category: SEC | Semester: 1

Course Description

This course focuses on the psychological, behavioral, and communication aspects essential for successful aesthetic dental practice. It emphasizes understanding patient expectations, managing dental anxiety, counseling for aesthetic treatments, and delivering ethical, empathetic, and patient-centered care. The course integrates theoretical foundations of psychology with practical communication skills relevant to aesthetic dentistry.

Course Objectives

- To understand psychological factors influencing patient perception of aesthetics
- To develop effective verbal and non-verbal communication skills
- To manage patient anxiety and unrealistic expectations
- To apply counseling strategies in aesthetic treatment planning
- To promote ethical and professional patient interactions

Course Content with Specific Learning Outcomes (SLOs)

Unit I: Psychology of Aesthetic Perception

SLO: Explain psychological aspects of dental aesthetics.

Self-image, facial attractiveness, and smile perception; Cultural and social influences on aesthetic expectations; Psychological impact of dental appearance; Body image and self-esteem in dental patients.

Unit II: Communication Skills in Aesthetic Dentistry

SLO: Demonstrate effective communication.

Verbal and non-verbal communication; Active listening and empathy; Building trust and rapport; Communication barriers and solutions.

Unit III: Patient Behavior and Anxiety Management

SLO: Analyze patient behavior.

Dental anxiety and phobia; Behavioral management techniques; Stress management and relaxation strategies; Managing difficult or demanding patients.

Unit IV: Counseling and Ethical Decision-Making

SLO: Apply counseling strategies.

Informed consent and shared decision-making; Managing unrealistic expectations; Ethical considerations in aesthetic treatment; Documentation and medico-legal aspects.

Unit V: Professionalism and Practice Image

SLO: Exhibit professional conduct.

Chairside manners and professionalism; Communication in digital and social media platforms; Handling complaints and feedback; Patient satisfaction and long-term relationships.

Recommended References & Learning Resources

- Newton T., Asimakopoulou K. Behavioral Sciences for Dentistry
- Freeman R. Communication in Dental Practice
- ADA Guide to Patient Communication
- Journal of Esthetic and Restorative Dentistry
- Articles from Patient Education and Counseling

Course Outcomes (COs)

CO1: Explain psychological aspects of dental aesthetics, including self-image, facial attractiveness, and smile perception; Cultural and social influences on aesthetic expectations; Psychological impact of dental appearance; Body image and self-esteem in dental patients.

CO2: Demonstrate effective communication, including verbal and non-verbal communication; Active listening and empathy; Building trust and rapport; Communication barriers and solutions.

CO3: Analyze patient behavior, including dental anxiety and phobia; Behavioral management techniques; Stress management and relaxation strategies; Managing difficult or demanding patients.

CO4: Apply counseling strategies, including informed consent and shared decision-making; Managing unrealistic expectations; Ethical considerations in aesthetic treatment; Documentation and medico-legal aspects.

CO5: Exhibit professional conduct, including chairside manners and professionalism; Communication in digital and social media platforms; Handling complaints and feedback; Patient satisfaction and long-term relationships.

5. SWAYAM/NPTEL Course [MAD105]

L-T-P-C: 2 - - - - 2 | Category: VAC | Semester: 1

Course Description

A self-paced online course selected from SWAYAM/NPTEL (or an equivalent MOOC platform) in a subject relevant to aesthetic dentistry, digital dentistry, biomaterials, communication, entrepreneurship or a related enrichment area, completed as a University-approved Value Added Course.

Course Objectives

- To enable independent, self-directed learning through a nationally recognized MOOC platform.
- To broaden exposure to a subject relevant to aesthetic dentistry or professional development beyond the core curriculum.
- To develop digital-learning and self-assessment skills.
- To earn a verifiable certification recognized for credit transfer.

Course Content with Specific Learning Outcomes (SLOs)

Unit I: Course Selection & Enrolment

SLO: Identify a SWAYAM/NPTEL course relevant to the programme; complete enrolment and orientation.

Unit II: Self-Paced Learning

SLO: Complete the prescribed online modules, assignments and quizzes of the selected MOOC.

Unit III: Assessment & Certification

SLO: Complete the platform's proctored/online assessment and obtain the course completion certificate.

Unit IV: Reflection & Application

SLO: Prepare a short reflective note on how the course content applies to aesthetic dentistry practice.

Course Outcomes (COs)

CO1: Identify a SWAYAM/NPTEL course relevant to the programme; complete enrolment and orientation.

CO2: Complete the prescribed online modules, assignments and quizzes of the selected MOOC.

CO3: Complete the platform's proctored/online assessment and obtain the course completion certificate.

CO4: Prepare a short reflective note on how the course content applies to aesthetic dentistry practice.

6. Summer Clinical Posting / Chairside Training [MAD106]

L-T-P-C: - - - - 6 | Category: OJT | Semester: 1

NOTE: No detailed unit-wise syllabus was supplied for this component in the source curriculum document. The units below are drafted in the same pattern as the Semester II component (MAD205) and are flagged for review and formal approval by the Board of Studies.

Course Description

A structured, full-time chairside clinical posting during the inter-semester break, providing supervised exposure to aesthetic-dentistry outpatient workflow, patient consultation, and assisting in restorative/cosmetic procedures under a registered dental practitioner.

Course Objectives

- To provide early, structured chairside clinical exposure in an aesthetic-dentistry practice or department.
- To develop patient-interaction, chairside-assistance and case-documentation skills.
- To familiarize students with clinic/practice workflow, infection control and instrument handling.

Course Content with Specific Learning Outcomes (SLOs)

Unit I: Orientation

SLO: Clinic/department orientation, infection-control protocols, patient-record systems.

Unit II: Chairside Assistance

SLO: Supervised chairside assistance in consultation, examination and minor aesthetic procedures.

Unit III: Case Documentation

SLO: Maintenance of a case log/portfolio with photographs (with consent) and clinical notes.

Laboratory / Practical Component

- Chairside assistance in aesthetic consultations
- Instrument and material preparation
- Patient photography and case documentation

Course Outcomes (COs)

CO1: Clinic/department orientation, infection-control protocols, patient-record systems.

CO2: Supervised chairside assistance in consultation, examination and minor aesthetic procedures.

CO3: Maintenance of a case log/portfolio with photographs (with consent) and clinical notes.

