

Exhibits in the Discussion between Graduate Studies Committee and Proposer

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Section 1: Email to proposer after initial review. GSC Questions in black, Global answers in red

Critical Issues Requiring Resolution:

1. External Reviewers: The external reviewer section is blank. Please provide 2-3 qualified external reviewers from peer institutions or industry who can evaluate the program. **See included letter of support from industry.**
2. Relationship to Existing Programs: The proposal does not mention WSU's existing MS in Food Science or explain how this degree differs. The committee recommends providing:
 - o Clear differentiation between this degree and the MS in Food Science
 - o Analysis of potential overlap or competition between programs.
 - o Rationale for creating a separate degree rather than a focus within the existing Food Science degree.
 - o Documentation of consultation with the Food Science faculty/department.

The FSM program focuses on the science of food management and science, including chemistry and microbiology. This program focuses on engineering technologies. So this program is a compliment to the FSM program, not a direct competitor. Many of these new courses will become electives for the FSM program. This should also improve enrollments and better serve students in the FSM program. Additionally, industry has been requesting this type of training and education.

3. Faculty Workload Feasibility: The proposal states "no new faculty hires" will be needed to develop 9 new courses, with existing faculty creating courses "in concert with their on-campus courses." However, the budget shows hiring 2 FTE career-track faculty. Please clarify.

We have 4 faculty members in the department that are already working toward creating the courses for the program. This year, the development of the courses is part of their service efforts. Once the program is launched, and as it becomes necessary due to increased enrollments, we will add faculty as needed. Until we see the required enrollments, Shyam Sablani will manage the program. Dr. Ganjyal in Food Science will contribute to creation of one course. And we have two elective courses which are already being offered by the department of Math and Statistics and the Everett campus. Additionally, Dr. Munson from the College of Business will contribute to the creation of 50% of one course. See included list of faculty and courses.

- Timeline for when career-track faculty will be hired relative to course launches.
 - Which specific current faculty will develop which courses, and what percentage of their time this represents.
 - How this additional workload will be accommodated within current faculty contracts.
4. Enrollment Projections Justification: The proposal projects steady growth (15→75 students over 5 years) while acknowledging declining master's enrollments at WSU Pullman. The committee recommends:
- Working with WSU's Office of Institutional Research to validate enrollment projections.
 - Providing more detailed market analysis including specific job titles, salary ranges, and employer demand data.
 - Including evidence from alumni, advisory boards, or industry partners supporting enrollment projections.
 - Conducting competitive analysis of similar online programs nationally.

See attached Lightcast analysis and AI Executive Summary

5. Student Learning Outcomes & Delivery Mode: The first SLO states students will "effectively manage engineering research and/or development research teams." Please explain how this will be assessed and achieved in a fully asynchronous online format, or clarify whether the program includes synchronous team projects, practicums, or other collaborative experiences.

The department faculty will work directly with the Global Campus Instructional Design professionals to create learning experiences that ensure the learning outcomes are met.

Both proposals would benefit from:

- More specific evidence of industry demand (letters of support, survey data, specific hiring projections from partners). **Included**

- Clearer distinction between development/teaching roles for tenure-track faculty vs. adjunct/clinical faculty. **Fleshed out in Faculty section.**
- More detailed curriculum maps showing course sequences and prerequisite relationships.

No real prerequisite courses, and students may take the certificates in any order and there is flexibility built into the design of the program. Undergraduate program will provide the foundation for successful completion of this Masters program.

- Explanation of how Global Campus support will be integrated with department-specific advising.

The Department of Biological Systems Engineering will provide direct student advising, admission decisions, mentoring, program coordination (Dr. Hanwu Lei), and assessment. This has been added to the Student Services section of the revised proposal.

- Consultation with Institutional Research to validate enrollment projections using appropriate market analysis methodologies.

The department partnered with the market research team at the Global Campus who has extensive experience in launching new programs and assessing enrollment. The Global Campus has advised that the projections for this program are aspirational and will require strategic partnerships and aggressive marketing and recruitment.

