RDN803: Principles of Occlusion

1. Course Directors
   Dr. Benita Sobieraj
   222 E Squire Hall
   Department of Restorative Dentistry
   829-6395
   bs3@buffalo.edu
   Office Hours: By appointment

2. Administrative Details
   Primary Course Designation: Clinical
   Course Type: Required
   Year/Semester: D1/2 (1st year/Spring)
   Credit Hours: 1.0

3. Participating Faculty
   Dr. Edward Monaco
   222C Squire Hall
   829-2867
   edwardjr@buffalo.edu

   Dr. Charles Severin
   40 Biomedical Education Bldg.
   829-2802
   severin@buffalo.edu

   Dr. Richard Ohrbach
   355 Squire Hall
   829-3590
   ohrbach@buffalo.edu

   Dr. Willard McCall
   355 Squire Hall
   829-3551
   wdmccall@buffalo.edu

4. Keywords
   Dental Occlusion, Balanced Dental Occlusion, Centric Dental Occlusion

5. Course Meeting Days, Times & Locations
   Wednesdays  8:00AM  Diefendorf Hall 203

6. Course Description
   Although the term "occlusion" literally means "to close", the "subject of Occlusion" includes all of the biological, biomechanical and behavioral factors that cause, influence, or result from mandibular function, with or without opposing occlusal contact. Thus, the term "Occlusion" implies that we are dealing with the structure and function of the entire masticatory system, as well as related structures and systems. It also implies that this subject, and therefore this course, encompasses information on the form and function of most components of the masticatory system, including the craniofacial complex, the teeth, the organization of the dentition, the periodontal supporting apparatus, the temporomandibular joints, the masticatory musculature, the neurosensory and neuromuscular systems, as well as mastication, deglutition, speech articulation, respiration, and parafunctional movements of the mandible associated with oral habits.
   At the end of this course, each student will be expected to thoroughly understand the form and function of dental occlusion, as well as the underlying systems, structures, functions and phenomena of opposing arch movements.

7. Course Purpose
   The primary purpose of dentistry is to maintain the functional integrity of the masticatory system. This is achieved, to a very great extent, by preserving and maintaining the dental occlusion.

8. Course Goals
   a. Broad Exposure: The direction of this course is to provide the student with a rational, balanced approach to the multidisciplinary subject of occlusion.
b. **Patient Clinical Application:** This fundamental subject is the bedrock of dentistry and clinical practice. A thorough understanding of dental occlusion, anatomy, all supporting systems and functions will be essential for the student and ultimately the dentist to intelligently, scientifically and professionally perform dental treatment. It is to this goal that this course is directed.

c. **Analysis:** Dental occlusion is a multidisciplinary subject with a biologic and behavioral basis that can be explored with the application of the scientific method and researched with the Evidence-Based Dentistry concept. It is the goal that this course will demonstrate this concept in the hope that the student will pursue his/her career with this mindset.

d. **Board Examination:** To facilitate didactic preparation for board examinations by presenting the topic of dental occlusion in a multidisciplinary manner.

9. **Learning Objectives**

a. **Broad Exposure:** To be able to understand the multidisciplinary aspect of dental occlusion and focus beyond teeth to the many systems involved and their interaction.

b. **Patient Clinical Application:** To be able to perform patient examination, diagnosis and treatment with a thorough understanding of dental occlusion's supportive system interaction.

c. **Analysis:** To be able to understand and place dental occlusion in the perspective of a subject that can be investigated with the scientific method and allow treatment to be based on science not empiricism.

d. **Board Examination:** To prepare dental students for the written phases of national and regional board examinations.

10. **Associated Competencies**

<table>
<thead>
<tr>
<th>Learning Objective</th>
<th>SDM Competency from Appendix 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>9a</td>
<td>1</td>
</tr>
<tr>
<td>9b</td>
<td>1, 21, 33, 35</td>
</tr>
<tr>
<td>9c</td>
<td>1, 21</td>
</tr>
<tr>
<td>9d</td>
<td>1, 21</td>
</tr>
</tbody>
</table>

11. **Student Evaluations Methods**

**Evaluation:** Knowledge of the material in this course will be evaluated by: 1. Weekly quizzes – 20 points (12 quizzes; 4 questions each - 10 highest scored quizzes count); 2. Midterm Examination – 30 points; 3. Final Examination – 50 points. Examinations and quizzes will include a series of multiple choice questions from the lectures as well as from the assigned reading.