7. Adhesive Esthetic Dentistry: Veneers, Laminates, Bonding & Tooth Whitening [MAD201]

L-T-P-C: 1 - 0 - 3 - 4 | Category: MC | Semester: 2

Course Description

This course provides comprehensive knowledge and hands-on training in veneer and laminate restorations with a strong emphasis on adhesive dentistry. It covers material selection, tooth preparation designs, bonding protocols, clinical execution, and long-term success of aesthetic veneers. The course integrates theoretical foundations with practical skill development for predictable aesthetic outcomes.

Course Objectives

- To understand principles of veneer and laminate restorations
- To evaluate materials used for aesthetic veneers
- To apply bonding protocols for enamel and dentin
- To develop clinical skills in veneer preparation and cementation
- To analyze failures and complications in veneer restorations

Course Content with Specific Learning Outcomes (SLOs)

Unit I: Principles of Veneers & Laminates

SLO: Explain foundational concepts.

History and evolution of veneers; Indications and contraindications; Esthetic principles and smile analysis; Case selection and treatment planning.

Unit II: Materials for Veneers

SLO: Differentiate veneer materials.

Porcelain veneers; Lithium disilicate and ceramic laminates; Composite veneers; Optical properties and shade matching.

Unit III: Tooth Preparation & Bonding Concepts

SLO: Apply preparation and bonding principles.

Enamel vs dentin bonding; Preparation designs: window, feather-edge, incisal overlap; Isolation techniques; Adhesive systems and surface treatments.

Unit IV: Cementation Protocols

SLO: Apply clinical bonding techniques.

Try-in procedures; Resin cements: light-cure vs dual-cure; Cementation steps and finishing; Post-cementation care.

Unit V: Failures, Complications & Maintenance

SLO: Analyze veneer failures.

Debonding and fracture; Marginal discoloration; Occlusal considerations; Repair vs replacement strategies.

Unit VI: Tooth Discoloration

SLO: Classify and explain discoloration.

Intrinsic vs extrinsic stains; Age-related discoloration; Drug-induced and systemic causes; Trauma and developmental defects.

Unit VII: Chemistry of Bleaching Agents

SLO: Explain bleaching mechanisms.

Hydrogen peroxide and carbamide peroxide; Concentration, pH, and activation methods; Role of light, heat, and laser activation; Oxygen free radical mechanisms.

Unit VIII: Whitening & Bleaching Systems

SLO: Differentiate bleaching techniques.

In-office power bleaching; Dentist-supervised home bleaching; OTC whitening products; Non-vital bleaching techniques.

Unit IX: Biological Effects & Safety

SLO: Analyze biological responses.

Effects on enamel, dentin, and pulp; Tooth sensitivity and gingival irritation; Effects on restorations and bonding; Safety guidelines and contraindications.

Unit X: Post-Bleaching Care & Complications

SLO: Manage complications.

Management of sensitivity; Color stability and relapse; Maintenance protocols; Ethical and legal considerations.

Recommended References & Learning Resources

- Magne P., Belser U. Bonded Porcelain Restorations in the Anterior Dentition
- Pascal Magne. Adhesive Dentistry
- Rosenstiel, Land, Fujimoto – Contemporary Fixed Prosthodontics
- ? Journal of Esthetic and Restorative Dentistry
- ? International Journal of Esthetic Dentistry
- ? Journal of Esthetic and Restorative Dentistry

Course Outcomes (COs)

CO1: Explain foundational concepts, including history and evolution of veneers; Indications and contraindications; Esthetic principles and smile analysis; Case selection and treatment planning.

CO2: Differentiate veneer materials, including porcelain veneers; Lithium disilicate and ceramic laminates; Composite veneers; Optical properties and shade matching.

CO3: Apply preparation and bonding principles, including enamel vs dentin bonding; Preparation designs: window, feather-edge, incisal overlap; Isolation techniques; Adhesive systems and surface treatments.

CO4: Apply clinical bonding techniques, including try-in procedures; Resin cements: light-cure vs dual-cure; Cementation steps and finishing; Post-cementation care.

CO5: Analyze veneer failures, including debonding and fracture; Marginal discoloration; Occlusal considerations; Repair vs replacement strategies.

CO6: Classify and explain discoloration, including intrinsic vs extrinsic stains; Age-related discoloration; Drug-induced and systemic causes; Trauma and developmental defects.

CO7: Explain bleaching mechanisms, including hydrogen peroxide and carbamide peroxide; Concentration, pH, and activation methods; Role of light, heat, and laser activation; Oxygen free radical mechanisms.

CO8: Differentiate bleaching techniques, including in-office power bleaching; Dentist-supervised home bleaching; OTC whitening products; Non-vital bleaching techniques.

CO9: Analyze biological responses, including effects on enamel, dentin, and pulp; Tooth sensitivity and gingival irritation; Effects on restorations and bonding; Safety guidelines and contraindications.

CO10: Manage complications, including management of sensitivity; Color stability and relapse; Maintenance protocols; Ethical and legal considerations.

8. CAD/CAM Esthetics & 3D Printing Applications [MAD202]

L-T-P-C: 1 - 0 - 3 - 4 | Category: MC | Semester: 2

Course Description

This course provides advanced knowledge of digital workflows in aesthetic dentistry with emphasis on CAD/CAM systems and 3D printing technologies. It covers digital impression techniques, virtual smile design integration, material selection, and fabrication of aesthetic restorations using subtractive and additive manufacturing. Hands-on training enables students to design, mill, and print restorations with high precision.

Course Objectives

- To understand digital workflows in aesthetic dentistry
- To study CAD/CAM hardware and software systems
- To apply digital design principles for aesthetic restorations
- To evaluate materials used in milling and 3D printing
- To fabricate and assess digitally manufactured restorations

Course Content with Specific Learning Outcomes (SLOs)

Unit I: Digital Dentistry Fundamentals

SLO: Explain digital workflows.

Evolution of digital dentistry; Intraoral scanning technologies; Digital impressions vs conventional impressions; Data acquisition and file formats (STL, OBJ).

Unit II: CAD Systems in Esthetic Dentistry

SLO: Apply CAD principles.

CAD software for smile design and restorations; Virtual articulation and occlusal analysis; Digital wax-up and esthetic analysis; Integration with DSD systems.

Unit III: CAM & Milling Technologies

SLO: Describe CAM processes.

Subtractive manufacturing principles; Milling units (4-axis, 5-axis systems); Milling strategies and bur selection; Post-milling finishing and glazing.

Unit IV: 3D Printing in Esthetic Dentistry

SLO: Apply additive manufacturing.

