**University of Detroit Mercy School of Dentistry**

Division of Dental Hygiene

## Course Syllabus

### Dental Materials

**DHY 8150**

**Course Information**

Web Address: <http://blackboard.udmercy.edu>

**Course Director: Course Co-Director:**

|  |  |
| --- | --- |
| Judy Kwapis-Jaeger, R.D.A., R.D.H., M.A.  Office: 304  Hours By Appointment  Phone: (313) 494-6692  Email: Place email address and insert hyperlink by hitting the return key. | Rafael Pacheco D.D.S., M.Sc.  Office: 301  Hours By Appointment  Phone: (313) 494-6965  Email: Place email address and insert hyperlink by hitting the return key. |

Please communicate directly with the Course Director regarding all issues related to course policies, attendance, and grading.

##### Fall Term, 2016

Dental Hygiene Class of 2018

Tuesday - 7:15 a.m. - 8:50 a.m. (as scheduled in clinic)

Wednesday - 1:00 p.m. - 5:00 p.m. (Simulation Lab)

Thursday – 3:00 p.m. – 4:00 p.m. (2440)

**Credit Hours:** 3

**Prerequisites:** None

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Lecture/Seminar/Online** | **PreClinic/Simulation/Lab** | **Clinic** |
| **Total Clock Hours:** | **30** | **42 Simulation/Lab**  **6 PreClinic** | **0** |

***Course Director Guidance****: 1 hour of online or face to face lecture per week for 15 weeks= 1 credit hour; 3 hours of lab, pre clinic, or clinic per week for 15 weeks=1 credit hour*

**Lecturer/Support Faculty**

Lawrence Abbott D.D.S., MBA

John Braud D.D.S., M.Ed

Margurite Buehner R.D.H., R.D.A. M.H.S.A.

Amanda Cavacini C.D.A., R.D.A, B.S.

Margaret Coleman R.D.H., B.S.

Jillian Dzingle R.D.H., R.D.A., C.D.A., B.S.

Richard Kulbersh D.D.S., M.S.

Nizar Mansour D.D.S

Barbara Purifoy Seldon R.D.H., R.D.A., M. A.

Carl Stone D.D.S., M.A., M.B.A., M.A.

Warren C. Wagner PhD

Mary Yim R.D.A., B.S.

**Note:**

**Contents of this syllabus are subject to change. Important messages (such as cancellation of a class session) will be communicated through Blackboard and/or Detroit Mercy email addresses.**

***Course Director Guidance****:* ***Keep the highlighting above***

**Academic Policies**

**Academic Policies:**

All policies in the School of Dentistry Academic Policies Handbook including but not limited to academic integrity, mandatory attendance, professional decorum & dress code, identification (ID) badges, preclinical and classroom decorum, use of cell phone and electronic devices, examination policies, clicker use and exam/quiz absences apply. For more information see:

<http://dental.udmercy.edu/_files/pdf/Academic_Policies_Handbook.pdf>

**Religious Observances:**

It is the policy of the University of Detroit Mercy to respect the faith and religious obligations of each student. Students with exams and classes that conflict with their religious observances should notify their instructor at the beginning of the semester in order to work out a mutually agreeable alternative. Please note that, regardless of whether an absence is “excused” or “unexcused,” the student is responsible for all missed course content and activities.

**Title IX:**

Sexual violence and sexual harassment are contrary to our core values and have no place at the University of Detroit Mercy. In accordance with Title IX and related laws, Detroit Mercy prohibits sex and gender-based discrimination including discrimination toward pregnant/parenting students. If you experience sexual violence or sexual harassment that limits your ability to participate in this course or any other Detroit Mercy program or activity, there are resources and options available. Please be aware that I am not a confidential resource, and that I will need to disclose alleged incidents of sex or gender-based discrimination to the University Title IX Coordinator. You may also contact the Title IX Coordinator directly by calling 313.993.1802 or emailing titleix@udmercy.edu to learn about supportive measures and options that are available to students alleging or alleged to have engaged in sex or gender-based discrimination. *(Syllabus statement revised: Nov. 2020).*

***Course Director Guidance****: update with latest policies as they become available*

**Disability and Accessibility Support Services:**

If you require an accommodation due to a disability, pregnancy, emergency medical condition, or need to make special arrangements in case the building evacuation, please contact:

Laura Bagdady

Assistant Director Disability & Accessibility Support Services

Student Success Center, Room 319

McNichols Campus Library

Email:  [bagdadlm@udmercy.edu](mailto:bagdadlm@udmercy.edu)

Phone:  313-993-1158

You must be registered with Disability & Accessibility Support Services (DAS), and faculty must receive official notification from their office before accommodations can be implemented. It is important for students to be proactive in this process by requesting their accommodations before the start of every semester. If you feel your accommodations are not being honored in the classroom setting, please contact DAS. (*Syllabus statement revised: 6/18/2020*).

<https://www.udmercy.edu/current-students/support-services/disability.php>

**Course Copyright Policy:**

All course materials students receive or to which students have online access are protected by copyright laws. Students may use course materials and make copies for their own use as needed, but unauthorized distribution and/or uploading of materials without the instructor’s express permission is strictly prohibited. Students who engage in the unauthorized distribution of copyrighted materials may be subject to discipline, and/or liable under Federal and State laws. In addition, distributing essays, labs, homework, or other assignments created for a course constitutes possible disciplinary action.

**Recording of Class Sessions:**

Video/audio recordings of class sessions (face-to-face or online) may be recorded for the benefit of students in the class. Recordings will be shared via platforms with access limited to other members of the class. Consent from students will be obtained if recordings of student comments or images will be shared with a broader audience.

#### Student Evaluation of Instruction:

Student course feedback is valued by faculty and administration and formally peer reviewed each semester. All students are required to complete the School of Dentistry’s on-line course evaluation by a specified date in order to earn an “A” grade of record for completion of all course evaluations completed by the third semester of each year. Failure to comply by the posted deadline dates will result in the receipt of an “F” grade of record for the Evaluation Responsibility Course based on the posted criteria as stated in the Academic Policy Handbook. Only constructive, professional student recommendations will be reported and considered.