- Clearer budgetary differentiation – at present, the budgets are identical.

Because the two budgets reflect aspirational enrollment goals and nearly identical faculty and course roll-out plans, the two budgets are presented as the same. However, each program will be managed and evaluated separately by their respective faculty coordinators (Hanwu Lei for MS SF, and Shyam Sablani for FMT.)

Section 2: Institutional Research Demand Analysis

Due to the aspirational nature of the proposal's headcount and budget, Graduate Studies requested a demand analysis from Institutional Research (copy of email thread).

All,

See below for Stephen's market analysis of the Food Manufacturing Technologies program. He did discuss potential overlap of this program with their online MS in Agriculture (Food Science and Management). Kelley indicated the two programs were substantively different and did not expect competition. That program has 10 students enrolled currently.

We suggest more modest enrollment projections, given the market analysis below and typical master's program enrollment in similar programs. For instance, we would recommend trying to bring in cohorts of 8-10 per year, to result in total enrollment between 15-25 at full enrollment. Budget models should be based off those more modest enrollment projections.

I cannot recall what CIP code was suggested with this program; I note that it cannot have CIP 01.0000 which is used by the current MS in Agriculture program. At the Federal level, a degree program is the CIP and degree level; thus two masters programs which have substantively different curricula should not have the same CIP code. Please let me know if you have any questions about that or if the program would like assistance finding a suitable CIP code.

Thanks,

Stephanie

From: Pool, Stephen E. <stephen.pool@wsu.edu>

Sent: Friday, October 31, 2025 4:25 PM

To: Kane, Stephanie <slkane@wsu.edu>

Cc: Walter, Jon <jdwalter@wsu.edu>

Subject: Food Manufacturing Program Review

Hi Stephanie,

I've finished reviewing the available LMI related to the proposed Food Manufacturing Technologies program and have put together some thoughts for you. My Aviation Fuels review will be coming to you shortly.

· **Labor Demand:** The best CIP match for this program appears to be Food Technology and Processing (CIP 01.1002). From 2021 to 2025, Washington state saw a growing occupational demand for occupations mapped to Food Technology and Processing programs at a Master's degree level, including Food Scientists and Technologists (21 annual openings, 83.1% growth); and Food Science Technicians (6 annual openings, 21.1% growth). Expanding this analysis to capture Global's highest enrollment five-state region (Washington, California, Oregon, Idaho, and Texas) saw a slightly contracting demand for Food Scientists and Technologists (182 annual openings, 0.7% contraction) but did see growth for Food Science Technicians (84 annual openings, 31.3% growth).

· **Job Trends:** Within Washington, net demand for Food Technology and Processing occupations at a Master's level increased by 65.8% from 2021 to 2025. In this same period, Global's high enrollment five-state region also saw growth, albeit lower (5%). Food Scientists and Technologists saw generally high wages (\$44.89/hour in Washington, \$40.84/hour in the five-state region) while Food Science Technicians saw generally lower wages (\$22.85/hour in Washington, \$23.67/hour in the five-state region).

· **Program Completions:** Based on IPEDS reporting, there were no Master's degree level completers from Food Technology and Processing programs in the five-state region in 2024, but there were 8 Bachelor's level completers from two programs. It appears there are no Food Technology and Processing programs in Washington at all. Nationally, there were 21 total Master's degree level completers from three Food Technology and Processing programs in 2024. At a national level, completers from Master's degree level programs has declined 9% since 2020 and there has been no change in the number of programs, but completers from programs of all levels has net increased 13% and the quantity of programs has increased 69% in that same period. The largest Master's level Food Technology and Processing program in the nation has on average graduated 12 students annually for the last 5 years.

· **Remote Programs:** Within Global's highest enrollment five-state region, there were only two remote completers from Food Technology and Processing programs at any level. Nationally, Master's degree level completions from remote Food Technology and Processing programs has exceeded that of in-person programs since 2022

· **Key Takeaways:** Based on my review of available LMI, it is my assessment that there is sufficient occupational demand for a remote-offered Food Technology and Processing program at a Master's degree level. Demand for Food Scientists and Technologists is growing in Washington but there are no similar programs within the state, and demand for remote-offered Food Technology and Processing programs appears to be growing nationally. However, I believe enrollment expectations should be tempered considerably. Available data suggests the largest similar program in the US maintains enrollment of around 25 students. In the interest of conservative calculations, I would advise against projecting a maximum enrollment above that.