3D printing technologies (SLA, DLP, FDM); Printable resins and ceramics; Printing parameters and accuracy; Post-processing and curing protocols.

Unit V: Clinical Applications & Quality Control

SLO: Evaluate digital restorations.

Crowns, veneers, inlays, onlays; Digital dentures and aligners; Fit evaluation and marginal accuracy; Errors, limitations, and troubleshooting.

Recommended References & Learning Resources

- Miyazaki T. CAD/CAM in Dentistry
- Mörmann W.H. Digital Dentistry
- Rekow D. Digital Design and Manufacturing in Dentistry
- Journal of Esthetic and Restorative Dentistry
- International Journal of Computerized Dentistry

Course Outcomes (COs)

CO1: Explain digital workflows, including evolution of digital dentistry; Intraoral scanning technologies; Digital impressions vs conventional impressions; Data acquisition and file formats (STL, OBJ).

CO2: Apply CAD principles, including CAD software for smile design and restorations; Virtual articulation and occlusal analysis; Digital wax-up and esthetic analysis; Integration with DSD systems.

CO3: Describe CAM processes, including subtractive manufacturing principles; Milling units (4-axis, 5-axis systems); Milling strategies and bur selection; Post-milling finishing and glazing.

CO4: Apply additive manufacturing, including 3D printing technologies (SLA, DLP, FDM); Printable resins and ceramics; Printing parameters and accuracy; Post-processing and curing protocols.

CO5: Evaluate digital restorations, including crowns, veneers, inlays, onlays; Digital dentures and aligners; Fit evaluation and marginal accuracy; Errors, limitations, and troubleshooting.

9. Occlusion, Full-Mouth Rehabilitation & Implant Esthetics [MAD203]

L-T-P-C: 1 - 0 - 3 - 4 | Category: MC | Semester: 2

Course Description

This course focuses on the principles of occlusion and functional harmony as they relate to aesthetic dentistry and full-mouth rehabilitation. It integrates occlusal concepts, temporomandibular joint (TMJ) dynamics, functional analysis, and esthetic treatment planning. Emphasis is placed on diagnosis, occlusal equilibration, and rehabilitation strategies to achieve long-term functional and esthetic stability.

Course Objectives

- To understand fundamental principles of occlusion and function
- To analyze occlusal schemes and their impact on aesthetics
- To diagnose occlusal disharmonies and functional disorders

- To plan full-mouth aesthetic rehabilitation cases
- To integrate function, esthetics, and patient comfort

Course Content with Specific Learning Outcomes (SLOs)

Unit I: Fundamentals of Occlusion

SLO: Explain occlusal principles.

Static and dynamic occlusion; Centric relation vs centric occlusion; Occlusal planes and curves; Determinants of occlusion.

Unit II: Functional Anatomy & TMJ

SLO: Describe mandibular function.

Anatomy and biomechanics of TMJ; Muscles of mastication; Mandibular movements; Occlusal interferences.

Unit III: Occlusal Concepts in Esthetic Dentistry

SLO: Apply occlusal concepts.

Anterior guidance and posterior disclusion; Mutually protected occlusion; Group function occlusion; Occlusion in veneers and crowns.

Unit IV: Full-Mouth Rehabilitation

SLO: Analyze rehabilitation protocols.

Diagnosis and treatment planning; Vertical dimension assessment; Sequencing of full-mouth cases; Provisional restorations and occlusal splints.

Unit V: Functional Evaluation & Maintenance

SLO: Evaluate treatment outcomes.

Occlusal adjustment procedures; Post-rehabilitation follow-up; Management of parafunctional habits; Long-term stability and maintenance.

Recommended References & Learning Resources

- Dawson P.E. Functional Occlusion: From TMJ to Smile Design
- Okeson J.P. Management of Temporomandibular Disorders and Occlusion
- Shillingburg H.T. Fundamentals of Fixed Prosthodontics
- Journal of Prosthetic Dentistry
- Journal of Esthetic and Restorative Dentistry

Course Outcomes (COs)

CO1: Explain occlusal principles, including static and dynamic occlusion; Centric relation vs centric occlusion; Occlusal planes and curves; Determinants of occlusion.

CO2: Describe mandibular function, including anatomy and biomechanics of TMJ; Muscles of mastication; Mandibular movements; Occlusal interferences.

CO3: Apply occlusal concepts, including anterior guidance and posterior disclusion; Mutually protected occlusion; Group function occlusion; Occlusion in veneers and crowns.

CO4: Analyze rehabilitation protocols, including diagnosis and treatment planning; Vertical dimension assessment; Sequencing of full-mouth cases; Provisional restorations and occlusal splints.

CO5: Evaluate treatment outcomes, including occlusal adjustment procedures; Post-rehabilitation follow-up; Management of parafunctional habits; Long-term stability and maintenance.

10. Aesthetic Orthodontics & Soft-Tissue Esthetics [MAD204]

L-T-P-C: 1 - 1 - 2 - 4 | Category: MC | Semester: 2

Course Description

This course introduces the principles and clinical applications of aesthetic orthodontics with a focus on adult patients seeking minimally visible orthodontic treatment. It covers contemporary orthodontic appliances, biomechanics for aesthetic tooth movement, interdisciplinary treatment planning, and integration of orthodontics with restorative and cosmetic dentistry. Emphasis is placed on case selection, esthetic outcomes, and patient-centered treatment planning.

Course Objectives

- To understand the fundamentals of orthodontics relevant to aesthetic dentistry
- To familiarize students with aesthetic orthodontic appliances and techniques
- To analyze orthodontic considerations in cosmetic and restorative cases
- To integrate orthodontic planning with veneers, crowns, and smile design
- To develop awareness of limitations, risks, and ethical considerations

Course Content with Specific Learning Outcomes (SLOs)

Unit I: Fundamentals of Orthodontics for Aesthetic Dentistry

SLO: Explain orthodontic principles.

Biology of tooth movement; Orthodontic forces and biomechanics; Alignment, leveling, and space management; Esthetic considerations in orthodontic treatment.

Unit II: Aesthetic Orthodontic Appliances

SLO: Identify orthodontic appliances.

Clear aligners (Invisalign and similar systems); Ceramic and self-ligating brackets; Lingual orthodontics – principles and indications; Advantages and limitations of aesthetic appliances.

Unit III: Orthodontics in Smile Design

SLO: Apply orthodontics in esthetic planning.