***Course Director Guidance:*** *Consider the following before moving on to the next sections on Course Description, Goals and Objectives. For an instructive website on developing Course Description, Course Goals and Course Objectives, see Winegarden, BJ “Writing Instructional Objectives” at:*[**https://meded.ucsd.edu/index.cfm/ugme/oede/educational\_development/curriculum\_development/how\_to\_write\_goals\_and\_objectives**](https://meded.ucsd.edu/index.cfm/ugme/oede/educational_development/curriculum_development/how_to_write_goals_and_objectives))

* ***Course Description*** *tells what the course is about.*
* ***Goals:*** *Overarching principle that guides decision making; broad educational statements fitting the mission & description of the course.*
* ***Specific Instructional Objectives:***  *Specific, measurable step that can be taken to meet a goal; performance you want learner to be able to exhibit upon successful completion of course. Consider the structure of objectives: 1) Who, 2) Will do, 3) How much (how well), 4) Of what,5) By when. For example: The student will be able to take an impression of their classmate that satisfies 7 of 8 listed criteria by the end of the course.*

# Course Description

**Purpose of the course:**

The purpose of this course is to provide the student with a background in the science dealing with the properties, manipulation and care of materials used in the prevention and treatment of oral disease. This study will include the physical, mechanical, chemical, biological characters and biocompatibility issues of these materials. In addition, this course will study the clinical application of these dental materials and their relationship to the oral environment.

**Course Goals: *(No more than 10-15 please.)***

At the completion of this course the dental hygiene student will be able to:

* Evaluate and assess the effects of specific materials on the oral environment and the effectiveness of such materials in prevention and treatment of oral disease.
* List occupational hazards incurred when dealing with dental materials.
* Explain the proper maintenance and handling of materials used in the dental profession.

***(Please list by learning unit and a minimum of one instructional objective per learning unit. See K. Shepherd for detailed instructions.)***

**Specific Instructional Objectives:**

At the conclusion of learning unit one, the dental hygiene student will be able to:

* Describe historical aspects of dentistry and dental hygiene as related to dental materials.
* Identify and differentiate the ADA dental specialties.
* Define the science of dental materials.
* Explain ADA specifications and international standards.
* Define properties unique to dental materials.
* Identify and demonstrate safe lab procedures and protocols.

At the conclusion of learning unit two, the dental hygiene student will be able to:

* Describe the philosophy and concepts involved in four handed dentistry
* Identify commonly used dental instruments.
* Demonstrate the ability to act as operator and/or assistant using the concepts of four-handed dentistry.

At the conclusion of learning unit three, the dental hygiene student will be able to:

* Describe the functions, types, composition and uses of periodontal dressings.
* List the types and explain the purpose and techniques for placement and removal of sutures.
* List the necessary armamentarium, prepare the material, place and remove a periodontal dressing on a typodont.
* State the purpose, identify the armamentarium, place and remove sutures on a typodont.

At the conclusion of learning unit four, the dental hygiene student will be able to:

* Define, classify and state the source, use, properties and care of gypsum products.
* Identify, define and list the strength and weakness of different types of impression materials.
* Identify the armamentarium, prepare the material and pour up molds using gypsum products.
* Identify the armamentarium, prepare the tray and material and place and remove an alginate impression on a typodont.
* Identify the armamentarium, prepare the tray and material and place and remove an alginate impression on an individual
* Identify the armamentarium, prepare the material, pour up an alginate impression and trim the set of study models.

At the conclusion of learning unit five, the dental hygiene student will be able to:

* Classify by purpose and identify the properties and advantages and disadvantages of the various types of dental cements.
* Identify the armamentarium, prepare the materials and mix several types of cement.
* State the purpose, armamentarium, preparation, placement and removal of a Class I and Class II IRM on ivory teeth.
* List armamentarium, place and pack non-epinephrine retraction cord.
* Identify the armamentarium, prepare the tray and material and place and remove an elastomeric impression on a typodont.
* State the rationale, list the armamentarium, select, fit, finish and cement a temporary crown on a prepared molar tooth.

At the conclusion of learning unit six, the dental hygiene student will be able to:

* Describe the types, indications and technique for various endodontic procedures.
* Describe the types, indications and technique for the differential testing of affected pulps (percussion, thermal vitality, electric vitality and transillumination).
* Identify the armamentarium and discuss the techniques for various types of endodontic therapy including drying endodontic canals with absorbent points.
* List the indications, select the armamentarium and test the pulp vitality using transillumination, percussion, thermal and an electric pulp tester on a patient.

At the conclusion of learning unit seven, the dental hygiene student will be able to:

* Describe the composition, fabrication and uses of mouth protectors.
* Describe the types, indications and techniques for fabricating oral appliances (mouthguards, bleaching trays, fluoride custom trays, nightguards, obstructive snoring/sleep apnea appliances).
* Identify the armamentarium and fabricate a mouth guard for a patient.

At the conclusion of learning unit eight, the dental hygiene student will be able to:

* Describe the composition, fabrication and uses of a vacuum-formed acrylic resin custom tray.
* Describe the types, indications and techniques for fabricating a vacuum formed acrylic resin custom tray.
* Identify the armamentarium and fabricate a vacuum formed acrylic resin custom tray.

At the conclusion of learning unit nine, the dental hygiene student will be able to:

* State the rationale, identify the armamentarium and place and remove a rubber dam on one arch of a typodont.
* Identify the armamentarium, place and remove a rubber dam on one arch of a patient.

At the conclusion of learning unit ten, the dental hygiene student will be able to:

* Define and classify types of synthetic resins.
* State the history, indications, composition, techniques and effectiveness for placing pit and fissure sealants.
* List the armamentarium, prepare the tooth, place and evaluate a pit and fissure sealant on a tooth in the lab.
* List the armamentarium, select a tooth, prepare the tooth, place and evaluate a pit and fissure sealant on a patient.
* List the armamentarium, prepare the tooth, place and evaluate an orthodontic bracket on an extracted tooth.

At the conclusion of learning unit eleven, the dental hygiene student will be able to:

* List the advantages, disadvantages, clinical indications and contraindications for use and outline the steps in the clinical phase of patient-applied professionally supervised tooth whitening.
* Describe the types, indications and techniques for fabricating oral appliances (mouthguards, bleaching trays, fluoride custom trays, nightguards, obstructive snoring/sleep apnea appliances).
* Identify the armamentarium and fabricate bleaching trays for a patient.

