NOTE: Changes to programs may require course changes, which must be processed electronically. Any questions should be directed to Associate Provost David Reinhold at 7-4564 or david.reinhold@wmich.edu

DEPARTMENT: Chemical and Paper Engineering
PROPOSED EFFECTIVE FALL YEAR: 2020

PROPOSED IMPROVEMENTS: Academic Program Proposed Improvements

☐ New degree*
☐ New major*
☐ New curriculum*
☐ New concentration*
☐ New certificate*
☐ New minor*
☐ Deletion*
☐ Revised major
☐ Revised minor

☐ Admission requirements
☐ Graduation requirements
☐ Change in Title
☐ Transfer

☐ Other (explain**)
** Other: Change credit hours as they should be for GPS 2550

Title of degree, curriculum, major, minor, concentration, or certificate: BS in Graphic and Printing Science

Chair, Department Curriculum Committee: [Name]
Date 9/27/2019

CHECKLIST FOR DEPARTMENT CHAIRS/DIRECTORS

☐ For new programs and other changes that have resource implications, the dean has been consulted.
☐ When appropriate, letters of support from department faculty are attached.
☐ When appropriate, letters of support from other departments in the same college are attached.
☐ When appropriate, letters of support from other college deans, whose programs/courses may be affected by the change, are attached.
☐ The proposal has been reviewed by HIGE for possible implications for international student enrollment.
☐ The proposal is consistent with the departmental assessment plan, and identifies measurable learning outcomes for assessment.
☐ Detailed resource plan is attached where appropriate.
☐ All questions attached have been completed and supporting documents are attached.
☐ The proposal is written and complete as outlined in the Faculty Senate guidelines and the curriculum change guides.

Chair/Director:
Date 9/30/2019

CHECKLIST FOR COLLEGE CURRICULUM COMMITTEE

☐ The academic quality of the proposal and the faculty involved has been reviewed.
☐ Detailed resource plan is attached where appropriate.
☐ Consistency between the proposal and the relevant catalog language has been confirmed.
☐ The proposal has been reviewed for effect on students transferring from Michigan community colleges. Detailed information on transfer articulation must be included with undergraduate proposals.
☐ Consistency between the proposal and the College and department assessment plans has been confirmed.
☐ Consistency between the proposal and the College and department strategic plans has been confirmed.
☐ All questions attached have been completed and supporting documents are attached.
☐ The proposal is written and complete as outlined in the Faculty Senate guidelines and the curriculum change guides.

Chair, College Curriculum Committee: Date

Revised Sept 2018. All previous forms are obsolete and should not be used.
CHECKLIST FOR COLLEGE DEANS

☐ For new programs and proposed program deletions, the provost has been consulted.
☐ For new programs, letter of support from University Libraries Dean indicating library resource requirements have been met.
☐ When appropriate, letters of support from other college faculty and/or chairs are attached.
☐ When appropriate, letters of support from other college deans, whose programs/courses may be affected by the change, are attached.
☐ The proposal has been reviewed for implications for accreditation, certification, or licensure.
☐ Detailed resource plan is attached where appropriate.
☐ All questions attached have been completed and supporting documents are attached.
☐ The proposal is written and complete as outlined in the Faculty Senate guidelines and the curriculum change guides.

Dean: ___________________________ Date: ___________________________

FOR PROPOSALS REQUIRING REVIEW BY:
GSC/USC; EPGC, GRADUATE COLLEGE, and/or FACULTY SENATE EXECUTIVE BOARD

☐ Return to Dean
☐ Forward to: ___________________________ Date: ___________________________

☐ Approve ☐ Disapprove

Curriculum Manager: ___________________________ Date: ___________________________

*needs review by

☐ Approve ☐ Disapprove

Chair, GSC/USC: ___________________________ Date: ___________________________

☐ Approve ☐ Disapprove

Chair, EPGC: ___________________________ Date: ___________________________

☐ Approve ☐ Disapprove

Graduate College Dean: ___________________________ Date: ___________________________

☐ Approve ☐ Disapprove

Faculty Senate President: ___________________________ Date: ___________________________

* needs review by

☐ Approve ☐ Disapprove

Provost: ___________________________ Date: ___________________________

Revised Sept 2018. All previous forms are obsolete and should not be used.
1. Explain briefly and clearly the proposed improvement:
   
   To update GPS curriculum adding GPS 2550 course which was deleted by mistake from previous catalog.

