

# FERRIS STATE UNIVERSITY

## LEAN SYSTEMS (LSYS) – 12 CREDITS

2021-2022

Undergraduate Certificate

College of Business

Student Name	Student ID

### CREDIT VARIANCE

Credits required may vary based on course placement, prerequisites, etc. If you have questions, contact your advisor.

### ALL CERTIFICATE REQUIREMENTS – 12 CREDITS REQUIRED

(Course prerequisites are shown in parentheses)

### CERTIFICATE COURSES – 9 CREDITS REQUIRED

Prefix	Code	Course Title and Prerequisites	Credits	Grade
CHOOSE 1 OF 2	MFGE 354	Lean Manufacturing (Junior Status)	3	
	MGMT 492	Lean Service Enterprise and Leadership (MGMT 305 and Junior Status)	3	
CHOOSE 1 OF 2	MGMT 402	Six Sigma Process Management (MGMT 492 or MFGE 354)	3	
	MGMT 422	Cost Management for Lean Systems ((MGMT 492 or MFGE 354) and Junior Status)	3	
MGMT	412	Lean Culture and Skills Development (MGMT 492, MFGE 354, or Instructor Approval)	3	

### ELECTIVE – 3 CREDITS REQUIRED

Prefix	Code	Course Title and Prerequisites	Credits	Grade
CHOOSE 1 OF 6	MGMT 305	Managerial Leadership (Sophomore Status) ( <i>Must Be A Second Semester Sophomore</i> )	3	
	STQM 351	Quality Control for Management (STQM 260 with C- or higher)	3	
	MGMT 370	Quality and Operations Management (STQM 260 with C- or higher and Sophomore Status)	3	
	MGMT 432	Lean Logistics and Supply Management ((MGMT 492 or MFGE 354) and Junior Status)	3	
	MKTG 472	Supply Chain Management (MKTG 321 with C- or higher and MGMT 370)	3	
	MGMT 491	Management Internship (Department Approval) ( <i>Must Have Completion of 80 Credits</i> )	3	

### NOTES

- Students who return to the university after an interrupted enrollment, not including summer semester, must normally meet the requirements of the curriculum which are in effect at the time of their return, not the requirements which were in effect when they were originally admitted.

### ADMISSION REQUIREMENTS

- Applicant should show proof of high school graduation with a 2.35 GPA (on a 4.00 scale). If it is determined by the College of Business Dean's Office/Student Academic Affairs that regular program admission criteria should be met in order to complete the certificate successfully and be a contributing member of the course, all college transcripts should be submitted to the Admissions Office. Once admitted, an advisor will be assigned by the College of Business in the certificate program.
- Dual enrolled/concurrent students must complete their high school degree, provide transcript, before the certificate will be granted from Ferris State University.
- Students wishing to pursue a bachelor's or associate degree must meet the admission criteria for the program. This criteria review is initiated when the "Program Change Form" request is processed through the College of Business Dean's Office/Student Academic Affairs.

**PROGRAM OUTCOMES**

1. Explain the metrics and tools related to business process variation and apply Six Sigma to standardize processes across different disciplines and practices.
2. Develop and integrate an employee centric lean culture resulting in consistent organizational growth, innovation, profitability, and process excellence.
3. **MGMT 492:** Evaluate, design, improve, and lead a lean service business process initiative using Systems Planning and Thinking (seeing the whole business as a value stream), Human relations skills (leadership, strategy development and deployment, change management, and team problem solving) and Lean Principles (kaizen, Plan-Do-Check-Act (PDCA), 5S, pull, leveling process stability, standardized work, root-cause problem resolution and A3 Reporting). **OR MFGE 354:** Familiarize the manufacturing student with the concepts and practices of lean manufacturing as currently applied in industry and develop in them rudimentary skill in applying those principles, with the overall goal of enabling them to reduce waste in the workplace. Topics include push vs. pull systems, kanban, continuous flow production, take time, Single-Minute Digit Exchange of Die (SMED), Total Productive Maintenance (TPM), Total Quality Management (TQM), Theory of Constraints, 5S, poka yoke, and kaizen.
4. **MGMT 305:** Assess and create a plan to develop individual leadership skills and behaviors to improve personal and professional performance. **OR MGMT 370:** Understand global operations issues and strategies. This includes global sourcing, logistics, facility location, and environmental/sustainability. Students will be able to define the concerns and conflicts with sourcing from low-cost countries. Articulate the reason why companies support international business such as new markets or outsourcing activities. **OR MGMT 491:** Apply academic education in a work experience thus acquiring personal development with cooperating employer organizations in business, industry, government, and education. **OR MKTG 472:** Understand the strategic role played by the purchasing function in developing and improving the supply chain. Design a supply chain performance measurement system. **OR STQM 351:** Identify the requisites to process capability assessment such as process stability and process centering. Define and apply basic measures of process capability. Define and apply process benchmarking.

**GRADUATION REQUIREMENTS**

In order to graduate from Ferris State University, students must meet both University and Programmatic Graduation Requirements.

**UNIVERSITY GRADUATION REQUIREMENTS**

These are the minimum graduation requirements for an undergraduate certificate at Ferris State University:

- A GPA of 2.00 or higher must be achieved for the courses within the certificate.
- A minimum of 6 credits within the certificate must be earned.
- A minimum of 50 percent of certificate credits must be earned from Ferris State University to meet the Residency requirement.

**PROGRAMMATIC GRADUATION REQUIREMENTS**

These are the additional graduation requirements mandated by the program:

- All requirements as specified in the [All Certificate Requirements](#) section must be met.
- For students seeking a degree from Ferris State University, a maximum of 50 percent of the certificate credits can be from courses required in their program/major.
- A term prior to completion of the certificate, students must log into MyFSU and complete the “Apply for Graduation”. You will receive an email back with the next steps to take. Once this is done, the Graduation Secretary will notify the Registrar who will note the completion of the certificate.

**CONTACT INFORMATION**

COLLEGE: College of Business

PHONE: 231-591-2427

DEPARTMENT/SCHOOL: Management (MGMT)

EMAIL: [mgmt@ferris.edu](mailto:mgmt@ferris.edu)

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**DECLARATION OF CERTIFICATE**

Role	Signature	Date
Student		
Certificate Advisor		
Department Head/Chair		