At the conclusion of learning unit twelve, the dental hygiene student will be able to:

* Identify and describe the dental materials used in common restorative procedures.
* Describe and define the history, properties, functions, advantages, disadvantages and use in dentistry of amalgam, gold, metal alloys, polymers, ceramics, composites, esthetics materials and bonded materials.
* Discuss mercury toxicity as it relates to dental patients and dental personnel and the importance of mercury hygiene.
* Describe the history, types, indications, contraindications and techniques for the use of an implant.
* Prepare, place, remove and discuss the rational for the use of matrix and wedges.
* List the armamentarium, prepare and place cavity liner and base material in Class I and Class II ivory teeth.
* Identify the armamentarium, prepare, place, condense and carve Class I and Class II amalgams in prepared ivory teeth.
* Identify the armamentarium, prepare, condense and carve Class I resin bonded restorations in prepared ivory teeth.

At the conclusion of learning unit thirteen, the dental hygiene student will be able to:

* Identify common prosthodontic procedures and prosthetic devises.

At the conclusion of learning unit fourteen, the dental hygiene student will be able to:

* Describe the techniques and effects of different types of polishing methods.
* List the types, causes, and effects of dental abrasives.
* Identify the effects of dentifrices on the oral cavity and on dental materials.
* State the rational and describe different techniques for margination.
* State rational, identify armamentarium, demonstrate and compare the various techniques for the care of metallic, polymer, ceramic and composite restorations.
* Describe the rationale and remove overhanging restorations.

**Instructional and Educational Methodology:**

***Course Director Guidance:*** *Select each of the instructional methodologies utilized in your course from the list below.*

Instructional and Educational methods utilized in the course include *(check all that apply)*:

|  |  |
| --- | --- |
| Lecture  Seminar  Small Group Discussion  Case-Based Learning (CBL)  Problem-Based Learning (PBL)  Small Group Discussions and/or Group Projects  Individual Research and/or Projects  Faculty Team Teaching  IPE Team Teaching | General Lab  Simulation Lab (Typodont)  Standardized Patients  Clinical Lab (Peer-to-Peer)  Clinical Patient Care (Patient Care)  Community-Based Patient Care  Community-Based Service Learning Projects  Online and/or computer based  Other: |

**Distance Education/HyFlex Course Delivery**

To provide an inclusive learning environment for all student learning styles, unique needs, or abilities in a comprehensive academic environment, the School of Dentistry is committed to offering students both in-person and online distance education delivery. Synchronous in-person lectures will be supplemented with simultaneous online delivery via Blackboard Collaborate (or similar application) to provide the option of attending remotely. Synchronous lectures will also be recorded. Asynchronous online delivery of prerecorded lectures will occur when circumstances do not allow for synchronous delivery of instruction. All recorded lectures (synchronous and asynchronous) will be posted to the course website to provide the option of viewing asynchronously. All assessments (in-person and online) will be administered via Blackboard utilizing Respondus Lockdown Browser. Online assessments will be proctored remotely utilizing Respondus Lockdown Browser and Respondus Monitor. In-person attendance is required for all simulation, clinical patient care, and any course work or learning exercise that the course director deems appropriate. It is the student’s responsibility to master all knowledge and skills and demonstrate the same level of expected competency regardless of chosen delivery format. Failure to attend classes in any delivery format, laboratory sessions, or clinical assignments may jeopardize student progress and delay graduation.

**Student Identity Verification**

Students are responsible for ensuring that required coursework and examination/quiz submissions are of their own creation and may only collaborate with peers when explicitly allowed by the course director. In order to assure that the student who is enrolled in the course is the same student who participates in and completes the course (including assessments), the following methods will be utilized: 1) a secure login and pass code; 2) remote proctored examinations; and/or technologies and practices that are effective in verifying student identity; and 3) the use of Blackboard Safe Assign for determining any use of plagiarism for completed assignments. Students involved in an alleged act of academic dishonesty will be reviewed in accordance with University of Detroit Mercy School of Dentistry Academic Misconduct Policies.

**Course Policies**

*(Other policies for consideration by the course director, in addition to those listed in the School of Dentistry Academic Policies Handbook. It is recommended that course directors, lecturers, bench instructors and others associated with a course be familiar with appropriate School of Dentistry policies including but not limited to professional decorum, dress code, identification badges, and examination protocol)*

***Examples of what may be included in this section:***

* *Expected use of Blackboard or additional websites or electronic resources*
* *Protocol for missed quizzes, exams, project due dates, competencies*

*\*Please note that specific policy about “excused” vs. “unexcused” absences and impact on examinations and quizzes are published in the UDM Academic Policies Handbook and are mandatory for all classes.*

* *Tardiness and/or behaviors during class e.g. (policy on food and beverages, restroom breaks, disruptive behavior, etc.)*
* *Examination policies: (specific guidelines for a student late for an examination)*
* *Tablet PC utilization expectations e.g. prior to class meeting, downloading of handouts, utilization during the lecture including inappropriate use)*

# *Course director may outline additional policies specific to the laboratory, preclinical setting or clinic.*

**GENERAL INFORMATION:**

1. Class format will vary from session to session. Lectures will occasionally be conducted by guest speakers. Laboratory sessions may include total class participation or small groups. Please check the schedule for assigned activities.

Students must study the online lectures before the discussion sessions, quizzes and exams covering the same topics. Handouts for the discussion sessions will be posted on blackboard.

2. Attendance of the Thursday discussion sessions is required unless notified otherwise.

3. Lab and clinic attire is required.

4. Lab and clinic attendance is **mandatory**.

5. If a student is absent it is his/her responsibility to obtain information, materials and/or assignments.

6. Assigned readings for a particular session should be read prior to that session.

7. A laboratory session will include review, lecture, practice and evaluation of specific skills. For each laboratory assignment a student must have an evaluation sheet signed by an instructor. A grade of Pass or Fail will be recorded for indicated tasks. If a failing grade is given, the activity must be repeated until it is completed satisfactorily. Projects must be completed according to the listed criteria. There will be no separate letter grade given for the laboratory section of the course. Projects must be clinically acceptable as judged by the instructor based on the criteria listed on the evaluation sheets. **All lab projects must be completed with a passing grade in order to pass the course**

**LABORATORY INFORMATION:**

1. Please check times and assigned groups for laboratory and clinic sessions.

2. Lab and clinic attire is required.

3. **Students are responsible for laboratory evaluation sheets to be turned in at completion of the project.**

4. If a student is absent from a laboratory or clinical session, it is his/her responsibility to complete an assigned project. It is the responsibility of the student to contact the course director and make arrangements to complete any assigned projects. **All lab projects must be completed with a passing grade in order to pass the course**

5. Assigned readings for a particular laboratory should be read prior to that session.

6. Work area should be cleaned by the student.

7. Under no circumstances is any student allowed to perform a lab procedure on another student in any setting but the lab or the clinic and only under the direct supervision of an instructor.