2. Rationale. Give your reason(s) for the proposed improvement.

   Course was part of required courses for Emphasis in Packaging, and currently is missing, required 18 credit hours that do not add up, it is only 14 credit hours emphasis, with 19 hours electives (the sum of which is < 37). Modification will make it 17 credit hours emphasis and 20 hours electives, which add to 37.

3. Effect on other colleges, departments, or programs. If consultation with others is required, attach evidence of consultation and support. If objections have been raised, document the resolution. Demonstrate that the program you propose is not a duplication of an existing one.

   No changes are foreseen, we are adding class which was deleted by mistake and adjusting the credits amount for particular Emphasis as needed.

4. Effect on your department's programs. Show how the proposed change fits with other departmental offerings.

   No effect is expected, change will fit well with Emphasis in Business and Multimedia in GPS major.

5. Alignment with college's and department's strategic plan, mission, and vision.

   No change.

6. Effects on enrolled students: Are program conflicts avoided? Will your proposal make it easier or harder for students to meet graduation requirements? Can students complete the program in a reasonable time? Show that you have considered scheduling needs and demands on students' time.

   No change.

7. Student or external market demand. What is your anticipated student audience? What evidence of student or market demand or need exists? What is the estimated enrollment? What other factors make your proposal beneficial to students?

   No change.

8. Effects on resources. Explain how your proposal would affect department and University resources, including faculty, equipment, space, technology, and library holdings. If proposing a new program, include a letter and/or email of support from the university libraries affirming that the library resource issues have been reviewed. Tell how you will staff additions to the program. If more advising will be needed, how will you provide for it? What will be the initial one-time costs and the ongoing base-funding costs for the proposed program? (Attach additional pages, as necessary.)

   No change.

9. List the learning outcomes for the revised or proposed major, minor, or concentration. The department will use these outcomes for future assessments of the program.

   No change.

10. Describe how this change is a response to assessment outcomes that are part of a department or college assessment plan or informal assessment activities.

    It is a result of University assessment activities.

11. (Undergraduate proposals only) Describe in detail how this change affects transfer articulation for Michigan community colleges. For new majors or minors, describe transfer guidelines to be developed with Michigan community colleges. For revisions to majors or minors, describe necessary revisions to Michigan community college guidelines. Department chairs should seek assistance from college advising directors or from the admissions office in completing this section.

    No effect.

Revised Sept 2018. All previous forms are obsolete and should not be used.
12. Please offer both “Current Catalog Language” and “Proposed Catalog Language” if there is to be a change in the catalog description for a given program. For the “current” language, please copy and paste relevant language from the most current catalog and for the “proposed” language, please share the exact proposed new catalog language. As possible, bold or otherwise note the key changes in the new proposed catalog language.

**Current Catalog Language**

**Emphasis in Packaging (37 hours minimum)**

**Required Courses (18 hours)**

- PAPR 2040 - Stock Preparation and Papermaking **Credits: 4 hours**
- PAPR 2420 - Coating **Credits: 4 hours**
- MKTG 2900 - Introduction to Food and CPG Industries **Credits: 3 hours**
- EDMM 1420 - Engineering Graphics **Credits: 3 hours**

