



## Module (Course Syllabus) Catalogue 2025-2026

|                                 |   |                                |                 |
|---------------------------------|---|--------------------------------|-----------------|
| <b>College/ Institute</b>       | <b>Medical technical institute</b>  |                                |                 |
| <b>Department</b>               | <b>Dental assistant</b>   |                                |                 |
| <b>Module Name</b>              | <b>Dental materials</b>   |                                |                 |
| <b>Module Code</b>              | <b>DEM210</b>   |                                |                 |
| <b>Degree</b>                   | <b>Technical Diploma</b> ✓  | <b>High Diploma</b>            | <b>Bachelor</b> |
|                                 |   | <b>Master</b>                  | <b>PhD</b>      |
| <b>Semester</b>                 | <b>2</b>  |                                |                 |
| <b>Qualification</b>            | <b>BDS, MSc. Conservative dentistry</b>   |                                |                 |
| <b>Scientific Title</b>         | <b>Assistant lecturer</b>   |                                |                 |
| <b>ECTS (Credits)</b>           | <b>6</b>  |                                |                 |
| <b>Module type</b>              | <b>Prerequisite</b>   | <b>Core</b> ✓                  | <b>Assist.</b>  |
| <b>Weekly hours</b>             | <b>3</b>  |                                |                 |
| <b>Weekly hours (Theory)</b>    | <b>( 1 )hr Class</b>  | <b>(12 )Total hrs Workload</b> |                 |
| <b>Weekly hours (Practical)</b> | <b>( 2 )hr Class</b>  | <b>( 24)Total hrs Workload</b> |                 |
| <b>Number of Weeks</b>          | <b>12</b>   |                                |                 |
| <b>Lecturer (Theory)</b>        | <b>Dr. Aso Muhammed Abdulkareem</b>   |                                |                 |
| <b>E-Mail &amp; Mobile NO.</b>  | <b><a href="mailto:aso.abdulkareem@epu.edu.iq">aso.abdulkareem@epu.edu.iq</a> 07504786341</b> |                                |                 |
| <b>Lecturer (Practical)</b>     |   |                                |                 |
| <b>E-Mail &amp; Mobile NO.</b>  |   |                                |                 |
| <b>Websites</b>                 |   |                                |                 |

## Course Book

|                                    |   |                |                       |                 |                                  |  |
|------------------------------------|---|----------------|-----------------------|-----------------|----------------------------------|--|
| <b>Course Description</b>          | This Course is important for the students because it helps them to know the names and uses of all materials used in deferent branches of dentistry because the main duty of them is to help the dentist during dental treatment procedure.  |                |                       |                 |                                  |  |
| <b>Course objectives</b>           | <ul style="list-style-type: none"> <li>- ئاشناكر دني قوتابي بة ئغو موادەي كە لة لقة جورا و جورەكانى تزيشكى ددان بة كارديت.</li> <li>- زانيني تايبةتمەندىە فيزياوي و كيمياوي و بايولۇجي موادى ددان.</li> <li>- ليكجياكر دنەوەي موادى بةكار هينراو و زانيني ضؤنيەتتى بةكار هينانين.</li> <li>- ضؤنيەتتى نيكلكر دني ئغو موادەي لة تزيشكى ددان بةكار دەهينريت.</li> </ul> |                |                       |                 |                                  |  |
| <b>Student's obligation</b>        | The student have to be present in the lecture halls at the lecture and see all practical videos concern to the subject and participate with the lecturer during the theoretical and practical lectures and answer the quiz for every lecture before in order to be in continuous with the subject.  |                |                       |                 |                                  |  |
| <b>Required Learning Materials</b> | <b>Data show, white board, discussing, videos, pictures, animation, materials samples in the laboratory, manipulations, preparation, uses, etc...</b>   |                |                       |                 |                                  |  |
| <b>Evaluation</b>                  | <b>Task</b>   |                | <b>Weight (Marks)</b> | <b>Due Week</b> | <b>Relevant Learning Outcome</b> |  |
|                                    | Paper Review  |                | 0                     |                 |                                  |  |
|                                    | Assignments   | Homework       |                       | 6               |                                  |  |
|                                    |   | Class Activity |                       | 0               |                                  |  |
|                                    |   | Report         |                       | 8               |                                  |  |
|                                    |   | Seminar        |                       | 3               |                                  |  |
|                                    |   | Essay          |                       | 8               |                                  |  |
|                                    |   | Project        |                       | 8               |                                  |  |
|                                    | Quiz  |                | 2                     |                 |                                  |  |
|                                    | Lab.  |                | 0                     |                 |                                  |  |
|                                    | Midterm Exam  |                | 25                    |                 |                                  |  |
|                                    | Final Exam  |                | 40                    |                 |                                  |  |
| Total                              |   | 100            |                       |                 |                                  |  |
| <b>Specific</b>                    | This course is important to the student's daily work life as he learn how to deal with different materials used in dentistry and how to   |                |                       |                 |                                  |  |