8. On three Tuesdays; September 27, October 4, and October 11 the class will be meeting on the clinic floor fourth year clinic from 7:15 a.m. - 8:50 a.m. for lab: taking alginate impressions and bite registration. Groups of two will be assigned. The groups can self determine the order (for example: one person will be the operator the first week and the other person will be the operator the second week). The third week both individuals will be able to complete any impressions or bite registrations that need to still be completed.

9. On three Tuesdays; November 8, November 15, and November 22 the class will be meeting on the clinic floor (fourth year side clinic ) from, 7:15 a.m. – 8:50 a.m. for lab: Rubber Dam, Pit and Fissure Sealant Lab, Thermal Pulp Testing and Electrical Pulp Testing, and Four handed Dentistry **Please review the lectures for these procedures prior to coming to the clinic floor,** If you would like to bring your tablets feel free to do so. During each week individuals will rotate responsibilities of operator, patient and assistant. Groups of three will be assigned. The groups can self determine the order (for example: the third person could be the operator the first week and the other two the patient and assistant) as long as each individual gets the opportunity to assume each role over the three sessions and all members of the group agree.

**Textbook and Resource Materials**

* *Textbooks (complete citations)*
* *Reserve materials*
* *Complete Web citations, including date*
* *CD/DVD*
* *Course manual (hard copy or online resources)*
* *Suggested supplementary materials: (complete citations)*
* *Textbooks*
* *Journal articles*

##### *Websites for reference or study*

**REQUIRED TEXT:**

* + - * Powers JM, Wataha JC. Dental materials properties and manipulation. 10th ed. Elsevier; 2014.
* Wilkins EM. Clinical practice of the dental hygienist, 12th ed. Lippincott, Williams and Wilkins; 2017.
* Handouts

**SUPPLEMENTAL TEXT:**

* Anusavice KJ, Shen C, Rawls HR. Phillips’ science of dental materials. 12th ed. Elsevier; 2013.

##### Evaluation and Grading

##### Grading Scale:

|  |  |
| --- | --- |
| **A** | ≥ 94% |
| **A-** | ≥ 90% – < 94% |
| **B+** | ≥ 87% – < 90% |
| **B** | ≥ 83% – < 87% |
| **B-** | ≥ 80% – < 83% |
| **C+** | ≥ 77% – < 80% |
| **C** | ≥ 73% – < 77% |
| **C-** | ≥ 70% – < 73% |
| **D+** | ≥ 67% – < 70% |
| **D** | ≥ 60% – < 67% |
| **F** | < 60% |
| **W** | Withdraw, no credit |
| **I** | Incomplete, a temporary grade not of record |

##### Course Grade Components:

|  |  |
| --- | --- |
| **3 Exams (25% each)** | 75% |
| **Quizzes (6)** | 10% |
| **Laboratory Projects** | 15% |

##### Course Evaluation Methods

##### *Course Director Guidance: Before completing the next section on Course Evaluation Methods, please consider the following list of assessment categories and formats that are typically utilized in dental education.*

##### *For an overview of assessment and an assessment toolbox see:*

##### *Albino, JEN, et al. Assessing Dental Students’ Competence: Best Practice Recommendations in the Performance Assessment Literature and Investigation of Current Practices in Predoctoral Education, J Dent Educ 2008; 72(12): 1405-1435.*

##### *Kramer, GA, et al. Dental Student Assessment Toolbox, J Dent Educ 2009; 73(1):12-35.*

|  |  |
| --- | --- |
| ***Assessment Categories*** | ***Assessment Formats*** |
| 1. *Written Assessment* | *Assessment formats include: a)multiple choice questions (MCQ), b) short answer, c) structured essay, d) research reports and e) critically appraised topic summary (CATS).* |
| 1. *Faculty Assessment by Observation* | *Assessment formats include: a) longitudinal / global evaluation over extended periods of time; b) daily clinical evaluation; c) structured observation such as clinical competency examinations; and d) standardized oral examinations; and e) presentations* |
| 1. *Student Self Assessment* | *Critical assessment of one’s own performance and reflection on ways to enhance subsequent performance often with feedback from external sources that may need to be reconciled with self appraisal; may include standard rubrics* |
| 1. *Independent Assessment* | *Independent assessments are often used in conjunction with other methods to provide a well-rounded perspective on the students’ progression toward competence, including: a) Peer Assessment; b) Patient Survey; and c) Standardized Patients.* |
| 1. *Simulation* | *Assessments formats include: a) Virtual Reality (computer-based clinical scenarios); and b) Typodont Models/Mannequins.* |
| 1. *Multi-Competency, Comprehensive Assessments* | *Assessment formats include: a) Objective Structured Clinical Examination (OSCE); and b) Triple Jump Exercise.* |
| 1. *Work Samples* | *Assessment formats include: a) Portfolios; and b) Records Reviews (chart simulated review)* |

##### Quizzes

Six announced quizzes will be given. These will be based on lecture material and reading assignments to date. These quizzes represent 10% of the course grade. If a student is late for class or absent on a quiz day, he or she will be required to take a makeup quiz at a later time.

###### **Examination**

The three examinations will be based on lecture material, reading assignments and lab projects to date. Each examination represents 25% of the student’s course grade. If a student is late for an exam they will have only the remaining scheduled exam time to complete the exam, no time extension will be given. Two examinations will be scheduled during the semester and the third examination will be scheduled during the final exam period.

**Makeup Exams and Quizzes**

Makeup exams and quizzes will be different than the regular scheduled exams but will be based on the same material.

