Course Change Request

Indiana University
Fort Wayne Campus

Check Appropriate Boxes: Undergraduate credit [✓] Graduate credit [ ] Professional credit [ ]

1. School/Division: Health & Human Services/Dental Education
2. Academic Subject Code: DHVG
3. Current Course Number: H215
4. Current Credit Hours: 2.0
5. Current Title: Pharmacology and Therapeutics
6. Effective Semester/Year for changes listed below: Fall 2012
7. Instructor: S. Schimmele

Type of Change Requested (Check appropriate boxes and indicate changes)

☐ 8. Change course number to: ____________________________________________
   (must be cleared with University Enrollment Services)

☐ 9. Current course title: Pharmacology and Therapeutics
   Change to: ____________________________________________
   Recommended abbreviation (optional)
   (Limited to 32 Characters including spaces)

☐ 10. Current credit hours Fixed at: 2.0
     Change to credit hours fixed at: ____________________________
     or variable from: 1.0 to 2.0

☐ 11. Current lecture contact hours fixed at: ____________________________
     Change to lecture contact hours fixed at: ____________________________
     or variable from: ____________________________ to ____________________________

☐ 12. Current non-lecture contact hours fixed at: ____________________________
     Change to non-lecture contact hours fixed at: ____________________________
     or variable from: ____________________________ to ____________________________

☐ 13. Is this course currently graded with S-F (only) grades? Yes [ ] No [ ]
     Change to S-F (only) grading? Yes [ ] No [ ]

☐ 14. Does this course presently have variable title approval? Yes [ ] No [ ]
     Is variable title approval being requested? Yes [ ] No [ ]

☐ 15. Is this course being discontinued? For all campuses [ ] or for this campus only [ ]

☐ 16. Current course description

Change course description to (not to exceed 50 words)

17. Justification for change
    ASDA degree: the course will be taught for two hours for 8 weeks.
    (Use additional paper if necessary)

18. Are the necessary reading materials currently available in the appropriate library? [ ] Yes

19. A copy of every new course proposal must be submitted to departments, schools, or divisions in which
    there may be overlap of this course with existing courses or areas of strong concern, with instructions
    that they send comments directly to the originating Curriculum Committee. Please append a list of
    departments, schools, or divisions thus consulted.

Submitted by:

Department Chairman/Division Director

Date

Dean of Graduate School (when required)

Approved by:

Dean

Date

Chancellor/Vice-President

Date

University Enrollment Services

Date

After School/Division approval, forward the last copy (without attachments) to University Enrollment Services
for initial processing, and the remaining four copies and attachments to the Campus Chancellor or Vice-
President.

University Enrollment Services Final-White; Chancellor/Vice-President-Blue; School/Division-Yellow;
Department/Division-Pink; University Enrollment Services Advance-White
Indiana University-Purdue University Fort Wayne
DHYG H215 Pharmacology
Fall 2012

Day/Location: Tuesdays, 8:00 – 9:50 a.m. in Neff 133

Textbooks: 

Instructor: Steve Schimmele, DDS, MSD, Adjunct Assistant Professor, Department of Dental Education

Credit Hours: 1 (8 week course)

Course Description: Pharmacology is the study of drugs and their interactions/affects on patients. This course provides the dental assistant with basic knowledge in pharmacology as it pertains to the practice of dental assisting, as well as the background to understand how drugs work, the appropriate indications and prescribing of drugs, when pre-medication is indicated, contraindications, and adverse reactions of drugs. The course is based on PowerPoint lectures and text readings, reinforced by clinical case presentations.

Course Objectives:
The allied dental student will be able to:

1. obtain knowledge of pharmacology sufficient to permit the proper medical evaluation of patients for dental care.

2. understand the influences that drugs taken for non-dental purposes may have on a proposed treatment and be able to modify the treatment plan accordingly.

3. gain a thorough understanding of the therapeutic agents used in the routine practice of clinical dentistry and be able to provide the patient with appropriate instructions for compliance.

4. learn general principles of pharmacology and the ability to utilize appropriate pharmacology references.

5. write prescriptions so the dental assistant can act as an additional safeguard in the patient treatment chain.

6. understand about drugs that may alter dental treatment, emphasizing drug interactions.

7. learn about emergency drugs, drugs associated with pregnancy, and drug abuse.

Instructional Methods: Lectures, texts, clinical experiences.