Section 3 – Degree overlap with the MS in Food Science

A. Letter from Food Science



January 23, 2026

Dear Faculty Senate,

Thank you for the opportunity to provide clarification and perspective regarding the proposed online MS degree in Food Manufacturing Technologies (FMT) developed by the Department of Biological Systems Engineering (BSE). We appreciate the Faculty Senate's thoughtful review and its request for a formal response from the School of Food Science (SFS) addressing two specific points: (1) whether the proposed FMT program would have duplication and/or directly compete with Food Science programs, and (2) whether SFS intends for FMT courses to become electives within SFS program. We welcome the opportunity to directly respond in support of a transparent and collaborative review process.

In its initial iteration, the proposed FMT program included several Student Learning Outcomes (SLOs) that overlapped with online courses currently offered by SFS through the Food Science and Management (FSM) online MS program within the MS in Agriculture degree, as well as the Food Science certificate program. Following feedback from the SFS Curriculum Committee (CC), BSE revised the proposed SLOs. We appreciate BSE's responsiveness and collegial engagement and recognize that these revisions have addressed the most significant areas of overlap.

The SFS CC does note a limited number of areas where course content may still intersect:

- FS 104 may overlap with FMT 501
- FS 106 may overlap with FMT 502

For clarity, SFS notes that FS 104 and FS 106 are not residential undergraduate courses. Although their numbering may suggest otherwise, these courses are offered through the SFS online certificate program and are intentionally designed for working professionals. They should not be interpreted or assessed as undergraduate-level coursework. As such, the overlap in these courses should be addressed.

In response to the Faculty Senate's request regarding the potential use of FMT courses as electives, SFS confirms that it has not made any determination, commitment, or expressed intent for FMT courses to be used as electives within the FSM online MS program, the Food Science certificate, or any current or future SFS degrees. Any future consideration of elective pathways would require formal review through SFS's established curricular governance processes.

With respect to competition, SFS confirms that it does not view the proposed FMT program as a direct competitor to its current or future degree or certificate offerings, provided the FMT curriculum remains within the engineering and manufacturing domain as described. SFS programs are grounded in food science as a distinct discipline, emphasizing food chemistry, microbiology, safety, quality, processing, sensory science, and regulatory science, while FMT is centered on manufacturing systems, processes, and applied engineering technologies.

In light of the Faculty Senate's concerns regarding duplication and disciplinary overlap, SFS reviewed individual FMT courses for alignment with this distinction. In this context, SFS notes that FMT 508, originally proposed to be taught by SFS faculty member, Dr. Girish Ganjyal, and now proposed to be taught by BSE faculty member, Dr. Shyam Sablani, substantially overlaps with SFS's core disciplinary domain. As described in the course overview, the content aligns closely with food chemistry, ingredient functionality, food quality, and regulatory considerations. To maintain clear disciplinary boundaries and to address the Faculty Senate's concerns regarding duplication/competition, SFS respectfully offers the following options for consideration:

1. Removal of FMT 508 from the proposed program.
2. Substantial revision of FMT 508 to focus primarily on engineering and manufacturing systems and processes, clearly situating it within BSE's domain.
3. Development of the course by SFS as an SFS designated offering (e.g., FS 508), with BSE electing to use the course as an elective within the FMT program. This option aligns with the course's original intent, as reflected in the initial proposal to have the course taught by SFS faculty, and would ensure appropriate disciplinary expertise and curricular governance while supporting interdisciplinary collaboration.

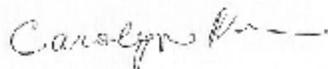
SFS views these options as constructive pathways to preserve academic clarity, respect disciplinary expertise, and support coordination between units in a manner consistent with Faculty Senate expectations. When clear disciplinary boundaries are maintained, SFS views the FMT program as complementary rather than competitive, serving a distinct audience and set of industry needs.

