

AP- 2/14/08
Info. - 3/25/08

07-40

Undergraduate Distance Education Review Form

(Required for all courses taught by distance education for more than one-third of teaching contact hours.)

Existing and Special Topics Course

Course: FDNT 213 Life Cycle Nutrition

Instructor(s) of Record: Diane C. Wagoner MS RD LDN

Phone: 357-3578

Email: dwagoner@iup.edu

Step One: Proposer

A. Provide a brief narrative rationale for each of the items, A1- A5.

1. How is/are the instructor(s) qualified in the distance education delivery method as well as the discipline?

The instructor for this course, Diane C. Wagoner is a registered dietitian and has her MS in Food and Nutrition. She has been an instructor for the Department of Food and Nutrition for 15 years and has taught FDNT 213 in the traditional face to face format since 1998. Since the summer of 2000 she has been teaching FDNT 143 Nutrition and Wellness via the online format thus she is well versed in the use of Web Ct as a class management/communication tool.

2. How will each objective in the course be met using distance education technologies?

Relate the concepts learned in FN 212 Nutrition to the principles of growth and development and apply them to pregnancy, infancy, childhood, pubescence/adolescence, middle and late adulthood.

There will be a module for each stage of the life cycle. Each module will include Power Point component, assigned readings from the text and either a case study or discussion question assignment. Each module will also include a timed exam.

Analyze nutrient needs and deficiencies during pregnancy, lactation, infancy, childhood, and pubescence/adolescence, and adulthood.

The use of case studies and discussion questions require the students to apply the information reviewed for that particular stage of the life cycle. There are several case studies and numerous discussion questions for each module that will be assigned among the students in the class. Students will be required to post/share case study results with one another using the Main Discussion topic area of WebCT. In some cases there is not ONE right answer but many, thus sharing of responses allow the students to benefit from each others ideas. Also, discussion questions will be posted by the instructor periodically and students will be requested to participate in on-line discussion forums, both threaded and unthreaded.

Investigate and evaluate selected life cycle nutrition issues and research.

Throughout the course students will be assigned various Web Based research activities. Students will be required to post and share research results with other classmates enrolled in the class.

Research topics include: **La Leche League: Breastfeeding Center for Disease Control: The Use of Growth Charts, and TEAM Nutrition: The National School Lunch Program.**

Received

FEB 06 2008

Liberal Studies

3. How will instructor-student and student-student, if applicable, interaction take place?

Web Ct will be the primary vehicle for communication between the student and instructor as well as to facilitate student to student communications. Features of WebCT to be used will include email and bulletin board discussion forums (through both public and private postings)

- The **MAIN** topic area...or forum will be used as a discussion area for all the content related issues associated with the class.
- **YOURNAME** is a topic area that will be used primarily by students as a place in which to post homework assignments to the instructor for grading. This area will keep all assignments in one place so that the instructor can locate them, grade them, and provide the student with individualized feedback as needed. This is often referred to as the "Private Posting Area" since is set up in a way where the contents can only be viewed by the individual student and the instructor.

4. How will student achievement be evaluated?

This course will be divided into 8 Modules, one for each stage of the life cycle. For each Module the student will be evaluated on the completion of the following types of activities:

- **On-line Quizzes:** Quizzes will be administered via WebCT and available to students on a limited basis regarding dates/time to complete. Questions will include multiple choice and matching that can be computer scored. Students will receive immediate feedback on quiz scores and often, specific feedback regarding rationale for the question's answer.
- **Participation in on-line discussions:** Periodically posed/assigned by the instructor: The students will be expected to respond to the questions as well as comments made by other students.
- **Completion of Cases studies:** Various case studies will be assigned.
- **Current News Log:** All students will be required to maintain a current news log. This assignment requires the student follow and log current research/news throughout the semester in any area of the lifecycle. Each log entry must include the topic, source, a summary of the news item and a personal reflection regarding the topic.

5. How will academic honesty for tests and assignments be addressed?

Students will be expected to adhere to the University Academic Integrity Policy. A random test bank and timed exams will be used. Exams are also set up within Web Ct to prohibit printing. Additionally, the use of the "honor code" style statement will appear at the beginning of each quiz. This informs the student about dishonesty and how it will be addressed. Discussion questions and news logs will graded on the individual's participation in regard to depth and content of their discussion.