**Grading**

<table>
<thead>
<tr>
<th>A=100-90</th>
<th>B=89-80</th>
<th>C=79-70</th>
<th>D=69-66</th>
<th>F=below 66</th>
</tr>
</thead>
</table>

**Grading Criteria**

<table>
<thead>
<tr>
<th>Midterm exam</th>
<th>Written examination</th>
<th>30%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final exam</td>
<td>Written examination</td>
<td>50%</td>
</tr>
<tr>
<td>Weekly quizzes</td>
<td>Announced quizzes</td>
<td>20%</td>
</tr>
</tbody>
</table>

*Evaluation Types (see Appendix 2 for full descriptions) 100%

12. **Learning Resources**

The reading assignments noted in the course outline are found on the DVD computer disk and are from: *A Textbook of Occlusion*, Mohl, Zarb, Carlsson and Rugh (eds), Quintessence Publishing Company, 1988 *Management of Temporomandibular Disorders and Occlusion, 4th Edition*, J.P. Okeson
13. **Instructional Media**
   a. Instructional Modes:  Verbal – auditory 40% Visual 60%
   b. Instructional Tools:  Models, Video, Slideshow (i.e. PowerPoint)
   c. Instructional Methods:  Lecture

14. **Course Schedule**
   *All classes will meet on Wednesdays at 8:00AM in Diefendorf Hall 203.*

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Assignments/Readings</th>
<th>Faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan. 6</td>
<td>Introduction and Terminology</td>
<td>Preface and Chapter 1 (in Mohl et al)</td>
<td>Dr. Sobieraj</td>
</tr>
<tr>
<td>Jan. 13</td>
<td>The Dentition</td>
<td>Chapter 4 (Mohl) Chapter 3 (Okeson)</td>
<td>Dr. Sobieraj</td>
</tr>
<tr>
<td>Jan. 20</td>
<td>The Dentition</td>
<td>Chapter 4 (Mohl) Chapter 3 (Okeson)</td>
<td>Dr. Sobieraj</td>
</tr>
<tr>
<td>Jan. 27</td>
<td>The Temporomandibular Joint</td>
<td>Chapter 6 (Evolution, Development and Histology) (Mohl)</td>
<td>Dr. Severin</td>
</tr>
<tr>
<td>Feb. 3</td>
<td>The Temporomandibular Joint</td>
<td>Chapter 6 (Function Anatomy) (Mohl)</td>
<td>Dr. Severin</td>
</tr>
<tr>
<td>Feb. 10</td>
<td>Introduction to Temporomandibular Disorders 1</td>
<td>Chapter 17, 19 (Mohl)</td>
<td>Dr. Ohrbach</td>
</tr>
<tr>
<td>Feb. 17</td>
<td>Introduction to Temporomandibular Disorders 2</td>
<td>Chapter 17, 19 (Mohl)</td>
<td>Dr. Ohrbach</td>
</tr>
<tr>
<td>Feb. 24</td>
<td>NO CLASS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mar. 3</td>
<td>MID-TERM EXAMINATION</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mar. 10</td>
<td>SPRING RECESS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mar. 17</td>
<td>Mandibular Movements</td>
<td>Chapter 9 (Mohl) Chapter 4 (Okeson)</td>
<td>Dr. Sobieraj</td>
</tr>
<tr>
<td>Mar. 24</td>
<td>Mandibular Musculature</td>
<td>Chapter 7(Mohl)</td>
<td>Dr. McCall</td>
</tr>
<tr>
<td>Mar. 31</td>
<td>Mastication, Degluton, Respiration and Speech</td>
<td>Chapters 10, 11 (Mohl)</td>
<td>Dr. McCall</td>
</tr>
<tr>
<td>Apr. 7</td>
<td>Introduction to Concepts of Occlusion</td>
<td>Chapter 12 (Mohl)</td>
<td>Dr. Monaco</td>
</tr>
<tr>
<td>Apr. 14</td>
<td>Determinants of Occlusal Morphology</td>
<td>Chapter 6 (Okeson)</td>
<td>Dr. Monaco</td>
</tr>
<tr>
<td>Apr. 21</td>
<td>Facebow</td>
<td>TBA</td>
<td>Dr. Monaco</td>
</tr>
<tr>
<td>Apr. 28</td>
<td>Semi-Adjustable Articulator</td>
<td>TBA</td>
<td>Dr. Monaco</td>
</tr>
<tr>
<td>TBA</td>
<td>FINAL EXAMINATION</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