Course Requirements: Weekly quizzes, mid-term exam, final exam.
**Evaluation Format:**

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<thead>
<tr>
<th>Weekly Quizzes</th>
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<tr>
<td>Midterm</td>
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<td>Final</td>
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**Grading Scale:**

<table>
<thead>
<tr>
<th>94-100</th>
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<td>88-93</td>
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<td>74 and below</td>
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6. Explain the various stages of testing through which a drug must pass before it is marketed for the general public.
7. List the information required in a prescription.
8. Perform the following conversions:
   a. Grains the milligrams and milligrams to grains (approximate).
      For example, \( \frac{1}{2} \) gr equals how many milligrams?
      5 mg equals how many grains?
   b. Pounds to kilograms and kilograms to pounds.
      For example, 25 lb equals how many kilograms?
      1.6 kg equals how many pounds?
   c. Milliliters to cubic centimeters and cubic centimeters to milliliters.
      For example, 15 ml equals how many cubic centimeters?
      40 cc equals how many milliliters?
   d. Teaspoonfuls to milliliters and milliliters to teaspoonfuls.
      For example, 2 tsp equals how many milliliters?
      5 ml equals how many teaspoonfuls?
9. Given a prescription, written using Latin abbreviations, state the directions to the patient in English.
   For example,
   
   Ibuprofen 400 mg
   Disp: 20 (twenty)
   Sig: 1-2 tabs q4h prn pain
10. Explain two precautions that should be taken in the dental office to discourage drug abusers.
11. List the components of the Controlled Substances Act and explain how it affects the dental office.

Lecture #3
1. Compare and contrast the anatomic and functional organization of the parasympathetic and sympathetic nervous systems.
2. State the responses of the major tissues and organ systems to the adrenergic (sympathetic) and cholinergic (parasympathetic) nervous systems.
3. State the location(s) of acetylcholine and norepinephrine, the two major neurotransmitter substances.
4. Describe the major methods by which the actions of acetylcholine and norepinephrine are terminated.
5. State the sites of the muscarinic and nicotinic receptors and describe an agent that blocks each of these sites.
6. Explain the difference in mechanism of action between the direct-acting and indirect-acting cholinergic agents.
7. Describe the pharmacologic effects of the cholinergic agents on the heart, gastrointestinal tract, and eye.
8. State two major uses of the cholinergic agents.
9. Describe a unique dental use for pilocarpine.
10. State a use for physostigmine in the treatment of an overdose.
11. Describe the pharmacologic effects of the anticholinergic agents on the exocrine glands, smooth muscle and eye.
12. Explain the adverse reactions associated with the anticholinergic agents.
13. State the contraindications and cautions to the use of anticholinergic agents and explain their relationship to the pharmacologic effects of these agents.
14. State the major therapeutic uses of the anticholinergics.
4. Describe the two adverse reactions of the opioids to which tolerance does not develop.
5. Describe the two most common adverse reactions associated with the opioids.
6. Define the following terms:
   a. Physical dependence
   b. Withdrawal
   c. Tolerance
7. Discuss three conditions in which opioids would be contraindicated or in which they should be used with caution.
8. Explain the additive respiratory depression with opioid analgesic agents and state the other drug with which they are additive.
9. Describe the four major therapeutic uses of the opioids.
10. State the ways in which the opioids differ from one another.
11. Describe what is meant by “morphine is the prototype”.
12. State the most potent orally effective opioid.
13. Describe the major use of methadone at the present time.
14. Explain the place for the use of meperidine in dentistry.
15. Describe two major disadvantages to the use of pentazocine.
16. Explain the agonist and antagonist properties of pentazocine, and describe how this can produce a problem in an opioid addict.
17. Explain why pentazocine is combined with naloxone in Talwin-NX.
18. Describe the use of the most frequently employed opioid in dental practice.
19. Explain the use of propoxyphene in dentistry, and state the degree of its proven clinical effectiveness.
20. Explain the use of naloxone for any emergency situation. State the situation in which it would be indicated. Contraindicate.
21. Discuss the disease states in which a particular analgesic drug should be avoided, and select an alternative choice.
22. Discuss the partial agonists in dentistry.

Lecture #6
1. Name the properties of the ideal local anesthetic.
2. Differentiate between the two major chemical groups of local anesthetic agents.
3. Contrast the allergenicity and metabolism of the ester and amide local anesthetics.
4. List the systemic adverse reactions to the local anesthetics.
5. List five injectable local anesthetic agents and give their composition.
6. Explain the presence of agents other than the local anesthetic in a dental cartridge.
7. State the rationale for the inclusion of vasoconstricting agents in local anesthetic solution.
8. Give the maximum recommended dose of three common local anesthetics.
9. State the maximum safe dose of the two vasoconstrictors used in dentistry for both the normal and the cardiac patient.
10. Explain how to determine the amounts of vasoconstrictor and local anesthetic agent present in a given solution. State the reason for recording the information in the chart.
11. Name an agent that could be used as a local anesthetic if a patient is allergic to both esters and amides.

Lecture #7
1. Explain the rationale for the use of agents effective mainly against gram-positive organisms in the treatment of most dental infections.
2. Describe the proper use of prophylactic antibiotics in dentistry (other than for infective endocarditis).
3. Define the following terms:
   a. Spectrum
   b. Bacteriostatic
   c. Bactericidal
   d. Blood level
   e. Synergism
   f. Antagonism
   g. Resistance

4. List the three groups of penicillins and explain the differences among these groups.

5. State the most serious adverse reaction associated with the penicillins.

6. Explain the use of erythromycin in dentistry.

7. Name the major adverse reaction associated with all erythromycins, and state the one adverse reaction associated primarily with the estolate ester.

