General Information:

Semester: Spring 2009
Day/Time: Tuesdays Evenings 5.25- 8.00
Room: 1143 DH
Instructor: Mihaela Gorcea, Adjunct Faculty, Fairleigh Dickinson University
Contact: Work Phone: 973- 628 3286; Cell Phone: 201 - 314-1337; mgorcea@ispcorp.com
Required Text: Instructor Handouts.

Course Description:
The course will begin with an introduction to skin, its physiology, primary function and major constituents. Following the introduction the course will consider the fundamental characteristics, performance, ingredients and technologies used in cosmetic formulations such as: emulsifiers, rheology modifiers and thickeners, moisturizers, humectants, emollients, preservatives, vitamins, antioxidants, AHA and BHA, skin protectants, skin lighteners, sunscreens. Topics covered in the course will also include emulsion technology, types of emulsions, stabilization of emulsions and preparation methods for emulsions. Fundamental categories of skin care and OTC products currently on the market will also be discussed; these will include body & facial moisturizers, anti-aging technologies, anti-acne products, skin lighteners, skin protectants, sunscreens, self-tanners, bath and shower products, shaving products, spa products. Each class will also address formulation approaches and functional methods of developing specific cosmetic skin care products.

Objective:
Upon successful completion of this course, students will be familiar with the basic types of skin care raw materials used in the cosmetic industry, emulsion technologies, categories of cosmetic and OTC skin care products as well as understand how to formulate cosmetic skin care products.

Format:
- Lecture and interactive discussion
- Mandatory attendance
  You are expected to attend every lecture. Attendance will be taken and will contribute toward your grade. There will be NO MAKEUP EXAMS FOR MISSED EXAMS. Consideration will be given only in the case of a documented and unavoidable company travel, business obligations, or medical emergency.
- Exams
  There will be a midterm exam as well as a cumulative final exam given during final week.

Grading Policy:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Quizes &amp; Oral presentation</td>
<td>10%</td>
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<tr>
<td>Midterm Exam</td>
<td>40%</td>
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<td>Final Exam (cumulative)</td>
<td>50%</td>
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<tr>
<td>Week Nr.</td>
<td>Lecture/date</td>
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| 1       | Lecture 1
January 27 | Overview of skin physiology, structure and function; Types of skin; Basic US regulations for marketing of skin care cosmetic products; Categories of skin care products; Main chemical classes used in skin care products. |
| 2       | Lecture 2
February 3 | Emulsion technologies; Surfactant classification; Types of surfactants and examples; Types of emulsions; Book chapter 10 - Surfactant Science |
| 3       | Lecture 3
February 10 | Emulsion technologies; Typical emulsion formula composition; manufacturing cosmetic emulsions; Emulsion stabilization; Formulation guidelines and examples Book Chapter 12 - Understanding Emulsions Quiz 1 from lecture 1 & 2 |
| 4       | Lecture 4
February 17 | Dry skin and skin moisturization; Moisturizer ingredients classification; Moisturizer formulations examples Book chapter 13 - Conditioning Agents for skin |
| 5       | Lecture 5
February 24 | Rheology general consideration; Rheological additives; Formulations guidelines and examples Quiz 2 from lecture 3 & 4 |
| 6       | Lecture 6
March 3 | Preservatives definition; types of microorganisms; factors influencing preservatives efficacy; preservatives examples Book Chapter 35 - Microorganisms and personal care products Midterm Review |
| 7       | Lecture 7
March 10 | Antioxidants in cosmetics - Dr. McMullen guest lecturer |
| 8       | Spring Break
May 17 | Spring break |
| 9       | March 24 | Midterm Examination |
| 10      | Lecture 8
March 31 | Skin aging and anti-aging technologies; Formulation strategies and examples |
| 11      | Lecture 9
April 7 | Sunscreens; Definition; UV filters classification; Formulations strategies and examples |
| 12      | Lecture 10
April 14 | Oily skin and anti-acne ingredients; Sensitive skin; Skin protectant ingredients and examples Quiz 3 from lectures 8 & 9 |
| 13      | Lecture 11
April 21 | Miscellaneous skin care products: Self-tanners; Skin Lighteners; Spa products; Toners and astringents; Formulation examples |
| 14      | Lecture 12
April 28 | Guest lecturer Dr. Gopi Menon "Basics of Skin Biology" (Tentative topic) Oral presentations ( First group) |
| 15      | Lecture 13
May 5 | Skin Cleansing products Oral presentations ( Second group); Final Exam review |
| 16      | Final Exam
May 12 | Final Examination - cumulative |

Lecture schedule and topic is subject to change with Instructor notification. Guest lectures may provide information on relevant topics with Instructor notification.
Oral Presentations Requirements

Oral presentations - Due on April 28 and May 5, 2009

Each student has to prepare an oral presentation (hard-copy included) due to me on April 28 and May 5, 2009. The presentation has to be 10 minutes in length and in PowerPoint format.

Topic

Select one of your preferred ingredients that is used in the skincare industry (e.g. a moisturizer, an emulsifier, a thickening agent, an anti aging agent, sunscreen, skin lightener, or any other ingredient) and prepare a presentation (in PowerPoint) covering the selected topic.

Points to be covered/ included in presentation:
- Title of the presentation
- Introduction with outline
- INCI name of the ingredient
- Chemical classification
- Molecular weight
- Chemical structure
- Physical chemical properties
- Specifications: purity, solids, pH (if applicable)
- Role in skincare applications
- Scientifically justify the reason(s) of selecting your ingredient

With your preferred ingredient develop a formulation including:
- Product name
- Product type (gel, emulsion)
- Weight percentages
- Phase sequencing
- Ingredients trade name and INCI names with suppliers (if available)
- Functions of all other ingredients used in your formula
- Manufacturing procedure
- Ingredient list
- Estimate product's appearance and rheology
- Targeted skin type
- Product testing

Conclusions of the presentation

Please Note:

- **Academic Integrity:**
  Cheating, in any form, will not be tolerated. Students caught cheating will receive a zero for that particular assignment. Details regarding FDU’s new Academic Integrity policy are readily available on-line at http://fduinfo.com/studentlife/handbook/

- **Cell Phones:**
  Cell phones should be turned off during lecture and exam periods.