- B. Submit to the department or its curriculum committee the responses to items A1-A5, the current official syllabus of record, along with the instructor developed online version of the syllabus, and the sample lesson. This lesson should clearly demonstrate how the distance education instructional format adequately assists students to meet a course objective(s) using online or distance technology. It should relate to one concrete topic area indicated on the syllabus.

Step Two: Departmental/Dean Approval

Recommendation: Positive (The objectives of this course can be met via distance education)

Negative

Wanda V. Deane-Reimer

Signature of Department Designee

Date

Endorsed:

Janleen M. Zoni
Signature of College Dean

Feb. 5, 2008
Date

Forward form and supporting materials to Liberal Studies Office for consideration by the University-wide Undergraduate Curriculum Committee. Dual-level courses also require review by the University-wide Graduate Committee for graduate-level section.

Step Three: University-wide Undergraduate Curriculum Committee Approval

Recommendation: Positive (The objectives of this course can be met via distance education)

Negative

Gail Sechrist
Signature of Committee Co-Chair

Feb. 18, 2008
Date

Forward form and supporting materials to the Provost within 30 calendar days after received by committee.

Step Four: Provost Approval

Approved as distance education course

Rejected as distance education course

[Signature]
Signature of Provost

2/19/2008
Date

Forward form and supporting materials to Associate Provost.

FDNT 213 Distance Education

Sample Lesson for Module 2: Preconception Nutrition/Nutrition and Pregnancy

This lesson addresses the role of nutrition and how it relates to the Pregnancy stage of the lifecycle. It is accompanied by chapter readings, discussion questions and a case study regarding the importance of folate/folic acid in the diet.

Chapter Readings

Chapters 2,3,4,5

On line Discussion -Discussion Questions

I will assign various discussion questions to students .They will be required to post their responses by a particular date. Some questions may require a threaded discussion where students respond to each other's answers and ideas.

PowerPoint Lesson

The PowerPoint notes:

- Address physiological changes that occur during pregnancy and how they influence energy and other nutrient requirements.
- Describe the normal events of fetal development and discuss how malnutrition impairs fetal development.
- Discuss the recommended pattern of weight gain during pregnancy.
- Describe wise food choices for the pregnant female including the importance of adequate folic acid.
- Describe the possible causes and nutritional (or other) treatments of conditions in high-risk pregnancies.
- Explain the effects of high risk behavioral practices (smoking, drugs, alcohol)

Folate and Pregnancy Case Study

This case study addresses the differences between the different forms of folate/folic acid and how it applies to a "real world" scenario. It requires the student to evaluate the current diet of a pregnant female and make suggested changes based on the most current scientific recommendations.

Pregnancy Quiz

Students will take a timed quiz consisting of multiple choice and matching. The questions will be scrambled from a randomized test bank.

FDNT 213 Life Cycle Nutrition

Discussion Topics: Nutrition during Pregnancy

1. Define the term critical period. How do adverse influences during critical periods affect later development?
2. Why it is so important for a female of normal body weight to gain about 25 lb. during pregnancy.
3. What is the recommended pattern of weight gain during pregnancy for a woman of healthy weight?
4. Which nutrients are needed in the greatest amounts during pregnancy? Why are they so important?
5. What is the significance of low birth weight in terms of the child's future?
6. Should a pregnant women "eat for two"?
7. Why does heartburn sometimes occur during pregnancy?
8. Why does constipation occur, especially during the later months of pregnancy?
9. Explain why some women experience morning sickness. What is the treatment for mild cases?
10. Explain at least 3 effects of smoking on the outcome of pregnancy.
11. Explain at least 3 effects of prenatal cocaine use on the outcome of pregnancy.
12. What is the recommendation for caffeine intake during pregnancy?
13. What is pregnancy-induced hypertension (preeclampsia-eclampsia)? What is the treatment of each.
14. Describe some of the special problems/concerns of the pregnant adolescent.