15. **Course Policies & Procedures**

Policies and procedures of the course are written in accordance with the Faculty Handbook and Academic Policies. Course Policies are written to clarify expectations of the course director regarding attendance, behavior, grading, academic integrity, professionalism, disabilities, remediation, etc. Refer to the student handbook for more detailed information [http://intranet.sdm.buffalo.edu/student/handbook/](http://intranet.sdm.buffalo.edu/student/handbook/)

A. **Course Failure and Remediation**

Students who earn an "F" grade in this course may be given the opportunity to remediate. Remediation will be permitted only at the discretion of the School of Dental Medicine's Executive Council.

If permitted, remediation will take the form of written examinations and/or writing assignments and/or class attendance. A grade of C on this assignment will be required to remediate this course. The resulting grade will be listed on the transcript as "F/P". Incomplete grades will be awarded under those conditions as described in the student handbook.

B. **Disabilities**

This institution supports the goals and requirements of Section 504 of the Rehabilitation Act of 1973, which mandates academic adjustments, commonly called reasonable accommodations, be provided for students with documented disabilities. If you have a disability and may require some type of
instructional and/or examination accommodation, please contact me early in the semester so that I can provide or facilitate in providing accommodations you may need. If you have not already done so, you will need to contact the Disability Services office, the designated office on campus to provide services for students with disabilities. The office is located at 25 Càpen Hall and the telephone number is (716) 645-2608.

C. **Attendance**
As described in the student handbook, "attendance at scheduled classes, laboratory sessions, clinical assignments and examinations is mandatory." Absence can negatively affect both knowledge and grades. Students are expected to arrive on time to class. Late arrival is disruptive for both students and faculty, and interferes with effective learning. Absences fall into two general categories: planned and unplanned. Please review the student handbook for how to proceed in these instances, and advise me accordingly, or the Office of Student Affairs 829-2839 if there is an emergency or medical illness.

D. **Canceled Classes**
If, for any reason, a scheduled session is not held, the scheduled event will occur at the next session unless otherwise announced.

E. **Course Evaluation**
Comprehensive evaluation of this course will be administered online at the end of the course through the Office of Academic Affairs. Eliciting feedback and constructive criticism is important so that Course Directors may take action to improve the course. Students are expected to participate fully in this important process.

F. **Changes in the Course**
No changes have occurred in this course since the last time it was offered.

G. **Distractions in the Classroom/Behavioral Expectations**
As students in a health professions school, students are expected to display conduct consistent with their status as entering members of the profession. Specifics of expected conduct are listed in both the university "Student Conduct Rules, University Standards and Administrative Regulations" and in the School of Dental Medicine "Student Handbook". In recent years, cell phones, pagers, and other electronic devices have been sources of disruption in classrooms. All electronic devices except those specifically required by the course director or lecturer are not permitted in class. If these devices go off during class, the student with the device will be asked to leave.

H. **Professional Conduct**
The University has a responsibility to promote academic honesty and integrity and to develop procedures to deal effectively with instances of academic dishonesty. Students are responsible for the honest completion and representation of their work, for the appropriate citation of sources, and for respect for others' academic endeavors. By placing their name or student identifier on quizzes and examinations, students certify that the work is theirs and theirs alone. Students may not refer to any material or look at other student's papers during quizzes or examinations. Students observed so doing will receive a grade of zero for that quiz or examination. In addition, such incidents of academic dishonesty will be addressed as described in the university "Student Conduct Rules, University Standards and Administrative Regulations" the complete text of which can be found at http://www.student-affairs.buffalo.edu/judicial and as described in the School of Dental Medicine Student Handbook, the complete text of which can be found at: http://intranet.sdm.buffalo.edu/student/handbook/.