###### **Projects**

A laboratory session will include review, lecture, practice and evaluation of specific skills. For each laboratory assignment a student must have an evaluation sheet signed by an instructor. A grade of Pass or Fail will be recorded for indicated tasks. If a failing grade is given, the activity must be repeated until it is completed satisfactorily. Projects must be completed according to the listed criteria. There will be no separate letter grade given for the laboratory section of the course. However, failure to complete laboratory projects will result in a reduction in the grade for the entire course. Projects must be clinically acceptable as judged by the instructor based on the criteria listed on the evaluation sheets. **All lab projects must be completed with a passing grade in order to pass the course**

**Dental Hygiene Program Course Competency Table and Competency-Based Education:**

Competencies for the University of Detroit Mercy Dental Hygiene Graduate identify and organize the knowledge and skills the graduate must acquire to become a competent practitioner in dental hygiene. These competencies serve as the template for a curriculum that is patient driven, competency-based and criterion referenced to promote successful student achievement.

The dental hygienist is an integral member of the oral health care team collaboratively practicing evidence-based comprehensive dental hygiene care with the ultimate goal of improving the health of society. The dental hygienist must have a foundation in biomedical science and strong clinical skills as well as demonstration of professional and ethical behavior, and effective communication and interpersonal skills. In addition, he/she must have the ability to evaluate and utilize emerging technologies, continuing professional development opportunities and problem-solving and critical thinking skills to effectively address current and future issues in health care.

A competency is a complex behavior or ability essential for the dental hygienist to begin the practice of dental hygiene. Competency includes knowledge, experience, critical thinking and problem-solving skills, professionalism, ethical values, and technical and procedural skills. These components become an integrated whole during the delivery of patient care by the competent dental hygienist. Competency assumes that all behaviors are performed with a degree of quality consistent with patient well-being and that the dental hygienist can self-evaluate treatment effectiveness. In competency-based dental education, what students learn is based upon clearly articulated competencies and further assumes that all behaviors/abilities are supported by foundation knowledge and psychomotor skills in biomedical, behavioral, ethical, clinical dental science and informatics areas that are essential for an entry-level dental hygienist. In creating curricula, faculty members have considered the competencies to be developed through the educational process, the learning experiences that will lead to the development of these competencies, and ways to assess or measure the attainment of competencies.

As part of the overall dental hygiene curriculum at Detroit Mercy, this course has been planned and sequenced to contribute to the development of the dental hygiene student’s knowledge, skills, and values. In addition, this course incorporates assessment strategies to assist the faculty in determining the student’s progress towards gaining the competence essential for independent, unsupervised dental hygiene practice. Dental hygiene students should carefully review the following table summarizing how this specific course provides the foundations, experiences and/or assessment of the Detroit Mercy Competencies for each dental hygiene student as they matriculate through the program.

|  |
| --- |
| ***Course Director Guidance****: Check Boxes in the Course Competency Table.*   1. *Double click with your mouse on the “Check box” you wish to check;* 2. *A small dialog window will open (titled “Check Box Form Field Options”);* 3. *Change the “Default Value” to “checked”; and* 4. *Close the small dialog window by clicking on “OK”.* 5. *If you need to uncheck a box, just follow the same steps and change the Default Value to “not checked”* |

| **School of Dentistry**  **Competencies of the Graduating**  **Dental Hygiene Student** | **Competency Addressed**  *(Foundation / Experiential / Competence Assessed)* | **Competency Evaluated**  *(Progress / Certify Competence / No)* | **Methods of Evaluation**  *(see Key)* |
| --- | --- | --- | --- |
| ***(Check all that apply)*** | ***(All that apply)*** | ***(List all methods utilized)*** |
| **1. Professionalism** |  |  |  |
| **1.1** Demonstrates personal/professional responsibility to the welfare of society through service activities. | **F E C NA** | **P CC No** |  |
| **1.2** Practice within the context of ethical and legal standards in the provision of dental hygiene care. | **F E C NA** | **P CC No** |  |
| **1.3** Participate in professional organizations at the local, state, and/or national level. | **F E C NA** | **P CC No** |  |
| **1.4** Practice within one’s scope of competence, and consult~~s~~ with or refer~~s~~ to professional colleagues when indicated. | **F E C NA** | **P CC No** |  |
| **2. Communication in Multicultural Work Environment with Diverse Populations** | | | |
| **2.1** Apply appropriate interpersonal and communication skills with patients, dental and inter-professional health care team members. | **F E C NA** | **P CC No** |  |
| **2.2** Apply psychosocial and behavioral principles in patient-centered health care. | **F E C NA** | **P CC No** |  |
| **2.3** Communicate effectively with individuals from diverse populations. | **F E C NA** | **P CC No** |  |
| **3. Critical Thinking** |  |  |  |
| **3.1** Evaluate and integrate emerging trends in health care and determines their value in dental hygiene practice. | **F E C NA** | **P CC No** | **MCQ-CF, MCQ-CB, Short Answer** |
| **3.2** Utilize critical thinking and problem-solving skills. | **F E C NA** | **P CC No** | **MCQ-CF, MCQ-CB, Short Answer** |
| **3.3** Evaluate and integrate best research outcomes with clinical expertise and patient values for evidence-based practice. | **F E C NA** | **P CC No** | **MCQ-CF, MCQ-CB, Short Answer** |
| **4. Health Promotion** |  |  |  |
| **4.1** Provide prevention, intervention, and educational strategies. | **F E C NA** | **P CC No** |  |
| **4.2** Participate with dental team members and other health care professionals in the management and health promotion for all patients. | **F E C NA** | **P CC No** |  |
| **4.3** Apply community dental health principles (assess, plan, implement and evaluate programs) to prevent disease and promote health. | **F E C NA** | **P CC No** |  |
| **5. Practice Management & Informatics** |  |  |  |
| **5.1** Evaluate and apply contemporary and emerging information including clinical and practice management technology resources. | **F E C NA** | **P CC No** |  |
| **5.2** Apply principles of risk management including informed consent and appropriate record keeping in patient care. | **F E C NA** | **P CC No** |  |
| **5.3** Apply business and practice management skills. | **F E C NA** | **P CC No** |  |
| **5.4** Apply quality assurance, assessment, and improvement concepts. | **F E C NA** | **P CC No** |  |
| **5.5** Comply with local, state, and federal regulations including OSHA and HIPAA. | **F E C NA** | **P CC No** |  |
| **6. Patient Care – Assessment, Diagnosis, Dental Hygiene Care Planning, Implementation and Documentation** | | | |
| **6.1** Obtain, record, update and organize accurate and complete medical/dental histories including pertinent psychological and socioeconomic information. | **F E C NA** | **P CC No** |  |
| **6.2** Perform, record and organize a physical assessment appropriate for dental hygiene care. | **F E C NA** | **P CC No** |  |
| **6.3** Formulate a dental hygiene diagnosis utilizing and congruent with the dental diagnosis and other health professionals. | **F E C NA** | **P CC No** |  |
| **6.4** Establish a mutually acceptable dental hygiene care plan with the patient. | **F E C NA** | **P CC No** |  |
| **6.5** Monitor and provide for patient comfort associated with dental hygiene care. | **F E C NA** | **P CC No** |  |
| **6.6** Prevent, recognize and manage medical emergencies and maintain basic life support. | **F E C NA** | **P CC No** |  |
| **6.7** Utilize current infection control guidelines for all clinical procedures. | **F E C NA** | **P CC No** |  |
| **6.8** Deliver and/or manage the planned dental hygiene evidence-based treatment and education in sequence and in accordance with accepted Standards of Care. | **F E C NA** | **P CC No** |  |
| **6.9** Evaluate outcomes of comprehensive dental hygiene care and determine~~s~~ an individualized maintenance schedule or additional treatment needs or referral to the appropriate health care provider. | **F E C NA** | **P CC No** |  |