We appreciate BSE's continued willingness to engage in constructive dialogue and thank the Faculty Senate for its leadership in fostering transparency, coordination, and shared understanding across academic units.

Sincerely,



Soo-Yeun Lee
Director, School of Food Science



Carolyn Ross
Co-Chair of SFS Curriculum Committee



Adam Quinn
Co-Chair of SFS Curriculum Committee

School of Food Science | Washington State University |
Food Science and Human Nutrition Building Room 106
(Mailing address) PO Box 646376 Pullman WA 99164-6376
(Phone) 509.335.9447
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B. Letter from Biological Systems Engineering



January 28, 2026

Subject: Online M.S. in Food Manufacturing Technologies

Dear Members of the University Faculty Senate,

I am writing in response to the letter submitted by Dr. Soo-Yeun Lee, Director of the School of Food Science, regarding the proposed online Master of Science in Food Manufacturing Technologies (FMT), which is currently under review by the University Faculty Senate. I appreciate the Senate's careful review of this proposal and the constructive engagement of colleagues in the School of Food Science throughout this process.

The proposed M.S. in Food Manufacturing Technologies is part of a broader strategic initiative within our department to expand access to graduate education by converting existing, high-demand graduate programs into high-quality online offerings. As part of this effort, we plan to launch two online master's programs next year: (i) Food Manufacturing Technologies and (ii) Sustainable Aviation Fuels. Collectively, these initiatives are intended to respond to workforce needs, strengthen industry engagement, and approximately double graduate student enrollment in our department over the next three years.

As part of the Senate's review, we were asked to confirm that there is no inappropriate overlap between courses offered in the existing online M.S. in Food Science and Management (under the M.S. in Agriculture), the Food Science Certificate, and the courses proposed for the M.S. in Food Manufacturing Technologies. In response to this request, the School of Food Science provided its opinion.

Over the past several weeks, our department has worked closely and collegially with the School of Food Science to review the student learning outcomes of the courses proposed

for our new online FMT program, as well as those offered in the existing online M.S. in Food Science and Management and the Food Science Certificate. We believe these discussions have been productive and have resolved the concerns raised during that review. The remaining issue identified in Dr. Lee's letter relates to perceived overlap between FS 104 and FMT 501, and between FS 106 and FMT 502.

We would like to clarify that FS 104 and FS 106 are part of the Certificate of Proficiency in Food Science and Food Safety and are not appropriate substitutes for graduate-level engineering coursework. These are non-credit courses completed in nine hours, are not offered at the 500 level, and do not provide the mathematical rigor or analytical depth required for graduate education in engineering. Accordingly, the development of new 500-level courses, FMT 501 and FMT 502, is necessary to meet disciplinary expectations and to ensure that the proposed degree maintains appropriate graduate-level standards. While some topical similarity may exist at a broad level, the learning outcomes and technical depth of the proposed FMT courses are clearly distinct.

In her letter, Dr. Lee noted that in our initial proposal, FMT 508 was planned to be offered by Dr. Girish Ganjyal from the School of Food Science and that, as a result of our conversations, this course will now be offered by Dr. Shyam Sablani. In response to the concern raised, BSE agreed to move forward with the second option recommended and has revised the syllabus accordingly. The revised syllabus for FMT 508 focuses primarily on engineering and manufacturing systems and processes used to modify the functionality of proteins and other food ingredients. The course instructor, course description, and student learning outcomes for FMT 508 were revised. The new version of the course was reviewed by the School of Food Science, which communicated its satisfaction with the engineering-centered content and learning outcomes to BSE.

I respectfully offer these clarifications to assist the Senate in its deliberations and to reaffirm our commitment to collaboration, academic rigor, and shared governance. I would be pleased to provide any additional information the Senate may find helpful.

Thank you for your thoughtful consideration.

Sincerely,

A handwritten signature in black ink, appearing to read 'M. Garcia-Perez', with a stylized flourish at the end.