Orthodontic correction prior to veneers and crowns; Space redistribution for restorative dentistry; Midline correction and smile symmetry; Orthodontics vs restorative camouflage.

Unit IV: Interdisciplinary Aesthetic Orthodontics

SLO: Analyze interdisciplinary cases.

Orthodontics with periodontics and prosthodontics; Orthodontic considerations in implant esthetics; Adult orthodontics and relapse prevention; Retention protocols.

Unit V: Ethics, Communication & Treatment Planning

SLO: Evaluate ethical and clinical decision-making.

Patient expectations and counseling; Limitations of aesthetic orthodontics; Informed consent and medico-legal aspects; Long-term esthetic stability.

Recommended References & Learning Resources

- Proffit W.R., Fields H.W. Contemporary Orthodontics
- Graber L., Vanarsdall R. Orthodontics: Current Principles and Techniques
- Boyd R.L. Esthetic Orthodontics and Aligner Therapy
- Journal of Clinical Orthodontics

- American Journal of Orthodontics and Dentofacial Orthopedics
- Aligner manufacturer clinical manuals (Invisalign, ClearCorrect)

Course Outcomes (COs)

CO1: Explain orthodontic principles, including biology of tooth movement; Orthodontic forces and biomechanics; Alignment, leveling, and space management; Esthetic considerations in orthodontic treatment.

CO2: Identify orthodontic appliances, including clear aligners (Invisalign and similar systems); Ceramic and self-ligating brackets; Lingual orthodontics – principles and indications; Advantages and limitations of aesthetic appliances.

CO3: Apply orthodontics in esthetic planning, including orthodontic correction prior to veneers and crowns; Space redistribution for restorative dentistry; Midline correction and smile symmetry; Orthodontics vs restorative camouflage.

CO4: Analyze interdisciplinary cases, including orthodontics with periodontics and prosthodontics; Orthodontic considerations in implant esthetics; Adult orthodontics and relapse prevention; Retention protocols.

CO5: Evaluate ethical and clinical decision-making, including patient expectations and counseling; Limitations of aesthetic orthodontics; Informed consent and medico-legal aspects; Long-term esthetic stability.

11. Summer Clinical Posting / Chairside Training [MAD205]

L-T-P-C: - - - - - 6 | Category: OJT | Semester: 2

Course Description

A structured, full-time chairside clinical posting during the inter-semester break, providing supervised exposure to aesthetic-dentistry outpatient workflow, patient consultation, and assisting in restorative/cosmetic procedures under a registered dental practitioner.

Course Objectives

- To provide early, structured chairside clinical exposure in an aesthetic-dentistry practice or department.
- To develop patient-interaction, chairside-assistance and case-documentation skills.
- To familiarize students with clinic/practice workflow, infection control and instrument handling.

Course Content with Specific Learning Outcomes (SLOs)

Unit I: Orientation

SLO: Clinic/department orientation, infection-control protocols, patient-record systems.

Unit II: Chairside Assistance

SLO: Supervised chairside assistance in consultation, examination and minor aesthetic procedures.

Unit III: Case Documentation

SLO: Maintenance of a case log/portfolio with photographs (with consent) and clinical notes.

Laboratory / Practical Component

- Chairside assistance in aesthetic consultations
- Instrument and material preparation
- Patient photography and case documentation

Course Outcomes (COs)

CO1: Clinic/department orientation, infection-control protocols, patient-record systems.

CO2: Supervised chairside assistance in consultation, examination and minor aesthetic procedures.

CO3: Maintenance of a case log/portfolio with photographs (with consent) and clinical notes.

12. Advanced Smile Design & Esthetic Restorative Dentistry [MAD301]

L-T-P-C: 1 - 0 - 3 - 4 | Category: MC | Semester: 3

Course Description

This course focuses on advanced concepts in smile design integrating both digital technologies and traditional manual techniques. Students will learn to analyze facial esthetics, occlusion, and dental morphology to design harmonious smiles. Emphasis is placed on interdisciplinary approaches combining prosthodontics, orthodontics, periodontics, and restorative dentistry for optimal esthetic outcomes.

Course Objectives

- To apply advanced smile design principles using digital and manual approaches
- To analyze facial esthetics, dental proportions, and occlusion in smile planning
- To integrate interdisciplinary considerations in smile rehabilitation
- To develop workflow strategies from diagnosis to final restoration
- To enhance documentation and communication skills for patient-centered treatment

Course Content with Specific Learning Outcomes (SLOs)

Unit I: Fundamentals of Smile Design

SLO: Understand facial and dental esthetic principles.

Dental proportions, golden ratio, and smile arcs; Gingival display, midline, and lip dynamics; Manual vs digital assessment techniques.

Unit II: Digital Smile Design (DSD)

SLO: Apply digital tools for smile planning.

Photography, video documentation, and 3D imaging; CAD software for smile simulation; Virtual mock-ups and patient consultation.

Unit III: Manual Smile Design Techniques

SLO: Apply traditional manual methods.

Diagnostic wax-ups and silicone guides; Mock-ups and provisional restorations; Integration with restorative and periodontal planning.

Unit IV: Interdisciplinary Integration

SLO: Analyze complex esthetic cases.

Orthodontic, prosthodontic, and periodontal considerations; Managing anterior esthetic zone challenges; Case-based discussion on workflow and sequencing.

Unit V: Patient Communication and Documentation

SLO: Evaluate outcomes and present treatment plans.

Esthetic outcome evaluation (PES/WES scores); Clinical photography and video documentation; Informed consent and patient education.

Unit VI: Materials for Esthetic Restorations

SLO: Identify and select appropriate materials.

Composites, ceramics, glass ionomers, hybrid materials; Adhesives and bonding systems; Shade selection and characterization.

Unit VII: Anterior Esthetic Techniques

SLO: Apply anterior restorative principles.

Direct composite veneers; Layering, contouring, and finishing techniques; Management of diastema, discoloration, and minor malformations.

Unit VIII: Posterior Esthetic Techniques

SLO: Apply posterior restorative principles.

Occlusal considerations in esthetic restorations; Posterior composite restorations and indirect inlays/onlays; Minimally invasive preparation techniques.

Unit IX: Adhesive and Minimally Invasive Dentistry

SLO: Integrate adhesive principles into restorative planning.

Etch-and-rinse vs self-etch systems; Bonding to enamel, dentin, and restorative substrates; Biomimetic restorative approaches.

