

**SPRINGFIELD TECHNICAL COMMUNITY COLLEGE**  
**ACADEMIC AFFAIRS**

Course Number: DHYG 400 Department: Dental Hygiene  
 Course Title: Community Dental Health Semester: Spring Year: 1999

**Objectives/Competencies**

<b>Course Objective</b>	<b>Competencies</b>
1. Given the unit on the professions of dentistry and dental hygiene, each student will be able to appreciate the development of the professions.	1. Define profession and professionalism 2. Differentiate among the three modes of professionalism as suggested by Ozar. 3. List and describe the three criteria of a profession. 4. Describe the development of the dental profession. 5. Describe the development of the dental hygiene profession. 6. State the name of the journal of the dental hygiene profession. 7. Describe the historical progression of dental hygiene schools from 1918 through the turn of the 21 <sup>st</sup> century. 8. Describe the present requirements for dental hygiene. 9. Describe the functions of the Council on Dental Education of the ADA as it relates to the profession of dental hygiene. 10. Describe the organization of the dental profession and the dental hygiene profession in the US, including the initial dates, the structure, the functions and the name of their

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<p>2. Given the unit on demographics of dentistry, each student will understand the differences among the need, demand and utilization of dental care.</p>	<p>respective periodicals.</p> <p>11. Discuss the functions of the World Dental Federation.</p> <p>12. Briefly discuss the advantages, disadvantages of private practice dentistry.</p> <p>13. Describe the concept of independent practice for dental hygienists.</p> <p>14. Describe the purpose of a graduate practice residency for dentists.</p> <p>15. Describe the responsibilities of dentists of the US Public Health Service</p> <p>16. List the 6 groups for which the USPHS provides direct clinical care.</p> <p>17. Discuss career opportunities in the dental corps of the armed services, the Department of Veterans Affairs, the USPHS, state employment and the other opportunities discussed in class.</p> <p>18. Describe the employment opportunities for dental hygienists through Civil Service and the Commissioned Corps.</p> <p>19. Describe employment opportunities and additional requirements required in order to work in academia.</p> <p>1. Discuss the population trends in the US including a discussion on population growth, change in age groups, geographic distribution, and ethnic composition.</p> <p>2. Discuss the dental implications of the changing US population.</p> <p>3. Define need, demand, perceived need, potential demand</p>

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<p>3. Given the unit on public health, the student will develop an understanding of the dental health component of the public health system in the United States</p> <p>4. Given the unit on structure of dental practice, the student will develop an understanding of the differences in fee for service practice, managed care practice, and socialized dentistry.</p>	<p>and utilization.</p> <p>4. Discuss the annual dental attendance in recent years and compare it with the demand from thirty years ago.</p> <p>5. Discuss how each of the following factors influences the use of dental services: gender, age, socioeconomic status, race and ethnicity, geographic location, general health and dental insurance.</p> <p>6. Discuss what we can expect the future of dental services to be.</p> <p>1. Define Public Health as it was defined by Winslow and as it is defined today.</p> <p>2. Describe the three criteria of a public health problem.</p> <p>3. Describe the rewards of working as a public health dentist or dental hygienist, giving examples.</p> <p>4. Discuss the varied dental public health accomplishments.</p> <p>5. Differentiate between dental public health and private dental health practice</p> <p>6. Compare and contrast the Nursing model of public health with the protocol for patient treatment in private care.</p> <p>7. Discuss the differences between personal and community health care.</p> <p>1. Discuss the dental care delivery systems in the United States and New Zealand</p> <p>2. Describe the various structures of the systems.</p> <p>3. Describe the various means by which dental care is paid for.</p>

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	<ol style="list-style-type: none"> <li>4. Describe the advantages and disadvantages of private practice for the provider and the patients.</li> <li>5. Differentiate between a solo practice and a group practice.</li> <li>6. Define Discuss the dental care delivery systems in the United States and New Zealand</li> <li>7. Describe the various structures of the systems.</li> <li>8. Describe the various means by which dental care is paid for.</li> <li>9. Describe the advantages and disadvantages of private practice for the provider and differentiate between open and closed panel systems.</li> <li>10. Describe the concept of managed care in medicine and dentistry.</li> <li>11. List the elements of managed care.</li> <li>12. Discuss managed care in dentistry.</li> <li>13. Describe the elements of an HMO and how it works.</li> <li>14. Describe capitation payment to the provider.</li> <li>15. Differentiate among the various types of HMO's including the staff model, group model, Independent Practice Association, and the Capitated Network (Direct Contract) Model.</li> <li>16. Discuss how the assumption of risk differs under fee for service, insurance, and capitation.</li> <li>17. Describe the Preferred Provider Organization (PPO).</li> <li>18. Discuss hospital dentistry in the United States</li> <li>19. Discuss franchised practices and department store clinics in the U.S.</li> <li>20. Describe the purposes of the Community and Migrant</li> </ol>