**Elective Courses (19 hours)**

- CHP 3100 - Work Experience/Co-op **Credits: 1 hour**
- GPS 4570 - Advanced Multimedia **Credits: 3 hours**
- GPS 5100 - Printability Analysis **Credits: 3 hours**
- PAPR 2550 - Paper Physics Fundamentals **Credits: 4 hours**
- PAPR 4860 - Independent Research **Credits: 3 hours**
- PAPR 4990 - Independent Studies **Credits: 1 to 6 hours**
- CHEM 1120 - General Chemistry II **Credits: 3 hours**
- CHEM 1130 - General Chemistry Laboratory II **Credits: 1 hour**
- EDMM 1500 - Introduction to Manufacturing **Credits: 3 hours**
- EDMM 2460 - CAD - Solid Modeling **Credits: 3 hours**
- EDMM 2500 - Plastics Properties and Processing **Credits: 3 hours**
- EDMM 3260 - Operations Planning and Control **Credits: 3 hours**
- MATH 1220 - Calculus I **Credits: 4 hours**

OR

- MATH 1700 - Calculus I, Science and Engineering **Credits: 4 hours**
- MATH 1230 - Calculus II **Credits: 4 hours**

OR

- MATH 1710 - Calculus II, Science and Engineering **Credits: 4 hours**

**Proposed Catalog Language**

**Emphasis in Packaging (37 hours minimum)**

**Required Courses (17 hours)**

- PAPR 2040 - Stock Preparation and Papermaking **Credits: 4 hours**

Revised Sept. 2018. All previous forms are obsolete and should not be used.
- PAPR 2420 - Coating Credits: 4 hours
- MKTG 2900 - Introduction to Food and CPG Industries Credits: 3 hours
- EDMM 1420 - Engineering Graphics Credits: 3 hours
- GPS 2550 - Fundamentals of Packaging Credits: 3 hours

Elective Courses (20 hours)

- CHP 3100 - Work Experience/Co-op Credits: 1 hour
- GPS 4570 - Advanced Multimedia Credits: 3 hours
- GPS 5100 - Printability Analysis Credits: 3 hours
- PAPR 2550 - Paper Physics Fundamentals Credits: 4 hours
- PAPR 4860 - Independent Research Credits: 3 hours
- PAPR 4990 - Independent Studies Credits: 1 to 6 hours
- CHEM 1120 - General Chemistry I Credits: 3 hours
- CHEM 1130 - General Chemistry Laboratory I Credits: 1 hour
- EDMM 1500 - Introduction to Manufacturing Credits: 3 hours
- EDMM 2460 - CAD - Solid Modeling Credits: 3 hours
- EDMM 2600 - Plastics Properties and Processing Credits: 3 hours
- EDMM 3260 - Operations Planning and Control Credits: 3 hours
- MATH 1220 - Calculus I Credits: 4 hours
  OR
- MATH 1700 - Calculus I, Science and Engineering Credits: 4 hours
- MATH 1230 - Calculus II Credits: 4 hours
  OR
- MATH 1710 - Calculus II, Science and Engineering Credits: 4 hours

- GPS 2550 - Fundamentals of Packaging

Covers all aspects of packaging and relationships to the needs and desires of society. Fundamentals of packaging dealing with physical and chemical properties of materials and their use in packaging. The laboratory is used for presentations by students, industry representatives and field trips to the local food, pharmaceutical, corrugated containers, and other packaging facilities.

Prerequisites & Corequisites: Prerequisite: PAPR 1000 with a grade of "C" or better.

Credits: 3 hours

Lecture Hours - Laboratory Hours: (3 - 0)
Fwd: Re: GPS 2550

Alexandra Pekarovicova
Mon 9/23/2019 1:43 PM
To: Raja G Aravamuthan <raja.aravamuthan@wmich.edu>
Raja:
we can give it the same number-see below. S.

-------- Forwarded Message --------
Subject: Re: GPS 2550
Date: Mon, 23 Sep 2019 13:18:35 -0400
From: David S Reinhold <david.reinhold@wmich.edu>
To: Alexandra Pekarovicova <a.pekarovicova@wmich.edu>
CC: Kelley Oliver <kelley.oliver@wmich.edu>

Alexandra:
You can use the same number as long as you are reactivating the same course (the one that was deleted by mistake).