8. Explain the major adverse reaction associated with the clindamycin group of antibiotics.

9. Describe two major therapeutic uses for the clindamycin antibiotics. Explain its special interest (renewed) to dentistry.

10. Name two oral cephalosporins useful in the treatment of systemic infections.

11. State one similarity and two differences between the cephalosporins and penicillin G.

12. List three aminoglycoside antibiotics and state two major adverse reactions associated with their use.

13. State one major adverse reaction, associated with the tetracyclines, which is seen in the dental office.

14. Name two special instructions that a patient given tetracycline should be told.

15. Name two differences between tetracycline and doxycycline.

16. Describe metronidazole’s special spectrum of interest in dentistry. Name an activity to avoid while ingesting it.

17. State the adverse reaction associated with chloramphenicol that precludes its use in dentistry.

18. Name the most common antifungal agent useful in the treatment of oral candidiasis.

19. State the three dosage forms useful in dentistry.

20. State two other agents (not no. 18 answer) useful for oral candidiasis. State one problem with each agent.

21. Describe the reason for difficulty associated with the treatment of herpes labialis with antiviral agents. Describe its oral use.

22. Describe the drug regimen for the prophylaxis of bacterial endocarditis in patients with a history of rheumatic heart disease, without any allergy to penicillin and with an allergy to penicillin.

Lecture #8

1. Define the following terms:
   a. Sedative
   b. Hypnotic
   c. Minor tranquilizer
   d. Major tranquilizer

2. State four differences between the major and minor tranquilizers.

3. Name two major pharmacologic effects of the barbiturates.

4. List the four groups of barbiturates and state what differentiates these groups from one another.

5. Describe the major adverse reactions of the barbiturates.

6. Name the one absolute contraindication to the use of the barbiturates.

7. Describe the mechanism of the most important drug interaction of the barbiturates.
8. Explain the important differences between the barbiturates and the non-barbiturate sedative-hypnotic agents.
9. Name four benzodiazepines, two that are shorter acting and two that are longer acting.
10. State the major differences between the benzodiazepines and the barbiturates.
11. Explain why the sedative-hypnotic agents are controlled substances and how their abuse determines on what Schedule (II, III or IV) they are listed.
12. Describe the adverse effect that can occur with intravenous administration of diazepam but not with oral administration.
13. Describe the parenteral use of diazepam and midazolam in dentistry. State a benefit over oral use.
14. State three uses of the benzodiazepines.
15. Review the following terms:
   a. Tolerance
   b. Withdrawal
16. Name and describe the four stages of anesthesia.
17. Differentiate between the three routes of administration of the general anesthetics.
18. State the pharmacologic effects of the general anesthetics.
19. Describe the effects observed with varying concentrations of nitrous oxide.
20. Explain the rationale for the use of several agents during general anesthesia.
21. List the contraindications to the use of nitrous oxide.
22. State the potential hazards associated with the general anesthetic agents.

Lecture #9
1. Describe some contraindications to dental treatment that are associated with the cardiovascular system.
2. Describe the major pharmacologic effect associated with digoxin.
3. Describe the adverse effect associated with the digitalis glycosides that can be additive with epinephrine. Name another agent that would exacerbate this side effect.
4. Explain the rationale for determining the location of a patient’s angina medication before rendering dental treatment. Tell what other measures might be taken in ambulatory patients to minimize the chance for problems.
5. For each of the following drugs, state their mechanism of action and two major side effects:
   a. Hydrochlorothiazide
   b. Clonidine
   c. Propranolol
   d. Prazosin
   e. Captopril
6. Describe the alterations in dental treatment required for each of the following adverse reactions:
   a. Orthostatic hypotension
   b. Xerostomia
   c. Psychic depression
   d. Gingival hyperplasia
7. Explain the procedures that must be followed when treating a patient taking warfarin. Name one drug that should not be administered to such a patient for pain relief. State the laboratory test used to follow warfarin therapy.
8. Explain the use of diuretics for the cardiovascular patient. Name their major side effect and state a management strategy.
24. Discuss the adverse reactions associated with marijuana use.
25. Describe a therapeutic use of marijuana.
26. Describe the long-term problems associated with cigarette smoking.
27. Compare and contrast the terms “addiction” and “habituation”.
28. State the major adverse effects associated with the use of cocaine (“crack”).
29. State oral changes that can occur with smokeless tobacco.

Lecture #12

1. State what general measures the dental hygienist should be familiar with in order to respond to any emergency situation.
2. For each of the following common emergencies, state the signs, symptoms and treatment (including drugs):
   a. Cardiac arrest
   b. Angina pectoris
   c. Acute myocardial infarction
   d. Convulsions
   e. Syncope
   f. Asthma
   g. Anaphylactic shock
   h. Apnea
   i. Hypoglycemia
3. List the equipment required to treat the emergencies in question 2 and explain the rationale for the inclusion of each item.
4. Give the names and potential uses of the drugs required in an emergency kit for the dental office.
5. Concoct an imaginary emergency kit for the office in which you work.