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<p>5. Given the unit on research designs, the student will be able to recognize good research design protocol.</p>	<p>Health Programs.</p> <p>21. Describe the function of the National Health Service Corps.</p> <p>22. Describe the work provided by the New Zealand School Dental Nurse Program.</p> <p>23. Describe the training received by the New Zealand school dental nurses.</p> <ol style="list-style-type: none"> <li>1. Define epidemiology, differentiating among descriptive, analytic, and experimental epidemiology.</li> <li>2. Describe how a protocol is an essential element to good research design.</li> <li>3. Discuss the essential features of a protocol for research with humans.</li> <li>4. Discuss the criteria to be met in order to accept a given exposure as a risk factor for a particular disease.</li> <li>5. Give an example of the <i>prevalence</i> of a condition.</li> <li>6. Describe the various types of <u>nonexperimental study designs</u> including <i>cross-sectional, longitudinal, and retrospective</i>.</li> <li>7. Describe the following types of non experimental study designs:             <ul style="list-style-type: none"> <li>Incidence</li> <li>Retrospective</li> <li>Prospective</li> <li>Cohort</li> <li>Case-control</li> <li>Ecologic</li> </ul> </li> </ol>

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<p>6. Given the unit on the measurement of oral disease, each student will be able to understand the principles of epidemiology.</p>	<p>8. Describe the following types of experimental study designs:  Clinical trials  Field trials</p> <p>9. Describe how the experimental and control groups are used in experimental study designs.</p> <p>10. Describe the rationale for using adequate numbers of subjects in research design.</p> <p>11. Describe <i>random allocation</i> and <i>stratification</i> of subjects.</p> <p>12. Describe the following non-randomized trial designs:  before-and-after (demonstrations)  crossover</p> <p>13. Describe the use of a comparison group in a non-randomized trial.</p> <p>14. Describe the use of a placebo in a control group.</p> <p>15. Describe and differentiate between a <i>blind trial</i> and a <u>double blind trial</u>.</p> <p>16. Differentiate between intraexaminer reliability and Inter examiner reliability.</p> <p>17. Give an example of the <i>standardization</i> or <i>calibration</i> of examiners.</p> <p>18. Describe the required duration of clinical trials for measuring caries, plaque-inhibiting agents, gingivitis, and calculus-preventing agents.</p> <p>19. Describe and give an example of a null hypothesis.</p> <p>20. Describe statistical significance, including Type I (alpha errors) and Type II (beta errors).</p>

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<p>7. Given the unit on caries indices, each student will be able to</p>	<ol style="list-style-type: none"> <li>1. Define <i>epidemiology, biological variation</i>.</li> <li>2. Give examples of contributory factors of multifactorial diseases.</li> <li>3. Describe the role of the epidemiologist and the general practitioner in measuring disease.</li> <li>4. Describe how epidemiology helps to prevent the occurrence of disease in future societies.</li> <li>5. Discuss how methods of oral epidemiology are used in the measurement of dental diseases.</li> <li>6. Describe what a representative population means and give an example of one.</li> <li>7. Differentiate between a <i>non-probability</i> and <i>probability</i> sampling plans.</li> <li>8. Define and give an example of each of the following types of sampling designs: accidental, quota, purposive, judgment, convenience, random, systematic, stratified random, and clusters.</li> <li>9. Define <i>sampling error</i>.</li> <li>10. Describe and differentiate between <i>counts, proportions</i> and <i>rates</i>.</li> <li>11. Describe the purpose of an index.</li> <li>12. Describe the purpose of a scale and give examples of ordinal, nominal, and interval (<i>ratio</i>) scales.</li> <li>13. Define and differentiate among the following index properties: <i>validity, reliability, quantifiability, sensitivity, and acceptability</i>, giving an example of each.</li> <li>14. Describe the difference between a negative reversal and a positive reversal, giving examples of each.</li> </ol>