Unit X: Clinical Evaluation and Outcome Assessment

SLO: Evaluate clinical results and patient satisfaction.

Longevity, wear, and failure analysis; Esthetic evaluation tools (shade guides, digital assessment); Documentation and case presentation.

Recommended References & Learning Resources

- Coachman C., Digital Smile Design: A Step-by-Step Guide
- Garber D. & Belser U., Restorative and Esthetic Dentistry
- Goldstein R., Esthetic Dentistry in Clinical Practice
- Journal of Esthetic and Restorative Dentistry
- Clinical case studies and CAD/CAM software manuals

Course Outcomes (COs)

CO1: Understand facial and dental esthetic principles, including dental proportions, golden ratio, and smile arcs; Gingival display, midline, and lip dynamics; Manual vs digital assessment techniques.

CO2: Apply digital tools for smile planning, including photography, video documentation, and 3D imaging; CAD software for smile simulation; Virtual mock-ups and patient consultation.

CO3: Apply traditional manual methods, including diagnostic wax-ups and silicone guides; Mock-ups and provisional restorations; Integration with restorative and periodontal planning.

CO4: Analyze complex esthetic cases, including orthodontic, prosthodontic, and periodontal considerations; Managing anterior esthetic zone challenges; Case-based discussion on workflow and sequencing.

CO5: Evaluate outcomes and present treatment plans, including esthetic outcome evaluation (PES/WES scores); Clinical photography and video documentation; Informed consent and patient education.

CO6: Identify and select appropriate materials, including composites, ceramics, glass ionomers, hybrid materials; Adhesives and bonding systems; Shade selection and characterization.

CO7: Apply anterior restorative principles, including direct composite veneers; Layering, contouring, and finishing techniques; Management of diastema, discoloration, and minor malformations.

CO8: Apply posterior restorative principles, including occlusal considerations in esthetic restorations; Posterior composite restorations and indirect inlays/onlays; Minimally invasive preparation techniques.

CO9: Integrate adhesive principles into restorative planning, including etch-and-rinse vs self-etch systems; Bonding to enamel, dentin, and restorative substrates; Biomimetic restorative approaches.

CO10: Evaluate clinical results and patient satisfaction, including longevity, wear, and failure analysis; Esthetic evaluation tools (shade guides, digital assessment); Documentation and case presentation.

13. Interdisciplinary & Advanced Esthetic Dentistry [MAD302]

L-T-P-C: 1 - 0 - 3 - 4 | Category: MC | Semester: 3

Course Description

This course integrates knowledge from orthodontics, periodontics, prosthodontics, and restorative dentistry to achieve optimal esthetic outcomes. It focuses on treatment planning, multidisciplinary case coordination, and clinical decision-making to restore harmony, function, and esthetics in complex dental cases.

Course Objectives

- To understand interdisciplinary principles in esthetic dentistry
- To develop skills in case assessment and collaborative treatment planning
- To integrate restorative, periodontal, and orthodontic interventions
- To evaluate esthetic and functional outcomes in complex cases
- To enhance clinical decision-making in multidisciplinary treatment

Course Content with Specific Learning Outcomes (SLOs)

Unit I: Principles of Interdisciplinary Dentistry

SLO: Understand multidisciplinary approaches.

Role of restorative, orthodontic, periodontic, and prosthodontic disciplines; Integration of esthetic principles in treatment planning; Patient-centered evaluation.

Unit II: Diagnostic Tools & Case Assessment

SLO: Apply diagnostic techniques for complex cases.

Digital imaging, 3D scans, and CBCT; Occlusion analysis and functional assessment; Smile evaluation and esthetic indices.

Unit III: Periodontal Considerations

SLO: Integrate periodontal health in esthetic planning.

Soft tissue management and augmentation; Gingival contouring and papilla reconstruction; Maintenance and healing evaluation.

Unit IV: Orthodontic Integration

SLO: Apply orthodontic strategies for esthetic alignment.

Minor tooth movement to optimize esthetic outcomes; Interdisciplinary coordination with restorative planning; Treatment sequencing and timing.

Unit V: Restorative & Prosthodontic Integration

SLO: Execute restorative interventions in coordinated plans.

Veneers, crowns, and bonding techniques; Implant-supported esthetic rehabilitation; Occlusal and functional integration.

Unit VI: Case Planning and Clinical Execution

SLO: Demonstrate collaborative case management.

Multidisciplinary case discussion and planning; Digital smile design integration; Outcome assessment and documentation.

Recommended References & Learning Resources

- Goldstein RE, Interdisciplinary Treatment Planning in Esthetic Dentistry
- Sarver DM & Ackerman MB, Esthetic Orthodontics and Multidisciplinary Care
- Belser UC et al., Implants in Esthetic Dentistry: Principles and Practice
- Journal of Esthetic and Restorative Dentistry
- Digital Smile Design (DSD) manuals and software tutorials

Course Outcomes (COs)

CO1: Understand multidisciplinary approaches, including role of restorative, orthodontic, periodontic, and prosthodontic disciplines; Integration of esthetic principles in treatment planning; Patient-centered evaluation.

CO2: Apply diagnostic techniques for complex cases, including digital imaging, 3D scans, and CBCT; Occlusion analysis and functional assessment; Smile evaluation and esthetic indices.

CO3: Integrate periodontal health in esthetic planning, including soft tissue management and augmentation; Gingival contouring and papilla reconstruction; Maintenance and healing evaluation.

CO4: Apply orthodontic strategies for esthetic alignment, including minor tooth movement to optimize esthetic outcomes; Interdisciplinary coordination with restorative planning; Treatment sequencing and timing.

CO5: Execute restorative interventions in coordinated plans, including veneers, crowns, and bonding techniques; Implant-supported esthetic rehabilitation; Occlusal and functional integration.

CO6: Demonstrate collaborative case management, including multidisciplinary case discussion and planning; Digital smile design integration; Outcome assessment and documentation.

14. Practice Management, Legal, Ethical & Professional Aspects of Aesthetic Dentistry [MAD303]

L-T-P-C: 2 - 0 - 2 - 4 | Category: MC | Semester: 3

Course Description

This course introduces principles of effective dental practice management with an emphasis on legal, ethical, and regulatory aspects specific to aesthetic dentistry. It covers practice operations, patient communication, informed consent, risk management, professional liability, and ethical decision-making to ensure safe, ethical, and high-quality patient care.