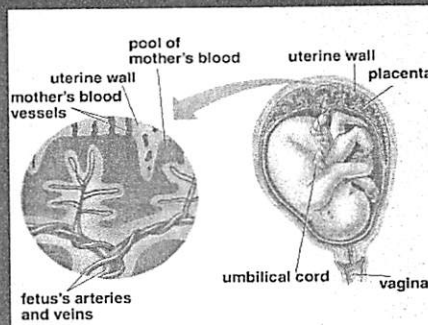
Nutrition During Pregnancy

Physiological Changes During Pregnancy

- Uterus: ↑ size and strength
- Breast: prepare for milk production
- Blood Volume: ↑ to carry additional nutrients
- Weight Gain: ↑ in maternal tissue
- Organs: work harder to deliver substances, clear wastes
- BMR: ↑ due to more active tissues
 - 9 mths of gestation/expend 55,000 kcal
- Development of the placenta

The Placenta

- Organ : develops inside uterus
- Supplies nourishment to infant via nutrient, oxygen and waste exchange (respiration, absorption, excretion)
- Metabolizes glucose for it's own energy needs
 - actively pumps glucose into fetal bloodstream
 - ↑ storage of glycogen in early pregnancy
 - supplies glucose to rapidly growing fetus / 3rd trimester
 - 3rd trimester: fetus makes own insulin



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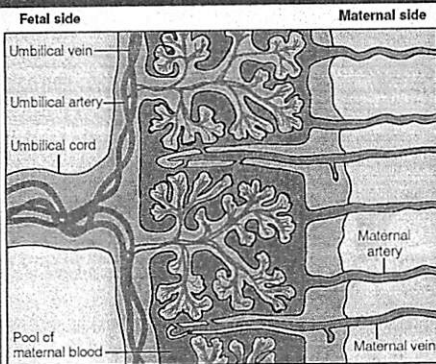


Fig. 4-5, p.81

The placenta....

- Produces hormones:
 - HCG- Human chorionic gonadotropin
 - stimulate secretion of progesterone and estrogen
 - Lactogen- stimulates metabolism of glucose to fat
 - produced during 2nd half of pregnancy
 - Estriol- major estrogen of pregnancy

Fetal Growth and Development

- **Zygote: Fertilized Ovum**
 - divides within 1 day after fertilization
 - floats freely; receives nutrients from intrauterine fluid
 - embeds in endometrium
 - cell division occurs ...layers of cells form placenta, amniotic sac, embryo... cell differentiation.

- **Embryo: 2-8 wks after conception**
 - cells double approx every 24 hrs
- **3 layers:**
 - Ectoderm-evolves into nervous system
 - Mesoderm-evolves into muscular, skeletal, circulatory, internal organs
 - Endoderm- glands, digestive system, respiratory, excretory
- By 8th wk, organs are formed: CNS, breathing heart, digestive system, fingers, toes

Growth and Development

- **Fetus: Developing infant**
 - 3-9 months
- **Critical Periods** - Intense development and rapid cell division. Events scheduled for these times can occur only then, no later
 - Critical Period for Neural Tube Development is 17 - 30 days
 - Teratogenic: Exposures that produce malformations in embryo or fetus.

Developmental hallmarks in prenatal life:

Mth of gestation	Significant events
1	Brain and heart begin to develop
2	Skeleton begins to develop
3	Kidneys begin to function
4	Lungs begin to develop
5	Fetus begins to move
6	Fetus begins to swallow
7	Fetus begins to breathe
8	Fat accumulation begins
9	Lungs begin to function on their own

Birthweight is the most reliable indicator of infants health!

Two characteristics of mother's weight determine infant birth weight

1. **Weight for height before conception**
Underweight - BMI < 19.8
... Increase risk of LBW infants

Overweight- BMI > 26.0

Increased risk of hypertension, gestational diabetes, postpartum infections. Weight loss diets never desirable during pregnancy

Birthweight...con't

2. Weight gain during pregnancy

Normal weight : 25-35lb.
 Underweight: 28-40lb.
 Overweight: 15-25lb

- Pattern of wgt gain is just as important as total wgt gain!
 - 4-5 lbs - 1st trimester
 - 1 lb/ wk until term(gradual, consistant changes)

Table 4.16 Pregnancy weight gain recommendations³¹

Prepregnancy Weight Status	Recommended Gain*
Underweight, BMI <19.8	28-40 lb (12.7-18.2 kg)
Normal weight, BMI 19.8-26.0,	25-35 lb (11.4-15.9 kg)
Overweight, BMI >26.0-29.0	15-25 lb (6.8-11.4 kg)
Obese, BMI >29.0	15 lb (6.8 kg) at least
Twin pregnancy	35-45 lb (15.9-20.5 kg)

*Young adolescents should achieve gains at the upper end of ranges, short women at the lower end.

Significance of LBW...