**Key: Course Competency Table *(with Assessment Format Definitions)***

**Competency Addressed Column:**

* “F” = **F**oundational Knowledge / **F**oundational Clinical Skills – Typically includes didactic, simulation in lab and clinic, peer-to-peer activities, and standardized patients.
* “E”= **E**xperiential – Typically includes clinical patient care and service learning activities.
* “C”= Certification of **C**ompetence is Addressed – Course includes competency assessment that determines the student is ready for unsupervised practice.
* “NA”= **N**ot **A**pplicable

**Competency Evaluated Column:**

* “P”= Measures **P**rogress towards Competence – Course includes assessment of foundational knowledge, foundational clinical skills and/or experiential patient care and service learning activities.
* “CC”= **C**ertifies **C**ompetence - Course includes assessment that is utilized to certify competence (e.g.: ready for unsupervised practice). May be a singular assessment or one of several assessments that combine to certify competence (e.g.: triangulation).
* “N”=**N**o assessment – Although the course may address the competency statement, it does not include any assessment of the student’s competence in that area.

**Methods of Evaluation Column:**

* **Written Assessment**:
  + **“MCQ-CF” = Multiple Choice Question-Context Free** [One-best-response questions that are not linked to a clinical context designed to assess recognition or recall of specific pieces of information, i.e., not linked to a patient care situation].
  + **“MCQ-CB”= Multiple Choice Question-Case-based** [Multiple-choice questions linked to scenarios describing patients’ oral health and/or medical problems. Additional materials may include dental chart, radiographs or clinical photos].
  + **“Short Answer” = Written Short Answer or Fill-in** [Stimulus material is provided in a short statement or question that poses a problem requiring the dental student to respond with the solution to the problem in his/her own words].
  + **“Essay” = Structured Essay**, brief or extended [Open-ended assessment format whereby students respond in writing, with or without structural guidance, to assess their capacity to apply information to biomedical problems or to the assessment and resolution of patients’ health problems].
  + **“Research” = Investigative Research Report** [Students investigate an assigned topic/question and prepare a report, which is graded for quality and thoroughness]
  + **“CATs” = Critically Appraised Topics** [Evidence-based format requiring generation of a research question and a review of the available literature, with critical appraisal of evidence presented in a written summary].
* **Faculty Assessment by Observation**
  + **“Global Eval” = Longitudinal, Global, Comprehensive or Summary Evaluation** [This type of assessment considers student performance in all relevant dimensions and disciplines over an extended period of time to allow assessment of reproducibility and consistency of performance, typically eight to twelve weeks in duration. Requires a clear set of performance indicators or rubrics that are judged to be important relative to the competency or competencies being evaluated. Longitudinal evaluations include appraisal of students’ ability to integrate knowledge and skills into relatively seamless performance that is equivalent across various disciplines that comprise a profession].
  + **“Daily Eval” = Daily Evaluation** [Students’ performance with each patient and/or each procedure is evaluated by the supervising instructor, resulting in a “daily grade” or “daily feedback”].
  + **“Clinical Comp” or “CC” = Clinical Competency Examination** [Students are exposed to a highly structured situation, most often in a clinical setting, with pre-established performance demands. Typically, students are expected to perform a specific skill on a patient in the clinic without instructor].assistance, and the rating scale includes important components/attributes of the skill rather than a general set of performance parameters.
  + **“Oral Exam” = Standardized Oral Examination** [Format requiring students to respond verbally to instructors’ questions, allowing an assessment of the student’s depth of comprehension and capacity to apply knowledge and insights to different situations. Standard questions and rating scales should be utilized].
  + **“Present” = Individual or Group Presentation** [Format requiring students to make an oral presentation and respond verbally to peer and instructors’ questions, allowing an assessment of the student’s depth of comprehension and capacity to apply knowledge and insights to different situations. Standard questions and rating scales should be utilized].
* **Self Assessment** 
  + **“Self Assess” = Student Self Assessment** [Critical assessment of one’s own performance and reflection on ways to enhance subsequent performance often with feedback from external sources that may need to be reconciled with self appraisal; may include standard rubrics].
  + **“Reflect” = Reflective Writing** [As above, but specifically utilizing a written instrument]
* **Independent Assessment**
  + **“Peer Assess” = Peer Assessment** [Dental students assess each other’s performance and/or knowledge. Should include standard rubrics].
  + **“Pt Survey” = Patient Survey** [Patient surveys typically involve a series of rating scales designed to assess the patient’s satisfaction with the performance of the student in the clinical setting].
  + **“Std Pt” = Standardized Patients** [Standardized patients (SPs) are trained individuals who present in a clinical situation with standardized symptoms similar to those that might be encountered with actual patients. SPs provide essential feedback on dental student performance utilizing a standard rubric. May include faculty raters as well].
* **Simulation**
  + **“Virtual” = Virtual Reality (Computer-based Clinical Scenarios)** [Appraisal of students’ performance on web-based simulations, including audio/video, depicting patient care scenarios, usually involving tasks such as assessment, diagnosis, and treatment planning].
  + **“Typodont” = Typodont Models and Mannequins** [Models consist of mannequins showing various dentally related clinical challenges for the dental student to evaluate].
* **Multi-Competency Comprehensive Assessments**
  + **“OSCE” = Objective Structured Clinical Examination (OSCE)** [In dental school applications, OSCEs consist of a set of work stations that involve standardized procedures for the dental student to perform].
  + **“TJE” = Triple Jump Assessment** [In the clinical variation of the TJE, students are observed as they interview and examine a patient (first jump); then, they write an assessment and propose a treatment plan with justifying rationale (second jump); and, finally, they explain the assessment and treatment plan and respond to faculty questions (third jump). Students receive component scores of each jump and overall scores].
* **Work Samples**:
  + **“Portfolio” = Portfolio** [Students present their work over time through a variety of methods, including photographic documentation, patient charts, reports and projects, posters and abstracts, copies of evaluations, and self- comment and reflection on the learning process. Portfolios are periodically reviewed to determine extent of progress toward specified competencies].
  + **“Record Rev” = Records Review or Chart Audit Simulation Review** [Review of patient care using charts (medical/dental records) as the basis for instructors’ questions intended to explore students’ capacity to explain rationales for treatment decisions, show comprehension of key concepts, and stimulate students’ self-assessment and reflection].
* **Other**: (include description)