Course Objectives

- To understand the fundamentals of dental practice management
- To study legal frameworks, professional regulations, and ethical guidelines
- To develop skills in risk assessment and patient communication
- To apply ethical principles in complex clinical scenarios
- To enhance decision-making for patient safety and practice compliance

Course Content with Specific Learning Outcomes (SLOs)

Unit I: Principles of Dental Practice Management

SLO: Understand core management concepts.

Clinic organization and workflow optimization; Financial management, billing, and inventory control; Staff management and team coordination.

Unit II: Legal Framework in Dentistry

SLO: Explain dental law and regulations.

Dental Council regulations and licensing requirements; Professional liability and malpractice; Medico-legal documentation and record-keeping.

Unit III: Ethical Principles in Dentistry

SLO: Apply ethical frameworks in patient care.

Beneficence, non-maleficence, autonomy, justice; Ethical dilemmas in cosmetic and elective procedures; Confidentiality and patient privacy.

Unit IV: Patient Communication and Consent

SLO: Demonstrate effective patient interactions.

Informed consent processes and documentation; Communicating risks, benefits, and alternatives; Handling patient complaints and disputes.

Unit V: Risk Management and Quality Assurance

SLO: Evaluate safety and compliance protocols.

Clinical safety protocols and infection control; Identifying, preventing, and mitigating adverse outcomes; Continuous quality improvement and audit processes.

Recommended References & Learning Resources

- Davidovitch Z, Practice Management in Dentistry
- American Dental Association (ADA) Guidelines on Ethics & Professional Conduct
- Glick M, Legal and Ethical Issues in Dentistry
- Journals: Journal of Esthetic and Restorative Dentistry, Dental Ethics and Law Review
- Case studies on legal issues, risk management, and ethical decision-making in dentistry

Course Outcomes (COs)

CO1: Understand core management concepts, including clinic organization and workflow optimization; Financial management, billing, and inventory control; Staff management and team coordination.

CO2: Explain dental law and regulations, including dental Council regulations and licensing requirements; Professional liability and malpractice; Medico-legal documentation and record-keeping.

CO3: Apply ethical frameworks in patient care, including beneficence, non-maleficence, autonomy, justice; Ethical dilemmas in cosmetic and elective procedures; Confidentiality and patient privacy.

CO4: Demonstrate effective patient interactions, including informed consent processes and documentation; Communicating risks, benefits, and alternatives; Handling patient complaints and disputes.

CO5: Evaluate safety and compliance protocols, including clinical safety protocols and infection control; Identifying, preventing, and mitigating adverse outcomes; Continuous quality improvement and audit processes.

15. Scientific Writing, Research Communication & Journal Club [MAD304]

L-T-P-C: 2 - 0 - 2 - 4 | Category: SEC | Semester: 3

Course Description

This course equips students with essential skills for scientific writing, effective communication of research findings, and critical evaluation of current literature. Emphasis is placed on preparing manuscripts, abstracts, posters, and oral presentations, as well as conducting journal club discussions to develop analytical and evidence-based reasoning in dental research.

Course Objectives

- To understand the principles of scientific writing in dentistry
- To develop skills for effective oral and written research communication
- To critically analyze peer-reviewed literature and evidence-based studies

- To enhance presentation and discussion skills through journal clubs
- To promote ethical reporting and referencing in scientific work

Course Content with Specific Learning Outcomes (SLOs)

Unit I: Principles of Scientific Writing

SLO: Understand manuscript structure.

Components: Title, abstract, introduction, methods, results, discussion, conclusion; Writing clarity, style, and consistency; Referencing styles: Vancouver, APA, and journal-specific formats.

Unit II: Research Communication

SLO: Develop communication skills.

Preparing posters and oral presentations; Effective use of visuals, charts, and tables; Communicating research findings to academic and clinical audiences.

Unit III: Journal Club and Critical Appraisal

SLO: Critically analyze literature.

Selection of peer-reviewed articles; Assessing study design, methodology, statistics, and results; Discussing clinical relevance and limitations.

Unit IV: Ethics in Scientific Writing

SLO: Apply ethical principles.

Avoiding plagiarism and data fabrication; Informed consent and human/animal research ethics; Authorship guidelines and conflict of interest.

Recommended References & Learning Resources

- Day RA, How to Write and Publish a Scientific Paper
- Peat J et al., Scientific Writing: Easy When You Know How
- Belcher W, Writing Your Journal Article in Twelve Weeks
- Cargill M & O'Connor P, Writing Scientific Research Articles
- Journals: Journal of Dental Research, Journal of Clinical Dentistry, Journal of Esthetic and Restorative Dentistry

Course Outcomes (COs)

CO1: Understand manuscript structure, including components: Title, abstract, introduction, methods, results, discussion, conclusion; Writing clarity, style, and consistency; Referencing styles: Vancouver, APA, and journal-specific formats.

CO2: Develop communication skills, including preparing posters and oral presentations; Effective use of visuals, charts, and tables; Communicating research findings to academic and clinical audiences.

CO3: Critically analyze literature, including selection of peer-reviewed articles; Assessing study design, methodology, statistics, and results; Discussing clinical relevance and limitations.

CO4: Apply ethical principles, including avoiding plagiarism and data fabrication; Informed consent and human/animal research ethics; Authorship guidelines and conflict of interest.

16. SWAYAM/NPTEL Course [MAD305]

L-T-P-C: 2 - - - - 2 | Category: VAC | Semester: 3

Course Description

A self-paced online course selected from SWAYAM/NPTEL (or an equivalent MOOC platform) in a subject relevant to aesthetic dentistry, digital dentistry, biomaterials, communication, entrepreneurship or a related enrichment area, completed as a University-approved Value Added Course.

Course Objectives

- To enable independent, self-directed learning through a nationally recognized MOOC platform.
- To broaden exposure to a subject relevant to aesthetic dentistry or professional development beyond the core curriculum.
- To develop digital-learning and self-assessment skills.
- To earn a verifiable certification recognized for credit transfer.

Course Content with Specific Learning Outcomes (SLOs)

Unit I: Course Selection & Enrolment

SLO: Identify a SWAYAM/NPTEL course relevant to the programme; complete enrolment and orientation.

Unit II: Self-Paced Learning

SLO: Complete the prescribed online modules, assignments and quizzes of the selected MOOC.

Unit III: Assessment & Certification

SLO: Complete the platform's proctored/online assessment and obtain the course completion certificate.