- < 5 1/2 lbs = LBW
- < 3 1/3lbs = Very LBW
- incomplete growth
- underdevelopment of body organs
- compromised digestive system

Here's where the weight goes for a woman who gains 33 pounds

- Breasts 1.1 lb
- Fetus 8.3 lb
- Placenta 1.6 lb
- Amniotic fluid 2.0 lb
- Uterus 2.4 lb
- Fat stores 8.5 lb
- Blood 3.0 lb
- Other fluid 6.1 lb

TOTAL = 33 lb
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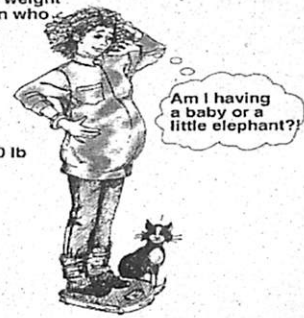


Table 4.14 Diseases and other conditions in adults related to smallness or thinness at birth^{26,47}

Allergies	Mood disorders
Autoimmune diseases	Obesity
Bronchitis	Ovarian cancer
Cardiovascular disease	Polycystic ovary syndrome
Decreased bone mineral content	Schizophrenia
Gestational diabetes	Short stature
Hypertension	Stroke
Kidney disease	Subfertility in males
Metabolic syndrome	Suicide
	Type 2 diabetes

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Table 4-14, p.87

Energy and Nutrient Needs

- Energy:
 - additional 300 kcals /2nd and3rd trimester = 1 extra serving from each of the 5 food groups
- Protein: additional 10 gms
- CHO: at least 50% of total calories (minimum of 175 gms)
- Fat: 30%- 33%

- *Folate: DRI 600ug
- ↑ blood volume/rapid cell division, DNA synthesis, RBC formation

Sources?

Fresh fruits /vegetables...
Fortified grains...since 1998

Folate Deficiency...

- Neural Tube Defects: (NTD's)
 - Malformations of the spinal cord and brain
- What we know:
 - Genetic and environmental factors
 - Impaired metabolism of folate may be involved

Functions of Folate

- Folate
 - Methyl group donor and enzyme cofactor in metabolic reactions involved in the synthesis of DNA, gene expression, gene regulation.
 - Deficiency impairs these processes.
 - Abnormal cell division, etc

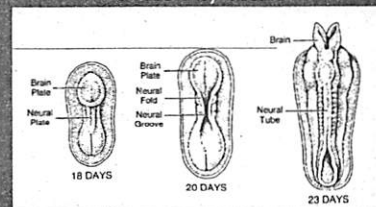
AND...

- Folate : acts as methyl donor in conversion of homocysteine to methionine.
- Deficiency: lead to accumulation of homocysteine resulting in a methionine shortage...at crucial stage of fetal development.

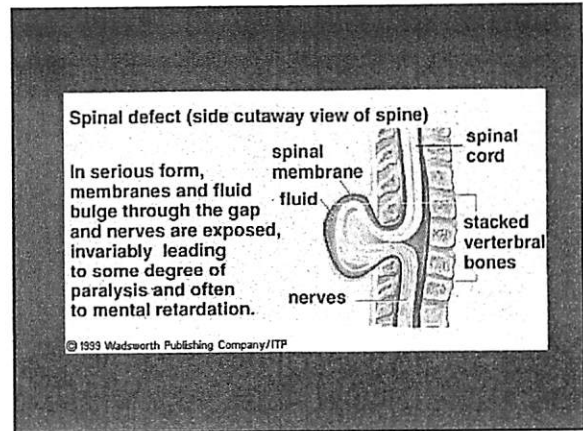
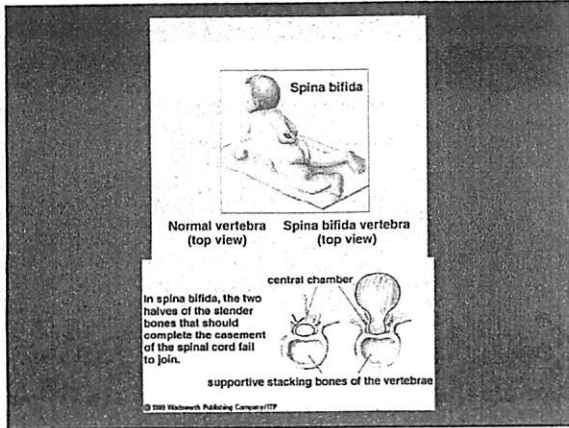
- Vit B12 may also be required to prevent NTD
 - B12 activates the folate enzyme
 - Sources of B12
 - animal

Get the "B" Attitude

Neural Tube Defects —
how do they occur?