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<p>utilize several different indices to measure the extent of dental caries in a population.</p> <p>8. Given the unit on measuring plaque and periodontal disease, each student will utilize appropriate indices to measure the plaque and periodontal disease of a population.</p>	<p>15. Describe sensitivity and specificity as it relates to the assessment of disease risk.</p> <ol style="list-style-type: none"> <li>1. Describe the difference between an <i>irreversible</i> index and a <i>reversible</i> index.</li> <li>2. Discuss the rules for utilizing the DMFT and the deft indices.</li> <li>3. Given sample DMFT scores, compute the tooth fatality, tooth mortality, the treatment needs ratio and the filled teeth ratio for dental caries.</li> <li>4. Describe the use of the RCI Index in measuring root caries.</li> </ol> <ol style="list-style-type: none"> <li>1. State the rationale for the use of indices to measure oral hygiene.</li> <li>2. Describe the use of Greene and Vermilion OHI-S index.</li> <li>3. Describe the use of Patient Hygiene Patient Performance Index (PHP) and the Plaque Index (PI).</li> <li>4. Calculate the PHP and PI when given appropriate raw scores.</li> <li>5. Give the score ranges for each of the above oral hygiene indices.</li> <li>6. Calculate the DI-S, the CI-S, and the OHI-S when given a group of appropriate raw scores.</li> <li>7. Differentiate between reversible and irreversible indices.</li> <li>8. Explain the use of each of the following indices: Gingival Index (GI), Gingival Bleeding Index (GBI), Sulcus Bleeding (SBI), Papillary Marginal Attached</li> </ol>

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<p>9. Given a unit on the measurement of dental fluorosis, each student will be able to utilize dental indices to measure fluorosis and to differentiate between fluorosis and non-fluoride opacities.</p> <p>10. Given the unit on evaluation of scientific literature, each student will be able to distinguish between well-researched scientific articles and those that are not.</p> <p>11. Given the unit on biostatistics, each student will be able to</p>	<p>Gingiva Index (PMA), PSR Index, Community Periodontal Index of Treatment Needs (CPITN).</p> <p>9. Give the score ranges for each of the indices mentioned in the above objective.</p> <p>10. Compute the scores for each of the above mentioned indices when given sample raw scores for actual raw scores.</p> <p>11. List the armamentarium and procedures to be followed when utilizing any of the periodontal indices studied.</p> <p>1. Discuss the uses of Dean’s Fluorosis Index.</p> <p>2. Describe the range of criteria used in the Dean’s Fluorosis Index and compare them to those used in the Tooth Surface Index of Fluorosis (TSIF).</p> <p>3. Differentiate between mild forms of dental fluorosis and non-fluoride opacities of enamel.</p> <p>1. Utilize the <i>Index to Dental Literature</i> and the on line databases such as <i>Medline</i> and <i>Pubmed</i> to procure a well-written scientific article.</p> <p>2. Describe peer review as it relates to the review of manuscripts</p> <p>3. Described the difference among a learned society, a professional organization, a reputable scientific publisher, and a commercial publisher.</p> <p>4. Recognize the hierarchy of information of quality of scientific articles.</p> <p>5. List the 3 kinds of papers published in dental journals.</p>

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<p>utilize basic statistical protocol in order to draw conclusions about the collected data.</p> <p>12. Given the unit on fluoride, each student will be able to describe the relevance between fluoride and human health.</p>	<p>6. Evaluate a scientific article in <i>The Journal of Public Health Dentistry</i> according to the criteria stated in the text.</p> <ol style="list-style-type: none"> <li>1. Describe when an ungrouped frequency and a grouped frequency distribution table are appropriate.</li> <li>2. Given a list of raw scores, construct an ungrouped and grouped frequency distribution.</li> <li>3. Construct a cumulative frequency distribution for an ungrouped and a grouped frequency distribution.</li> <li>4. List three measures of central tendency.</li> <li>5. Given raw scores, calculate the mean, median and mode.</li> <li>6. Describe when the mean, median, or mode is the best measure of central tendency.</li> <li>7. Describe the purpose of the two measures of dispersion, <i>range</i> and <i>standard deviation</i>.</li> <li>8. State why it is important to calculate the range and the standard deviation.</li> <li>9. Describe and interpret a <i>correlation coefficient</i>.</li> <li>10. Discuss the purpose of the <i>statistical significance</i>.</li> <li>11. Differentiate between the <i>statistical significance</i> and <i>clinical significance</i>.</li> <li>12. Describe the purpose of the <i>Student's t-test</i> and the <i>Chi-square Test</i>.</li> </ol> <ol style="list-style-type: none"> <li>1. Describe the history that led to the association between fluoride and caries reduction.</li> <li>2. Describe where fluoride is found naturally in the</li> </ol>