Unit IV: Reflection & Application

SLO: Prepare a short reflective note on how the course content applies to aesthetic dentistry practice.

Course Outcomes (COs)

CO1: Identify a SWAYAM/NPTEL course relevant to the programme; complete enrolment and orientation.

CO2: Complete the prescribed online modules, assignments and quizzes of the selected MOOC.

CO3: Complete the platform's proctored/online assessment and obtain the course completion certificate.

CO4: Prepare a short reflective note on how the course content applies to aesthetic dentistry practice.

17. Clinical Posting / Advanced Chairside Training [MAD306]

L-T-P-C: - - - - 4 | Category: OJT | Semester: 3

Course Description

An advanced, full-time chairside clinical posting building on Semesters I-II, providing supervised exposure to more complex aesthetic-dentistry case management, treatment planning discussions, and assisting in advanced restorative/cosmetic procedures under a registered dental practitioner.

Course Objectives

- To build on Semester I-II chairside exposure with more complex aesthetic-dentistry case management
- To further develop patient-interaction, chairside-assistance and case-documentation skills
- To participate in case discussions and multidisciplinary referral coordination

Course Content with Specific Learning Outcomes (SLOs)

Unit I: Advanced Chairside Orientation

SLO: Orientation to advanced aesthetic case workflow, multidisciplinary referral pathways and updated infection-control protocols.

Unit II: Advanced Chairside Assistance

SLO: Supervised chairside assistance in advanced restorative, adhesive and interdisciplinary aesthetic procedures.

Unit III: Case Discussion & Documentation

SLO: Participation in case discussions and maintenance of an advanced case log/portfolio with photographs (with consent).

Laboratory / Practical Component

- Chairside assistance in advanced/interdisciplinary aesthetic procedures
- Case-discussion participation and documentation
- Advanced case photography and portfolio maintenance

Course Outcomes (COs)

CO1: Orientation to advanced aesthetic case workflow, multidisciplinary referral pathways and updated infection-control protocols.

CO2: Supervised chairside assistance in advanced restorative, adhesive and interdisciplinary aesthetic procedures.

CO3: Participation in case discussions and maintenance of an advanced case log/portfolio with photographs (with consent).

18. Capstone Research Dissertation (Thesis, Viva & Final Defense) [MAD401]

L-T-P-C: - - - - - 4 | Category: DISS | Semester: 4

Course Description

An independent, faculty-guided research dissertation on a topic in aesthetic dentistry, culminating in a written thesis and a viva-voce examination.

Course Objectives

- To formulate and execute an ethically approved research study relevant to aesthetic dentistry.
- To apply appropriate research methodology, data analysis and interpretation.
- To develop scientific writing and dissertation-preparation skills.
- To defend the research work through a viva-voce examination.

Course Content with Specific Learning Outcomes (SLOs)

Unit I: Proposal & Ethics

SLO: Topic selection, research question, protocol development and Institutional Ethics Committee clearance.

Unit II: Data Collection

SLO: Sampling, data/specimen collection, quality control and record keeping.

Unit III: Analysis & Interpretation

SLO: Data analysis using appropriate statistical methods; interpretation of findings.

Unit IV: Thesis Writing

SLO: Structured thesis preparation following the University's prescribed format, with plagiarism-similarity compliance.

Unit V: Viva Voce

SLO: Defence of the dissertation before an internal-external examiner panel.

Unit VI: Presentation Preparation

SLO: Preparation of a structured oral/poster presentation summarizing the dissertation.

Unit VII: Seminar Presentation

SLO: Formal presentation of research findings to a faculty and peer audience.

Course Outcomes (COs)

CO1: Topic selection, research question, protocol development and Institutional Ethics Committee clearance.

CO2: Sampling, data/specimen collection, quality control and record keeping.

CO3: Data analysis using appropriate statistical methods; interpretation of findings.

CO4: Structured thesis preparation following the University's prescribed format, with plagiarism-similarity compliance.

CO5: Defence of the dissertation before an internal-external examiner panel.

CO6: Preparation of a structured oral/poster presentation summarizing the dissertation.

CO7: Formal presentation of research findings to a faculty and peer audience.

19. Clinical Portfolio, Comprehensive Case Studies & On-the-Job Training [MAD402]

L-T-P-C: - - - - - 4 | Category: OJT | Semester: 4

Course Description

A structured clinical portfolio documenting supervised smile-makeover and aesthetic-dentistry cases managed by the student across the programme, including pre-treatment assessment, treatment planning, procedural documentation and post-treatment outcomes.

Course Objectives

- To compile a verifiable portfolio of supervised clinical cases in aesthetic dentistry.
- To demonstrate clinical decision-making, treatment planning and outcome evaluation across a range of cases.
- To develop professional case-documentation and presentation skills.

Course Content with Specific Learning Outcomes (SLOs)

Unit I: Case Selection & Planning

SLO: Selection and pre-treatment assessment/planning of eligible smile-makeover cases.

Unit II: Procedural Documentation

SLO: Step-wise procedural documentation with clinical photography (with informed consent).

Unit III: Outcome Evaluation

SLO: Post-treatment outcome evaluation, patient feedback and follow-up documentation.

Unit IV: Portfolio Compilation & Presentation

SLO: Compilation of the completed case portfolio and its presentation for evaluation.

Laboratory / Practical Component

- Minimum prescribed number of supervised smile-makeover/aesthetic cases
- Case-based clinical photography
- Portfolio compilation and viva

Course Outcomes (COs)

CO1: Selection and pre-treatment assessment/planning of eligible smile-makeover cases.

CO2: Step-wise procedural documentation with clinical photography (with informed consent).

CO3: Post-treatment outcome evaluation, patient feedback and follow-up documentation.

CO4: Compilation of the completed case portfolio and its presentation for evaluation.

20. International Standards in Aesthetic Dentistry: AACD, GDC & ISO [MAD403]

L-T-P-C: 2 - 0 - 2 - 4 | Category: MC | Semester: 4

Course Description

This course introduces international standards, accreditation protocols, and quality control measures relevant to aesthetic dentistry. Emphasis is placed on understanding professional guidelines, regulatory frameworks, and best practices to ensure safe, ethical, and high-quality esthetic dental care.

Course Objectives

- To familiarize students with international standards and professional bodies in aesthetic dentistry
- To understand clinical and laboratory quality benchmarks
- To integrate global protocols into practice management
- To develop awareness of patient safety, ethical obligations, and documentation requirements

Course Content with Specific Learning Outcomes (SLOs)

Unit I: Professional Accreditation Bodies

SLO: Identify key professional organizations.