Neural tube closing properly to form spinal cord and brain.



- Iron
 - DRI = 27mg
 - Enlarged blood volume
 - Fetus begins to create own stores
 - Usually recommend supplement for folate and iron

- * Zinc: 15mg
 - Cofactor for many enzymes: DNA/RNA synthesis
 - Low blood zinc = significant predictor of LBW
 - bioavailability higher in animal foods
 - Grains vs. legumes?

- ### Nutrient Needs
- Calcium:
 - Healthy people 2010: Increase calcium intake so at least 50% of pregnant women consume 3 or more servings/day of foods rich in calcium.
 - 1300mg/day 14-18yr
 - 1000mg/day 19-50yr
 - Fetus acquires most of it's Ca in last trimester.

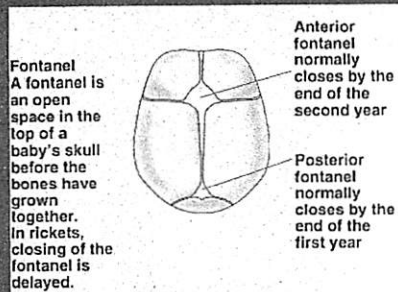
- ### Calcium Metabolism During Pregnancy
- ↑ absorption of Ca
 - ↑ excretion of Ca
 - ↑ in bone mineral turnover
 - Vit C- extra 10mg/day

- Vit D-
 - DRI 5ug
 - aides in absorption of Ca
 - deficiency:
 - rickets, osteomalacia, delayed closing of fontanel (soft spot)



■ Rickets in children

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Fontanel
A fontanel is an open space in the top of a baby's skull before the bones have grown together. In rickets, closing of the fontanel is delayed.

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Nutrient Needs

- Vit A:
 - current RDA: 800ug
 - growth
 - cell differentiation
 - epithelial tissues

Deficiency: retarded growth
preterm birth
LBW

Choosing nutrient's dense foods is key!

Table 12-7
Daily Food Guide for Teenagers, Pregnant and Lactating Teenagers, and Adult Pregnant and Lactating Women

Food Group	Teenagers	Pregnant or Lactating Teenagers	Pregnant or Lactating Women
Meat and meat alternates	2 to 3	3	3
Milk and milk products	3	4	3 to 4
Vegetables	3 to 5	4 to 5	4 to 5
Fruits	2 to 4	3 to 4	3 to 4
Breads/cereals/rice, pasta	6 to 11	9 to 12	7 to 11

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Table 4.28 Basics of a good diet for normal pregnancy

- Good pregnancy diets:
1. Provide sufficient calories to support appropriate rates of weight gain.
 2. Follow the Food Guide Pyramid food group recommendations.
 3. Provide all essential nutrients at recommended levels of intake from the diet (with the possible exception of iron).
 4. Include 400 mcg of folic acid daily.
 5. Provide sufficient dietary fiber (28 g/day)
 6. Include 9 cups of fluid daily.
 7. Include salt "to taste."
 8. Exclude alcohol and limit coffee intake to ≤ 4 cups per day.
 9. Are satisfying and enjoyable.

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e 4-28, p.107

High Risk Pregnancies

Hypertensive Disorders?

- Once known as "pregnancy induced hypertension"
- Refer to Table 5.1 in Brown
-Increased blood pressure during pregnancy....may signal onset of pre-eclampsia.

Preeclampsia

- is "defined as the onset of hypertension and proteinuria in the second half of pregnancy."
- high blood pressure(hypertension)
- protein in urine(albuminuria)
- abnormal edema
- abdominal pain
- vomiting
- severe headache
- visual disturbances.

Risk Factors- Table 5-5

Severe Cases = Eclampsia: characterized by convulsions/coma

Treatment

- Regulate blood pressure and prevent convulsions
- Mild cases - bed rest, medication
- Eclampsia - induced labor or c-section
- Proposed treatments?
 - Sodium restriction?
 - Ca supplementation?
 - Magnesium sulfate injections
 - Ca Supplementation with Linoleic Acid?
 - Vitamin C and E?