# COURSE SCHEDULE

# *(The following headings are suggested but may be changed as needed depending on type of course i.e. lecture, lab, etc.)*

| **DATE** | **LECTURE TOPIC** | **Lecturer** | **READING ASSINGMENT** | **LAB ACTIVITY** | **SUPPLIES (\*Indicates student supplies)** |
| --- | --- | --- | --- | --- | --- |
| Tues, August 23 | No Class |  |  |  |  |
| Wed., August 24  1:00 p.m. – 5:00 p.m., | Introduction to Course; Historical Highlights | Jaeger | Syllabus | Lab procedures;  Lab safety;  Dental Specialties |  |
| Thurs., August 25 3:00 p.m. – 3:50 p.m. | Introduction to Dental Materials | Pacheco |  |  |  |
| Wed., August 31  1:00 p.m. – 5:00 p.m. | Four-Handed Dentistry; Dental Instruments | Jaeger, | Handout | Instrument Transfer; Suction Technique | \*mirror, \*explorer, evacuator tip, \*3 scalers, \*typodont, \*scissors |
| Thurs., September 1  3:00 p.m. – 3:50 p.m. | Dental Materials Properties I | Pacheco | Chapter 2  (Phillips’ Chapter 3) |  |  |
| Wed., September 7  1:00 p.m. – 5:00 p.m. | Periodontal Dressings; Suture Technique | Seldon,  Coleman | Handout | Periodontal dressing; Sutures | Perio-pak dressing, suture materials, \*typodont, \*cotton pliers, \*scissors, \*restorative instruments |
| Thurs., September 8  3:00 p.m. – 3:50 p.m. | Dental Materials Properties II  **Quiz at 3:30** | Pacheco | Chapter 2  (Phillips’ Chapter 4) |  |  |
| Wed., September 14  1:00 p.m. - 5:00 p.m. | Gypsum Products | Seldon | Chapter 9 and Handout | Gypsum Molds | \*rubber bowl, \*spatula, \*Buffalo knife, vibrator, gauge |
| Thurs., September 15  3:00 p.m. – 3:50 p.m. | No class students will be attending Spirit Day |  |  |  |  |
| Wed., September 21  1:00 p.m. – 5:00 p.m. | Impression Materials | Jaeger | Chapter 8 | Taking and Alginate impression-typodont;  Pouring models | \*typodont, \*impression trays, \*rubber bowl, \*spatula, alginate, \*Buffalo knife,\*base formers, vibrator, measuring gauge |
| Thurs., September 22  3:00 p.m. – 3:50 p.m. | Hydrated  Materials | Mansour | Chapters 8 and Chapter 9;  (Phillips’ Chapters 8 and 9) |  |  |
| Tues., September 27  **7:15 a.m. – 8:50 a.m.**  **Clinic** |  |  |  | Taking and Alginate impression – Clinical | impression trays, \*rubber bowl, \*spatula, alginate, \*Buffalo knife,\*base formers, vibrator, measuring gauge, disinfectant, baggies, wax bites |
| Wed., September 28  1:00 p.m. – 5:00 p.m. | Temporary Crown | Seldon, | Handout and  pp. 86 | Placing Temporary Crowns;  Placing and packing non-epinephrine retraction cords;  Take final impression | \*scissors, \*explorer, \*prepared tooth, non-epinephrine retraction cord, \*cotton pliers, \*plastic or blunt instrument, crimping pliers, contouring pliers, \*typodont, \*cement spatula, cement, Impression trays, final impression material |
| **Thurs., September 29**  **3:00 p.m. – 4:30 p.m**. | **Exam I** |  |  |  |  |
| Tues., October 4  **7:15 a.m. – 8:50 a.m.**  **Clinic** |  |  |  | Taking and Alginate impression - Clinical | impression trays, \*rubber bowl, \*spatula, alginate, \*Buffalo knife,\*base formers, vibrator, measuring gauge, disinfectant, baggies, wax bites |
| Wed., October 5 1:00 p.m. – 5:00 p.m. | Endodontic Procedures;  Mouth Protector;  Fabricating a vacuum-formed acrylic resin custom tray | Braud  Seldon, | Chapter 3 and Handout | Mouth Protectors;  Fabricating a vacuum-formed acrylic resin custom tray | vacuum former,\*study model cast, thermoplastic material, \*scissors, alcohol torch, \*spatula, |
| Thurs.,  October 6  3:00 p.m. – 3:50 p.m. | Dental Cements | Pacheco | Chapter 7  (Phillips’ Chapter 14) |  |  |
| Tues., October 11 **7:15 a.m. –8:5210 a.m.**  **Clinic** |  |  |  | Taking and Alginate impression - Clinical | \*impression trays, \*rubber bowl, \*spatula, alginate, \*Buffalo knife,\*base formers, vibrator, measuring gauge, disinfectant, baggies, wax bites |
| Wed., October 12  1:00 p.m. – 5:00 p.m. | Cements;  Trimming Models | Jaeger | Chapter 7 | Mixing Cements; Placing and Removing Class I and Class II Temporary Restorations;  Trimming study models | Mixing pads, \*spatulas, \*prepared teeth, typodonts ,\*explorer, glass slab  \*poured models, \*Buffalo knife, Black sandpaper, trimmers |
| Thurs., October 13  3:00 p.m. – 3:50 p.m. | Metals I | Pacheco | Chapter 5 and 11; (Phillips’ Chapters 5 and 15) |  |  |
| Wed., October 19  1:00 p.m. – 5:00 p.m. | No Class  Curriculum Review  Department Meetings |  |  |  |  |
| Thurs., October 20  3:00 p.m. – 3:50 p.m. | Metals II  **Quiz at 3:30** | Pacheco | Chapter 5 and 11; (Phillips’ Chapters 5 and 15) |  |  |