American Academy of Cosmetic Dentistry (AACD); General Dental Council (GDC) standards; Global accreditation frameworks.

Unit II: International Standards for Dental Materials

SLO: Describe ISO standards.

ISO 6872: Dental ceramic standards; ISO 4049: Resin-based materials; ISO 10993: Biological evaluation of dental materials.

Unit III: Clinical Protocols and Quality Assurance

SLO: Apply standards in practice.

Documentation and record-keeping; Infection control and safety protocols; Calibration of dental equipment.

Unit IV: Ethical and Legal Considerations

SLO: Demonstrate professional responsibility.

Informed consent; Patient confidentiality; Risk management and legal compliance.

Recommended References & Learning Resources

- AACD Accreditation and Clinical Standards Manual
- General Dental Council (GDC) – Standards for Dental Professionals
- ISO Standards for Dental Materials and Devices (ISO 6872, ISO 4049, ISO 10993 series)
- Journals: Journal of Esthetic and Restorative Dentistry, International Journal of Prosthodontics
- Textbooks: Contemporary Esthetic Dentistry by William J. O'Brien

Course Outcomes (COs)

CO1: Identify key professional organizations, including American Academy of Cosmetic Dentistry (AACD); General Dental Council (GDC) standards; Global accreditation frameworks.

CO2: Describe ISO standards, including ISO 6872: Dental ceramic standards; ISO 4049: Resin-based materials; ISO 10993: Biological evaluation of dental materials.

CO3: Apply standards in practice, including documentation and record-keeping; Infection control and safety protocols; Calibration of dental equipment.

CO4: Demonstrate professional responsibility, including informed consent; Patient confidentiality; Risk management and legal compliance.

21. Advanced Clinical Case Presentation & Professional Practice [MAD404]

L-T-P-C: 0 - 0 - 4 - 4 | Category: MC | Semester: 4

Course Description

A practical, presentation-focused capstone course in which students prepare and present advanced aesthetic-dentistry cases and are oriented to professional-practice readiness (documentation, licensing and career-entry requirements) ahead of graduation.

Course Objectives

- To develop advanced clinical case-presentation skills
- To prepare for professional registration and career entry
- To present and defend a capstone case before a faculty panel

Course Content with Specific Learning Outcomes (SLOs)

Unit I: Advanced Case Presentation Techniques

SLO: Prepare and deliver a structured advanced clinical case presentation.

Case-presentation formats; visual/photographic aids; structuring diagnosis-to-outcome narratives; audience Q&A handling.

Unit II: Professional Practice Readiness

SLO: Describe requirements for professional registration and career entry into aesthetic-dentistry practice.

Registration/licensing requirements; curriculum vitae and portfolio for practice or further study; interview and career-readiness skills.

Unit III: Capstone Case Presentation & Assessment

SLO: Present a capstone advanced case before a faculty panel for summative assessment.

Panel case presentation; peer feedback; summative assessment and viva.

Course Outcomes (COs)

CO1: Prepare and deliver a structured advanced clinical case presentation.

CO2: Describe requirements for professional registration and career entry into aesthetic-dentistry practice.

CO3: Present a capstone advanced case before a faculty panel for summative assessment.

Annexure V - Model Question Paper Pattern

A. Theory - End-Semester Examination (60 marks)

Section	Instruction	No. of Questions	Total Marks
1	Very Short Answer Questions	10 x 2 marks	20
2	Short Answer Questions	6 x 5 marks	30
3	Essay Questions	2 x 10 marks	20

B. Theory - Internal Assessment (40 marks)

Section	Instruction	No. of Questions	Total Marks
1	Very Short Answer Questions	5 x 2 marks	10
2	Short Answer Questions	2 x 5 marks	10

Section	Instruction	No. of Questions	Total Marks
3	Essay Question	1 x 10 marks	10

C. Practical / Clinical Examination

Section	Indicative Marks
Case Presentation / Clinical Demonstration	30
Spotters / Material & Instrument Identification	10
Portfolio / Logbook Review	10
Internal Viva	20
External Viva	20
Record	10

Annexure VI - Faculty Requirement Norms and Staffing Pattern

Position	Minimum Qualification	Indicative Strength
Professor / Head of School	MDS/Ph.D. in Prosthodontics, Conservative Dentistry & Endodontics, or a relevant aesthetic-dentistry discipline, with 10+ years' experience	1
Associate Professors	MDS/Ph.D. (relevant dental specialty) with aesthetic/cosmetic-dentistry specialization	2
Assistant Professors	MDS / M.Sc. Aesthetic Dentistry with relevant qualification	3
Visiting/Adjunct Clinical Faculty	Practising aesthetic/cosmetic dentists, orthodontists, implantologists and periodontists for guest lectures and clinical mentoring	As required
Dental Laboratory Technicians / Technical Assistants	Diploma/Degree in dental mechanics with CAD/CAM and 3D-printing experience	2
Administrative & Support Staff	Office superintendent, clinic attendants, librarian support staff, patient coordinator	As per University norms

Annexure VII - List of Laboratories and Equipment

Laboratory	Key Equipment / Facilities
Pre-Clinical Simulation Laboratory	Dental simulation units/manikins, typodonts, magnification loupes, hand and rotary instruments for pre-clinical skill-building.
Aesthetic Restorative & Clinical Dentistry Clinic	Dental chairs with curing lights, composite/ceramic restorative kits, isolation systems (rubber dam), shade-matching systems.
Digital Smile Design & Photography Studio	DSLR cameras with ring/twin flash, intraoral cameras, DSD software, facial/smile-analysis workstations.
CAD/CAM & 3D Printing Laboratory	Intraoral/desktop scanners, CAD design workstations, milling units, 3D printers for models, surgical guides and provisional restorations.
Dental Materials & Biomaterials Laboratory	Testing and demonstration setup for ceramics, composites, adhesives and cements; material-handling and mixing stations.
Laser Dentistry Laboratory	Soft- and hard-tissue dental lasers with safety equipment for demonstration and supervised skill-training.

Laboratory	Key Equipment / Facilities
Whitening & Bleaching Demonstration Unit	In-office and take-home whitening systems, shade guides, photography setup for pre/post documentation.

Laboratories and clinics are shared/co-located with the University's affiliated dental hospital, subject to institutional biosafety, radiation and infection-control protocols.