Gestational Diabetes

- Usually appears later in pregnancy
 - Insulin resistance or Insulin production?
- Complications:
 - High birth weight infant/difficult delivery
- Nutrition management:
 - Prevent excessive weight gain

Concerns of the Pregnant Adolescent

- Iron Deficient
- ↑ rate of stillbirth, preterm infants, LBW infants
- Poor diet...fast foods, poor food selection
- Nutrients for growth inadequate
- Rec. Weight gain - 35 lb.
- ↑ in dairy / 4 servings

Effects of Smoking?

- Poor diet, less food?
- Increase chance of LBW
 - restricts blood flow, limiting O₂ / nutrients to fetus, limits waste removal
- Increased risk of retardation, complications at birth
- Higher incidence of SIDS related deaths and spontaneous abortions

United States Surgeon General

- "...of all the preventable causes of LBW in the U.S., smoking has the greatest impact."
- Other tobacco use...constituents are absorbed into the bloodstream.

Prenatal Cocaine Use

- Impairs fetal development
- higher risk of preterm infants, LBW, SIDS
- impaired cognitive and motor development

Other concerns

- Sugar Substitutes...found to be safe
 - exception : PKU
 - rise in blood levels impairs fetal development
- Caffeine
 - caffeine crosses placenta
 - heavy use...LBW and SIDS?

"Heavy" = 300 mg/day (2-3 c. coffee)

Recommendation - No more than 1cup/day...some say none!

Fetal Alcohol Syndrome

What is Fetal Alcohol Syndrome?

- ...a condition characterized by malformations and disabilities as a direct result of alcohol consumption by mother during time of pregnancy.
- 1 in 750 babies born with FAS!!!!
- It is totally preventable!!!!
- There is no treatment!!!!

Effects of FAS

- Prenatal and Postnatal growth retardation
- Impairment of brain and nervous system
- Abnormalities of face and skull
- Increased frequency of major birth defects.

Why should pregnant mothers abstain from alcohol?

Alcohol crosses placenta
↓
Fetal blood alcohol rises -equalizes with maternal tissue
↓
Fetus is small, immature detoxification system
↓
Alcohol remains in fetal blood a LONG TIME

Is there a Safe Amount of Alcohol

- There is no safe amount or safe time?

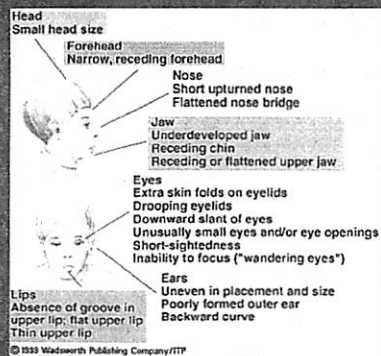
1st tri - effects developing organs; brain heart kidneys

2nd tri - risk of miscarriage, fetal distress

3rd tri - retarded growth of brain and body

Problems of Children with FAS

- LBW
- Failure to catch up to peers in physical growth
- Head : small in size
 - narrow eye slits
 - flat midface
 - loss of groove under nose
 - thin upper lip
 - narrow eye slits



Central Nervous System

- alcohol withdrawal at birth
- poor sucking response
- learning disabilities
- mental retardation
- sleep disturbances
- delayed development
- short attention span

Organs and Body Parts

- bone, muscle and joint problems
- genital effects
- heart and kidney problems

Of the leading causes of mental retardation FAS is the only one that is totally preventable!

Table 4.31 Herbs to avoid in pregnancy^{148,149,150}

Aloe vera	Ergot
Anise	Feverfew
Black cohosh	Ginkgo
Black haw	Ginseng
Blue cohosh	Juniper
Borage	Kava
Buckthorn	Licorice
Comfrey	Pennyroyal
Cotton root	Raspberry leaf
Dandelion leaf	Saw palmetto
Ephedra, ma huang	Senna

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Table 4-31, p.110

Folate and Pregnancy Case Study Four Hundred of Fortified Folate

Marcia is considering having a child and wants to be sure she is in the best shape possible before trying to conceive. She consults her physician who gives her a clean bill of health but suggests she evaluate the amount of folate in her diet.

Why is folate a concern for women capable of becoming pregnant?