Manuel Garcia-Perez, PhD

Professor and chair

Biological Systems Engineering Department

Phone number: 509-335-7758

e-mail: mgarcia-perez@wsu.edu

Section 4 Syllabus Revision

FMT 508 Revision Summary

In response to the concern raised by Dr. Soo, the Director of School of Food Science (SFS's) regarding his faculty Dr. Girish Ganjyal teaching **FMT 508** and identifying its overlap with **SFS's core disciplinary domain** and outlining potential options to maintain appropriate boundaries. We agree with the **Option 2** and have now revised the syllabus accordingly. The revised syllabus of FMT 508 focuses primarily on **engineering and manufacturing systems and processes used to modify the functionality of proteins and other food ingredients**. The course instructor, course description and student learning outcomes of FMT 508 are revised.

FMT 508 Revised Syllabus

COURSE SYLLABUS

FMT 508

Food Ingredients and Plant Protein Technologies

Course Details

Instructor: Shyam Sablani

IMPORTANT: Visit the course ["More Information"](#) page to review details about textbooks, course materials, media, proctor requirements, and any fees associated with this course.

Course Overview

This course introduces students to the engineering of plant-based food ingredients, with a primary focus on understanding how food processing technologies—such as thermal processing, extrusion, high-pressure processing, ultrasound, fermentation, and enzymatic treatments—can be strategically applied to modify the structure, functionality, and performance of plant proteins and other plant-derived ingredients (e.g., starches, fibers, and lipids). The course integrates fundamental principles of food properties and transport phenomena with practical applications in modern food processing. Students will explore how processing-induced changes at the microstructural levels influence key functional properties. Special attention is given to plant-based and alternative protein products, sustainability considerations, and emerging technologies used in the development of next-generation foods. Through case studies, problem-based learning, and exposure to industrial practices, students will develop the ability to design, evaluate, and optimize processing strategies to tailor plant ingredient functionality for specific food applications.

Student Learning Outcomes (SLOs)

Upon the successfully completion of this course, students are able to

1. Analyze the impact of food processing technologies (thermal, mechanical, chemical, and non-thermal) on the physicochemical and functional properties of plant proteins.
 2. Apply food engineering principles to select and design processing strategies that modify plant ingredient functionality for targeted food applications.
 3. Evaluate experimental and industrial data related to plant protein processing, functionality, and product performance using appropriate engineering and analytical tools.
 4. Describe instrument techniques for characterization of physical properties of various food ingredients.
 5. Learn novel methods of extraction, characterization, and modification of novel plant protein ingredients
 6. Propose and justify processing-based solutions for developing plant-based foods that meet functional, nutritional, sustainability, and quality requirements.
-

Course Work

The coursework includes Homework, Term project, Critical review, Midterm exam, and Final. All assignments must be submitted through Learning Management System Canvas. Please do not email assignments to the instructor; you are expected to submit assignments on time. Valid Washington State University excused absences (e.g., severe illness) are acceptable reasons to submit an assignment late without penalty, provided the appropriate documentation is submitted to the instructor. Poor/no internet connections and busy schedules are not valid excuses for late submission.

When you submit assignments, please make sure every file you submit has your name and a clear title stating what the homework is and consolidate your files as much as possible, e.g., merge multiple scanned pages/images into a single pdf or Word file. Also, please make sure any scanned or imported images are clearly legible. If the instructor cannot read your work, you will not receive credit for it.

Homework

Students will be given homework periodically and each student will complete and submit the report in word/pdf format and/or voice narrated PowerPoint deck of slides.

Term project

At the beginning of the semester, students will be given a list of suggested topics of term project. The term projects are individual. Each student will perform literature review on a topic of his/her choice and submit a report and voice narrated PowerPoint slide deck.

Critical review

Each student will be assigned a recently published paper related to food ingredients and plant protein technology. Students will critically review the paper and write a brief report presenting the highlights of the study, and strengths and weaknesses of the paper.

Assessment

Lecture Assignments:

You are expected to review the assigned lecture material prior to attempting the homework problems, quizzes, midterm exam and final. Please send any questions you have on the course to the instructor.