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| <b>learning outcome:</b>               | manipulate them also have a knowledge about the hazard of some materials if improperly used. The student will be familiar with the type of deferent materials used in deferent specialties of dentistry. that help him to completely understand his job.  |   |
| <b>Course References:</b>              | Key references: <b>Contemporary dental assisting.</b><br><ul style="list-style-type: none"> <li>▪Useful references: . <b>Art and since of operative dentistry.</b></li> <li>▪Magazines and review (internet): <b>Internet different sites.</b></li> </ul> |   |
| <b>Course topics (Theory)</b>          | <b>Week</b>   | <b>Learning Outcome</b>   |
| Introduction                           | 1   | Definition of dental materials, properties of dental materials, properties of solid materials.  |
| Materials used in surgical dentistry   | 2   | Anaesthesia (local anaesthesia (topical, injectable), general anaesthesia), sutures, MTA, sialistic bone.   |
| Materials used in operative dentistry  | 3   | Cements (zinc oxide eugenol, zinc phosphate, zinc polycarboxilate) Glass ionomer cement (chemical cure, resin based cement light cure cement)   |
| Materials used in operative dentistry  | 4   | Composite (chemical cure, light cure, dual cure), properties of composite, types of composites according to size of filler.   |
| Materials used in operative dentistry  | 5   | Amalgam (types of amalgam, composition of amalgam, mixing of amalgam).  |
| Materials used in Endodontic dentistry | 6   | Irrigant solution, chelating materials, absorbent paper point, Sealer (types, properties, mixing of sealers), gutta percha (types, sizes, uses), dressing materials, pulp capping materials |
| Impression material                    | 7   | Impression material, classification, requirements, non-elastic impression   |

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|  |             | materials.  |
| Impression material  | 8           | Elastic impression materials, hydrocolloid, elastomeric.  |
| gypsum   | 9           | Plasters (properties, uses), stones (properties, uses) diestones  |
| Materials used in prosthodontic                                  | 10          | Acrylic (hot cure & cold cure), metals.   |
| Materials used in preventive dentistry                           | 11          | Fluorid, fissure sealants, disclosing agent, caries activity test, polishing silica, bleaching materials.   |
| Materials used in dental laboratory.                             | 12          | Wax, types of wax, investment, composition of investment.   |
| <b>Practical Topics</b>  | <b>Week</b> | <b>Learning Outcome</b>   |
| introduction   | 1           | Showing videos about dental assistant role in the dental clinic and how dealing with the materials in different field of dentistry and how doing sterilization  |
| Materials used in surgical dentistry                             | 2           | demonstrating techniques of anaesthesia (topical and injectable) in practical, then showing suture material (in detail), bone graft (different types), demonstrating video about general anaesthesia.                     |
| Materials used in operative dentistry (dental cement)            | 3           | Mixing different types of dental cements, on manikin, demonstrating crown cementation and preparing cement to be used under different filling materials, showing videos about using cement in different uses in dentistry |
| Materials used in operative dentistry (tooth coloured materials) | 4           | Showing different types of composite resin, demonstrating filling tooth with composite resin on manikin. Showing videos on scientific composition of dental composite resin and uses of composite resin.                  |
| Materials used in operative dentistry (dental amalgam)           | 5           | Demonstrating the composition of capsule of dental amalgam, mixing dental amalgam, demonstration of filling tooth with dental amalgam on  |