| Wed., October 26  1:00 p.m. – 5:00 p.m. | Rubber Dam; Rotary Instruments | Jaeger | Handout | Rubber Dam Placement | \*frame,\*punch,\*clamps, rubber dam,\*pliers, \*forceps,\*dental floss,\*scissors, \*typodont |
| Thurs., October 27  3:00 p.m. – 3:50 p.m. | Polymers I | Pacheco | Chapter 13;  (Phillips’ Chapters 6, 12 and 13) |  |  |
| Wed., November 2  1:00 p.m.- 5:00 p.m. | Pit and Fissure Sealants,  Direct Orthodontic Bonding | Seldon,  Kulbersh | Chapter 3 | Pit and Fissure Sealants,  Direct Ortho Bonding | Extracted teeth in plaster, \*Explorer, pit and fissure sealant material, \*floss, \*prophy angle, pumice, curing light, ortho bracket |
| **Thurs., November 3**  **3:00 p.m. – 4:30 p.m.** | **Exam II** |  |  |  |  |
| Tues., November 8  **7:15 a.m. – 8:50 a.m.**  **Clinic** |  |  |  | Pit and Fissure Sealants;  Pulp Testing; fourhanded dentistry | \*frame,\*punch,\*clamps, rubber dam,\*pliers, \*forceps,\*dental floss,\*scissors, \*Explorer, pit and fissure sealant material, \*floss, \*prophy angle, pumice, curing light, tooth paste, electric pulp tester, Endo Ice |
| Wed., November 9  1:00 p.m. - 5:00 p.m. | Tooth Whitening | Jaeger | Chapter 6 and Handout | Vital Tooth Bleaching Tray | Vacuum former, \*study model cast, thermoplastic material, \*scissors, alcohol torch, spatula |
| Thurs., November 10  3:00 p.m. – 3:50 p.m. | Polymers II | Pacheco | Chapter 3, pp. 49 – 53; (Phillips’ Chapters 6, 12 and 13) |  |  |
| Tues., November 15  **7:15 a.m. – 8:50 a.m.**  **Clinic** |  |  |  | Pit and Fissure Sealants;  Pulp Testing; fourhanded dentistry | frame, punch, clamps, rubber dam, pliers, forceps, dental floss, scissors, Explorer, pit and fissure sealant material, floss, prophy angle, pumice, curing light, tooth paste, electric pulp tester, Endo Ice |
| Wed., November 16  1:00 p.m. – 5:00 p.m. | Restorative Procedures;  Amalgam Class I | Abbott;  Stone | Chapter 5 and Handout | Placing Class I Amalgam Restorations;  Placing cavity liners and bases | Class I prepared teeth, \*explorer, \*amalgam instruments, amalgamator, amalgam material, \*cotton pellets, \*typodont, cavity liner material, cement material for bases |
| Thurs., November 17  3:00 p.m. – 3:50 p.m. | Polymers III | Pacheco | Chapter 3, pp. 49 – 53; (Phillips’ Chapters 6, 12 and 13) |  |  |
| Tues., November 22  **7:15 a.m. – 8:50 a.m.**  **Clinic** |  |  |  | Pit and Fissure Sealants;  Pulp Testing; fourhanded dentistry | frame, punch, clamps, rubber dam, pliers, forceps, dental floss, scissors, Explorer, pit and fissure sealant material, floss, prophy angle, pumice, curing light, tooth paste, electric pulp tester, Endo Ice |
| Wed., November 23  1:00 p.m. – 5:00 p.m. |  |  |  | Lab Catch Up |  |
| Thurs., November 24  3:00 p.m. – 3:50 p.m | No Class  Happy Thanksgiving!!!! |  |  |  |  |
| Wed., November 30  1:00 p.m. - 5:00 p.m. | Restorative Procedures; Amalgam Class II | Abbott;  Stone | Chapter 5 and 15, Handout | Placing Class II Amalgam Restorations;  Placing cavity liners and bases;  Placing and removing matrices and wedges; | Class II prepared teeth, \*explorer, \*amalgam instruments, amalgamator, amalgam material, \*cotton pellets, \*typodont, cavity liner material, cement material for bases, \*matrices, \*matrix bands, wedges |
| Thurs., December 1  3:00 p.m. – 3:50 p.m. | Ceramics I  **Quiz at 3:30** | Pacheco | Chapters 4 and 14; (Phillips’ Chapter 18) |  |  |
| Wed., December  7  1:00 p.m. – 5:00 p.m. | Restorative Procedures;  Class I resin bonded restorations  Care of Restorations | Abbott;  Stone  Jaeger,  Seldon | **Chapter 6, page 726 of Wilkins: *Clinical Practice of Dental*** | Placing Class I resin bonded restorations;  Care of Restorations | Class I prepared teeth, \*explorer, \*restorative instruments, amalgamator, resin material, \*cotton pellets, \*typodont,  \*prohpy angles, handpiece,\*explorer, \*burs, sandpaper discs, \*latch hook angle, \*Shofu kits, \*typodont |
| Thurs.,  December 8,  3:00 p.m. – 3:50 p.m. | Ceramics II | Pacheco | Chapters 4 and 14; (Phillips’ Chapter 14) |  |  |

**FINAL EXAM DATE TO BE ANNOUNCED. ALL CLINICAL and LABORATORY PROJECTS MUST BE COMPLETED AND TURNED IN BY 12:00 P.M., DECEMBER 14, 2016**

\*Occasionally the schedule may need to change due to instructor availability or educational outcome assessment. Important messages (such as cancellation of a class session) will be communicated through Blackboard and/or Detroit Mercy email addresses.

***Course Director Guidance****: leave the above statement highlighted and in red.*