Homework/Critical Review/Term project:

Assignment due dates are posted on the Course Schedule page. Assignments may include creation of figures or graphs, calculation problems, case study questions, report, PowerPoint slide deck or other assignment related to the course.

Midterm and Final:

The dates are posted on the Course Schedule page. Midterm exam will include the lectures covered prior to exam date while the Final will be based on lecture material covered after midterm exam.

Grading

Assignment Breakdown		
Assignment	Points	Percent of Overall Grade
Homework	400	40%
Term project	200	20%
Critical Review	100	10%

Assignment Breakdown

Assignment	Points	Percent of Overall Grade
Midterm	100	10%
Final	200	20%

Grading Schema

Grade	Percent	Grade	Percent
A	93-100	C	73-75.9
A-	90-92.9	C-	70-72.9
B+	87-89.9	D+	65-69.9
B	84-86.9	D	60-64.9
B-	80-83.9	F	Below 60
C+	76-79.9		

Instructor Interaction

Students are expected to

- Go through the lecture materials and study materials posted on Canvas
- Schedule sessions with the instructor when they have any doubt about any topic
- Submit assignments on time

Faculty is expected to

- Engage students in learning

- Provide feedback on assignments in a timely manner
 - Offer additional assignments and interaction session as needed
-

Academic Integrity Instructor Statement

Students who violate WSU's or UI's Standards of Conduct for Students will receive an F as a final grade in this course, will not have the option to withdraw from the course and will be reported to the Office of Student Standards and Accountability. Cheating is defined in the Standards for Student Conduct WAC 504-26-010 (3). It is strongly suggested that you read and understand these standards: <http://conduct.wsu.edu/default.asp?PageID=338>

Late Work Policy

Assignment due dates will be posted on Canvas on the Course Schedule page. Students will be notified of any changes to the due dates via Canvas announcement. Late assignments will be accepted at a cost of 20% off the grade per each late day. Therefore, if an assignment is one (1) day late, the highest attainable grade will be 80%. Assignments missed due to a valid University excuse will not be considered late.

Make-up of missed exams is contingent on deciding prior to the exam. Student must notify instructor of any unforeseen circumstance resulting in a missed exam at least 24 hours before the exam. The type of make-up exam will be oral, essay, or a combination of the two and must be completed within one week of scheduled exam time. the instructor has the latest information about a late work policy.

Plagiarism:

Plagiarism is defined by Webster's Dictionary as, "*to steal and pass off the ideas or words of another as one's own.*" There are two general forms of plagiarism:

(a) Unintentional: the use of other writers' words, phrases, sentences, paragraphs as though they were your own *without understanding* the need to cite the original source. Unintentional plagiarism normally occurs when the individual does not understand the conventions of scientific writing and the need to cite sources of information.

(b) Intentional: the use of another writers' work and claiming it as your own. Intentional plagiarism includes *knowingly copying* or incorporating sections of books, articles, or other sources into your work without citation.

To evade plagiarism, you must acknowledge the source of information. In scientific writing, this can be performed in the text of your work through the use of surnames of authors and the year of publication (e.g., Smith et al., 2003) or by using numbers enclosed by parentheses, which correspond to specific citations in the reference section. In addition to employing citations in the text, plagiarism can be avoided by applying special techniques when writing about information obtained from a source:

(a) Paraphrase: rewording information in which you accurately present the main ideas from the source but do so using your own organization, words, and sentence structures.

(b) Summary: a concise statement of the main idea from a section within a source.

(c) Direct quotation: use of quotes surrounding the passage written by another author.

In general, paraphrasing (a) and the use of summary statements (b) are very common techniques used in scientific writing. Use of quotations (c) in scientific writing is rare and should be avoided.

Plagiarism is dishonest and is **not** tolerated. If caught using all or portions of a current or former classmate's writing or other sources of information (e.g., purchase a paper), a grade of zero will be given for the exercise. Additional penalties for plagiarism are possible as outlined in the *Washington State University Student Handbook*.