Dave

From: Alexandra Pekarovicova <a.pekarovicova@wmich.edu>
Sent: Monday, September 23, 2019 1:09 PM
To: David S Reinhold <david.reinhold@wmich.edu>
Subject: GPS 2550

Hello:
GPS 2550 was accidentally removed from undergraduate catalog. This class is required for Graphic and Printing Science, Emphasis in Packaging. We would like to put it back through Program Improvement Form. I assume if the course was deleted, when it is reinstalled again, it cannot have the same number. Who will assign this class a new number? Or, can the class have the same number? Thank you for your help.

Sincerely,
Alexandra Pekarovicova, Ph.D.
Professor
Co-Director Center for Coating and Printing Research,
Chemical and Paper Engineering,
College of Engineering and Applied Science
4601 Campus Drive, A-217 Parkview
Kalamazoo, MI 49008-5462
T (269)276-3521; F (269)276-3501
E-mail: a.pekarovicova@wmich.edu

GPS 2550 - Fundamentals of Packaging

Covers all aspects of packaging and relationships to the needs and desires of society. Fundamentals of packaging dealing with physical and chemical properties of materials and their use in packaging. The laboratory is used for presentations by students, industry representatives and field trips to the local food, pharmaceutical, corrugated containers, and other packaging facilities.
GPS 2550 - Fundamentals of Packaging

Instructor: TBA
Office Hours: Wednesday 10:00-11:50 a.m. and by appointment
Prerequisites: GPS 2150 and STAT 2160
Lecture: M, W, F 8:30 - 9:20 a.m. Elson S. Floyd A 0120

Prerequisites and Co-requisites: PAPR 1000 with a grade of “C” or better.

Description: Course covers all aspects of packaging and relationships to the needs and desires of the society. Fundamentals of packaging dealing with physical and chemical properties of materials and their use in packaging.

Objectives: This course is intended to provide students with knowledge, which will allow them to understand the fundamental issues involved with packaging materials and techniques. Packaging principles covering the growth and development of the field, and the technological and motivational problems involved in present day packaging. Packaging functions, design, marketing, technology and sustainability are examined in the context of their relationship to the needs of society.

Learning outcomes: The learning outcome of the course are to develop a basic knowledge of packaging materials and systems; and to gain an understanding of the role of packaging in the society.

Academic Honesty
“You are responsible for making yourself aware of and understanding the policies and procedures in the Undergraduate and Graduate Catalogs that pertain to Academic Honesty. These policies include cheating, fabrication, falsification and forgery, multiple submission, plagiarism, complicity and computer misuse. [The policies can be found at http://catalog.wmich.edu under Academic Policies, Student Rights and Responsibilities.] If there is reason to believe you have been involved in academic dishonesty, you will be referred to the Office of Student Conduct. You will be given the opportunity to review the charge(s). If you believe you are not responsible, you will have the opportunity for a hearing. You should consult with your instructor if you are uncertain about an issue of academic honesty prior to the submission of an assignment or test.”

Grading
Midterm Exam 20 %
Final Exam 20 %
Nine E- quizzes 18 % (2.0 % each)
Homework 20 %
Research Paper 9 %
Oral Presentation 8 %
Class Participation 5 %
Examinations

Midterm and final exam will cover material from lectures, and reading assignments. The cumulative final exam is 2 hours long. It will cover all of the material presented in the course. Electronic quizzes (E-quizzes) will focus on main problems, definitions, and key words. Quizzes will have a time limit of 30 minutes. Questions will be a mix of true/false, fill in the blank and multiple choice. Quizzes cover multiple units, as indicated in the schedule.

Late Work Policy

Quizzes open at 12pm on Thursday and are available until 11:59pm on Sundays. You must take the quiz during this time period. Homework is due one week after it was assigned. You will not get any credit 14 days after assignment date.

Presentation
Each student will make one 10-minute presentation. The best way for you to present it is to use the Power Point. There will be sign-up sheet with topics for you to choose from.

Tentative schedule

Week 1-2 Introduction to packaging and packaging design

Week 3-4 Packaging materials and forms

Week 5-6 Paper based substrates

Week 7-8 Non-paper substrates

Week 9-10 Rigid packaging: wood, glass, metal

Week 11-12 Packaging industry sector

Week 13-14 Future of packaging and recycling