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<p>13. Given the unit on fluoridation, each student will be able to discuss the utilization of fluoridation as a public health measure.</p>	<p>environment.</p> <ol style="list-style-type: none"> <li>3. Describe the sources and amounts of fluoride intake a person receives from air, food and water.</li> <li>4. Describe the physiology and metabolism of fluoride</li> <li>5. State the optimum intake of fluoride for humans according to body weight.</li> <li>6. Discuss how fluoride effects or doesn't effect human health, especially mortality rates, cancer, Down's Syndrome, osteoporosis, and child development.</li> <li>7. Discuss fluoride toxicity, being able to state the Certainly Lethal Dose and the Safely Tolerated Dose.</li> <li>8. Describe dental fluorosis, what causes it and what is suggested to be the borderline zone.</li> <li>9. State the dosage at which very mild fluorosis has been documented.</li> <li>10. Describe how fluoride is thought to work in caries inhibition.</li> <li>12. Describe the effects of fluoride on various surfaces of the teeth.             <ol style="list-style-type: none"> <li>1. Define fluoridation and defluoridation.</li> <li>2. Describe the optimum levels for fluoridation in the United States.</li> <li>3. Describe how the optimum levels are determined.</li> <li>4. Describe the status of fluoridation throughout the world.</li> <li>5. Describe the status of fluoridation in the United States.</li> <li>6. Discuss how fluoridation is governed in the U.S.</li> <li>7. State the presently Recommended Maximum</li> </ol> </li> </ol>

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<p>13. Given the unit on dental health education, each student will be able to plan two classroom presentations, on dental care for a target population.</p>	<p>Contaminant Level for fluoride.</p> <ol style="list-style-type: none"> <li>8. Describe the rates of reduction in caries prior to and subsequent to 1980.</li> <li>9. Discuss the benefit of fluoride as it relates to caries reduction in adults, the primary dentition, and the prenatal benefits.</li> <li>10. Describe how partial exposure to fluoridation effects individuals.</li> <li>11. Discuss the economics of fluoridation.</li> <li>12. List the three compounds that are used for water fluoridation.</li> <li>13. Discuss savings in treatment costs that are made because of fluoridation.</li> <li>14. Discuss the impact of fluoridation on dental practice.</li> <li>15. Discuss how the politics of fluoridation has impacted its progress.</li> <li>16. Discuss how the public attitudes and knowledge influence fluoridation issues.</li> <li>17. Discuss organized opposition to fluoridation.</li> <li>18. Describe the outcome of court decision that involved the fluoridation issue.</li> <li>19. Describe how fluoridation is implemented in Massachusetts</li> </ol> <ol style="list-style-type: none"> <li>1. Given the conceptual model of education, describe the process by which learning takes place, including the influences and barriers.</li> <li>2. List the eight components of a lesson plan.</li> </ol>

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<p>14. Given a unit on alternative methods of fluoride, each student will be able to describe how these alternative programs are used in caries prevention for the community.</p>	<ol style="list-style-type: none"> <li>3. Define goal, aim, and behavioral objective.</li> <li>4. Write a goal for a dental health education lesson</li> <li>5. Write a behavioral objective for a dental health education lesson.</li> <li>6. List the five components of a behavioral objective.</li> <li>7. List and describe the three different types of behavioral objectives.</li> <li>8. Write a detailed lesson plan for a dental health education lesson.</li> <li>9. Describe the purpose of writing the goals, behavioral objectives, lesson content, time allocations, learning activities, media, and evaluation tools for a dental health education lesson.</li> <li>10. Given Dale's Cone of Experience, be able to describe which are more meaningful educational experiences.</li> <li>11. Select appropriate media and learning activities for dental health education lessons.</li> </ol> <ol style="list-style-type: none"> <li>1. Describe in detail the following fluoride mechanisms: fluoridated salt, fluoridated school drinking water, and dietary supplements.</li> <li>2. Discuss how professionally applied fluorides work to prevent caries.</li> <li>3. Discuss the working mechanism of fluoride varnishes.</li> <li>4. Describe the individualized tray application technique.</li> <li>5. Discuss the effectiveness of the supervised brushing programs of the 1960's.</li> <li>6. Discuss the use of fluoride mouth rinses, stating the</li> </ol>

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	<p>types, percentages, and dosages of each.</p> <ol style="list-style-type: none"><li>7. Discuss the use of fluoride dentifrices in caries reduction.</li><li>8. Discuss the benefits and flaws of multiple fluoride exposure.</li></ol>