Marcia records her food intake for one day to determine her folate intake:

Food	Servings	Total Folate (μg)
Breakfast		
Corn flakes	1 cup	100
Milk, reduced fat	1 cup	12
Banana	1 medium	22
Orange juice	8 oz (240 ml)	75
Coffee	1 cup	0
Lunch		
Hamburger	1	11
Hamburger bun	1	32
French fries	20 pieces	24
Coke	12 oz	0
Apple	1 medium	4
Dinner		
Chicken	3 oz	4
Refried beans	$\frac{1}{2}$ cup	106
Rice	1 cup	80
Roll	1	60
Margarine	2 tsp	1
Salad	1 cup	64
Salad dressing	1 Tbsp	1
Milk, reduced fat	1 cup	12
Cake	1 piece	32
Total		640

Does her folate intake meet the RDA?



Why not set the RDA at 800 μg DFE?



**What foods in Marcia's diet are natural sources of folate?
Which are fortified with folic acid?**



**List some substitutions that would increase Marcia's intake of naturally occurring folate
and of folic acid from fortified foods.**



Would you recommend Marcia take a folate supplement?



FDNT 213 – Life Cycle Nutrition Syllabus(Distance Education)

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Messages may be left in the Food and Nutrition Department Office, Ackerman Hall 14, 357-4440.

I. CATALOG DESCRIPTION

A detailed study of nutrition during all stages of the life cycle; current issues and research as they impact on these development stages.

II. COURSE OBJECTIVES

Relate the concepts learned in FDNT 212 Nutrition to the principles of growth and development and apply them to pregnancy, infancy, childhood, pubescence/adolescence, middle and late adulthood.

Analyze nutrient needs and deficiencies during pregnancy, lactation, infancy, childhood, and pubescence/adolescence, and adulthood.

Investigate and evaluate selected life cycle nutrition issues and research.

III. COURSE OUTLINE

Course content and assignments are located on the Web Ct Homepage of FDNT 213, Lifecycle Nutrition.

You will post your Module assignments in one of two places:

- The topic area with your name on it is used for private postings which can only be viewed by you or myself.
- Other topic areas will be labeled according to the assignment for that Module. For example "Module 2, Forum Pregnancy Discussion Question". Module discussion postings **MUST** be entered in the designated topic area for that particular module.

You will post your current log assignment in the designated "News Log" topic area.

Please note: Weekly quizzes and Module assignments are due by Sunday at 11:00pm of the week assigned. For example all assignments in Week 1 are due on the Sunday of Week 1; all assignments in Week 2 are due the Sunday of Week 2. All assignments and the quiz regarding the last module are due by 11:00pm on the LAST DAY of CLASS!

A	=	89.5 – 100%
B	=	79.5 – 89.4%
C	=	69.5 – 78.4%
D	=	59.5 – 69.4%
F	=	≤ 59.4%

V. CLASS PARTICIPATION

Class participation will be based on, but is not limited to: Individual participation in assigned discussion questions and case studies.

To actively participate, you should read, analyze, and respond to discussion questions/case studies posted and assigned. Your comments should add significantly to the discussion by building on others' comments, suggesting alternative solutions, pointing out problems, and even at times, constructively disagreeing. Try to relate "real world" experiences as much as possible to our activities and discussions. **Remember - go for substance vs. volume.**

Note: The "discussion goal" is to add value to the learning experience not to attack ideas. Tone is very important. A simple remark in the online environment can be easily misconstrued. Review your messages carefully before you post them.

Adequate participation includes at least two substantive responses/comments for each topic assigned.

VI. CURRENT NEWS LOG

Using the news log template provided, all students are required to maintain a current news log. This assignment requires the student to follow and log current research/news throughout the semester in any area of the lifecycle. Each log entry must include the topic, source, a summary of the news item and a personal reflection regarding the topic.

VII. REQUIRED TEXT

Brown, Judith E. (2008). *Nutrition Through the Lifecycle* (3rd ed.). Belmont, CA: Wadsworth Publishing Group.

VIII. COURSE POLICIES

1. **All course work must be completed by posted deadlines.** All quizzes, activities, and journal postings must be completed within the week for that module and are DUE BY Sunday at 11:00pm of the week assigned. **YOU MUST COMPLETE THE QUIZZES IN SEQUENTIAL ORDER by the Sunday of the week assigned. Late assignments will result in a zero so please pay close attention to the syllabus and weekly assignments.** The reading and assignments for each module are listed with the lecture topic. Students **MUST** read the assigned material if you intend to do well.
2. All assignments must be posted within **WEB CT**. You may choose to compose your work as a work document and cut and paste it into Web CT but please **DO NOT** send attachments. **Make copies of all materials you send to the instructor or post to any of the topic areas in case there are computer problems.**
3. Read e-mail at least one time every day.