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|  |  | manikin, showing videos on dental amalgam.  |
| Materials used in Endodontic dentistry | 6  | Showing different irrigant solution, sealers, paper points, different types of gutta percha, demonstrating root canal treatment on extracted tooth, showing videos related to the subject.                                  |
| Impression material                    | 7  | Mixing alginate in different way, and using impression compound on manikin, showing videos related to the subject.  |
| Impression material                    | 8  | Showing and mixing different types of impression materials, showing videos related to different techniques of taking impression procedure.  |
| gypsum                                 | 9  | Mixing plaster, stone and diestones, and compare between, then using different technique in mixing plaster by changing W/P ratio, and manual and mechanical technique and using (or not) vibrator during pouring impression |
| Materials used in prosthodontic        | 10   | Mixing cold cure acrylic resin and hot cure acrylic resin, and showing videos of processing Cr/Co partial denture.  |
| Materials used in preventive dentistry | 11   | Demonstrating floured varnish, fissure sealant, and disclosing agent, then do polishing on volunteer student. Showing videos related to these subjects and related to bleaching.  |
| Materials used in dental laboratory    | 12   | Showing different types of waxes, and investment, videos related to using waxes in different laboratory work, and also videos showing using of investments  |
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| <b>Questions Example Design</b>        | <b>19. Examinations:</b><br><b>1. Compositional:</b><br>The proper contact relation in each arch between neighbouring teeth is very important as it serves the following purposes: (what are they?)<br>1- It prevents food (which can cause caries and periodontal problems) from packing between the teeth. |   |

- 2- It stabilizes all the teeth of the dental arches with each other.
- 3- By diverting food towards the buccal and lingual areas it protects the interdental papillae of the gingival.

**2. True or false type of exams:**

Q): answer by true (T) or false (F) for the following statements.

(  
25 marks)

- 1- (T) Thermal conductivity considered as physical properties of dental materials.
- 2- (T) Dental plaster differs from dental stone in the form of production, but they are identical in the chemical composition.
- 3- (T) A dental impression is a positive record of the tissues of the mouth.
- 4- (T) Agar-agar is considered as a reversible elastic impression material.
- 5- (F) Microwave cannot be used with heat activated acrylic resin to achieve setting of acrylic.
- 6- (F) Dental cements cannot retain restorations or appliances in a fixed position within the mouth.
- 7- (F) Composite restorative materials is tooth coloured material supplied as powder and liquid.
- 8- (T) An amalgam: Are an alloy of mercury and one or more other metals.
- 9- (F) In endodontic irrigant solution perform its action through chemical action only (dissolving of pulp tissue and microflora).
- 10- (T) Amalgam can be used as retrograde filling.

**a- What are the primary purposes of using dental cement?**

- 1- As restorative filling materials, either alone or with other materials.
- 2- To retain restorations or appliances in a fixed position within the mouth.

**b- What are the Disadvantages of Amalgam?**

- The silver colour does not match tooth structure.
- They are somewhat brittle;
- Are subject to corrosion and galvanic action;
- May demonstrate a degree of marginal breakdown and do not help retain weakened tooth structure

**3. Multiple choices:**

In this type of exam there will be a number of phrases next or below a statement, students will match the correct phrase. Examples should be provided.

**Extra notes:**

A better learning objective will be achieved through making the student work in a special dental clinic or dental centre or practice in dental centre with different speciality to be familiar with the different dental material

**External Evaluator**

من د. غالب رحمن حمة كريم نزيشكي ددان و نسنوري دروسكر دني ددان (ماموستاي ياريد ددر) لة هتمان بيش ضاوم خشان د بقم كوريكيولمة د هاستم بقوة كرد كة بابتة كان لقطل ناوة روكة كان زور لئكة نزيكن و بباشي مافي بابتة كة دراوة

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