4. Incomplete grades will only be awarded to students of record whose work, which so far as it has progressed, is a passing grade, but incomplete due to unforeseen circumstances.
5. If you are having difficulties contact the IT Support Center (<http://www.iup.edu/itsupportcenter>)

Phone: 724-357-4000

E-Mail: IT-Support-Center@iup.edu

Walk-in: Suites on Grant Lower - Suite G35

FN 213 Life Cycle Nutrition

3 credits
3 lecture hours

I. Catalog Description

A detailed study of nutrition which applies information from FN 212 Nutrition to all stages of the life cycle; current issues and research as they impact on these developmental stages.

Prerequisites: FN 212 Nutrition

II. Course Objectives

Relate the concepts learned in FN 212 Nutrition to the principles of growth and development and apply them to pregnancy, infancy, childhood, pubescence/adolescence, middle and late adulthood.

Analyze nutrient needs and deficiencies during pregnancy, lactation, infancy, childhood, pubescence/adolescence, and adulthood.

Investigate and evaluate nutrition issues and research.

III. Course Outline

1. Overview of Growth and Development (3 lectures)

- A. Stages of development
- B. Prenatal growth and development
- C. Postnatal
 - 1. Height
 - 2. Weight
 - 3. Body systems--nervous, cardiovascular, respiratory, digestive, excretory, endocrine
 - 4. Norms for human growth and development

2. Nutrition during pregnancy and lactation (9 lectures)

- A. Effects of malnutrition on brain growth and learning capacity
- B. Nutrition during pregnancy
- C. Nutrition during lactation
- D. Breast feeding vs. bottle feeding

3. Nutrition in Infancy and Childhood (9 lectures)

- A. Infant feeding and nutrition
- B. Development of food patterns in young children
- C. Management of mealtime behaviors
- D. The Pre-school child
- E. Kindergarten to pubescence
- F. Pubescence

4. Nutrition during pubescence/adolescence (6 lectures)
 - A. Developmental changes occurring during pubescence/adolescence
 - B. Nutrient needs
 - C. Dietary trends of adolescents
 - D. Adolescent concerns and their relationship to nutrition
 1. Acne
 2. Alcohol
 3. Anorexia nervosa and bulimia
 4. Nutrition for athletes/food faddism
 5. Pregnant adolescents
 6. Drugs
 7. Weight control
5. Nutrition during adulthood (12 lectures)
 - A. Health promotion
 - B. Disease prevention
 - C. The aging process
 - D. Nutrition assessment in the elderly
 - E. Nutrition needs in the elderly
6. Nutrition education (3 lectures)
 - A. During pregnancy and lactation
 - B. Infancy and pre-school years
 - C. In the public schools
 - D. For adults
7. Selected issues (integrated with relevant life stage)
 - A. Oral contraceptive agents
 - B. Baby foods
 - C. Allergies
 - D. Lactose intolerance
 - E. Vitamin supplementation
 - F. Hyperactivity
 - G. Vegetarian diets for children
 - H. Osteoporosis
 - I. Atherosclerosis
 - J. Cancer
 - K. Alzheimer's disease

This course will be taught in a traditional lecture manner making use of audiovisuals such as films and videotapes. Small group discussion may be used to provide variety.

IV. Evaluation

3 written examinations @ 100 points	300
There will be three exams consisting of a combination of multiple choice, matching, completion, true/false, and/or essay questions.	
Term project	100
Perinatal project	50
Rating sheets for oral presentations and research paper are attached.	
Class participation	<u>50</u>
	500 points
A = 90 - 100% (450-500 points)	
B = 80 - 89% (400-449 points)	
C = 70 - 79% (350-399 points)	
D = 60 - 69% (300-349 points)	
F = below 60% (less than 300 points)	

V. Texts

Rolfes, S.R., L.K. DeBruyne, and E.N. Whitney. Life Span Nutrition: Conception Through Life. St. Paul, West Publishing, 1990.

VI. Special Resource Requirements

Several relevant videotapes are owned by the instructor and The Department of Food and Nutrition. Others will be borrowed from the Dairy and Nutrition Council Mid East, located in Pittsburgh.

VII. Bibliography

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Recommended Dietary Allowances, 10th ed., Food and Nutrition Board, Commission on Life Sciences, National Research Council, Washington, D.C.: National Academy Press, 1989.

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