

## CIM Report Jan 29, 2024 9:53am

### Program Changes Pending Approval from Faculty Senate

Code	Field	Old Value	New Value
HRMGUM		Added	
IEOABS	Select a reason for this modification	Revising Curriculum of an Existing Certificate or Degree (making a net change of more than 15 credit hours)--(LON)	Changing Title of an Existing Certificate, Degree, or Major--(LON)
	Effective Catalog Year	Fall 2022	081 52024
	Degree	Bachelor of Science in Industrial Engineering	Bachelor of Science in Industrial Engineering and Operations Analytics
	Program Title	Industrial Engineering, Bachelor of Science in Industrial Engineering	Industrial Engineering and Operations Analytics, Bachelor of Science in Industrial Engineering and Operations Analytics
	College(s)/School(s)	ARSC WCOB	ARSC WCOB GRAD
	Program Goals and Objectives	Within 3-5 years of graduation, graduates of the University of Arkansas undergraduate program in industrial engineering will have: \n1. successfully applied core industrial engineering knowledge and skills for industrial or public sector organizations,\n2. successfully pursued advanced professional degrees, graduate studies in industrial engineering, professional development, or engineering certification, and \n3. demonstrated ongoing professional and intellectual growth as managers and leaders in industrial engineering, society, and their communities.	Within 3-5 years of graduation, graduates of the University of Arkansas undergraduate program in industrial engineering and operations analytics will have: \n1. successfully applied core industrial engineering and operations analytics knowledge and skills for industrial or public sector organizations,\n2. successfully pursued advanced professional degrees, graduate studies in industrial engineering and operations analytics, professional development, or engineering certification, and \n3. demonstrated ongoing professional and intellectual growth as managers and leaders in industrial engineering and operations analytics, society, and their communities.
	Learning Outcomes	Upon graduation, students receiving the BSIE possess:\n(1) an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics\n(2) an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors\n(3) an ability to communicate effectively with a range of audiences\n(4) an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts\n(5) an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives\n(6) an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions\n(7) an ability to acquire and apply new knowledge as needed, using appropriate learning strategies	Upon graduation, students receiving the BSIEOA possess:\n(1) an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics\n(2) an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors\n(3) an ability to communicate effectively with a range of audiences\n(4) an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts\n(5) an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives\n(6) an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions\n(7) an ability to acquire and apply new knowledge as needed, using appropriate learning strategies

Description and justification of the request	<p>Updating probability, statistics, and simulation courses. Expanding INEG 2313 to INEG 2314. Removing INEG 2333. Adding INEG 2323 and INEG 3333. Expanding INEG 3623 to INEG 3624. Redefining MATH requirements. Removing MATH 2574 and MATH 2584. Adding a 3-credit MATH elective. Removing the IE Science Elective. Removing required courses related to manufacturing processes: MEEG 2003, MEEG 2303, INEG 3513. Adding new required courses in project management (INEG 3443), logistics (INEG 3533 and INEG 3543), and databases (INEG 3833). Expanding the capstone experience from 4 to 7 credit hours (INEG 4913 and INEG 4924). Adjusting the level of several courses. Reducing the number of technical elective hours from 18 to 12. Adjusting the location of several courses in the 8-semester plan. The goal of this program curriculum revision is to modernize the content of the industrial engineering undergraduate curriculum. The last major revision to this program was more than 20 years ago.</p>	<p>We are updating the name of our undergraduate major and degree from Industrial Engineering to Industrial Engineering and Operations Analytics. In addition: (1) We are updating our students' technical elective options. (2) We are adjusting one of the state minimum core social sciences elective because we no longer need it to satisfy the requirements associated with General Education Outcome 3.3. First, regarding the name change ... For decades, industrial engineers have been recognized and valued for their skills in the design and improvement of the operations of systems of people, equipment, and information in a wide variety of industries including transportation, retail, healthcare, and production. In fact, the disciplines of operations research and operations management have long been associated with industrial engineering. Here in the Department of Industrial Engineering at the University of Arkansas, we used to offer a graduate degree in Operations Research, and for many years, we have managed a very successful graduate program in Operations Management. With recent advances in computing power, industrial engineers have become more skilled in applying the tools of analytics to operations design and improvement efforts. In this context, analytics refers to the use of data-driven models to describe past performance of industrial systems, to predict the future behavior of industrial systems, and to prescribe policies and procedures for operating industrial systems. The analytics tools that are part of the modern industrial engineering skillset include traditional statistical models, artificial intelligence techniques, mathematical optimization models, and computer simulation models. In addition, the modern industrial engineer is expected to have the computing skills required to implement these models quickly and effectively. Recently, the recognition and use of the tools of analytics have rapidly become widespread. Industrial engineers skilled in analytics are highly sought after in many industries, and analytics are becoming widely used in new areas such as politics and sports. Because of the high demand for engineers skilled in the tools of analytics and industrial engineering's long history in operations analysis, engineering, and improvement, our department recently created a new graduate program in Operations Analytics. Motivated by the analytics needs of our industrial stakeholders, our department recently overhauled the curriculum for the Bachelor of Science in Industrial Engineering. The new curriculum has an increased emphasis on computing, a more modern approach to data analysis, earlier training in mathematical modeling, and more application-driven courses in operations analysis, engineering, and improvement. The new curriculum has been well received by our students, our alumni, employers of our graduates, and our colleagues at other academic institutions. Therefore, to more appropriately capture the education our undergraduates now receive, we propose renaming our undergraduate</p>
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	Upload attachments	INEGBS - Curriculum Revision - Ltr of Notification.pdf INEGBS - Curriculum Revision - Curriculum.docx	INEGBS - Name Change - Ltr of Notification.pdf Letter of Notification Attachment.docx IEOABS - Title Change - Ltr of Notification_Rev_BOT.pdf
	Reviewer Comments	<p>agriffin - Mon, 25 Oct 2021 19:00:00 GMT - Hyperlinked INEG honors courses in program requirements.</p> <p>agriffin - Mon, 25 Oct 2021 20:30:33 GMT - Hyperlinked related pages in the program requirements for items 3, 4, and 5; adjusted formatting for item 5; and added comment for Gen Ed Outcome 6.1 to INEG 4924 with permission from submitter.</p> <p>agriffin - Mon, 25 Oct 2021 21:06:28 GMT - Renamed documents to match BOT naming convention.</p> <p>Ikulcza - Fri, 29 Oct 2021 22:19:31 GMT - All courses not found currently in approval process.</p> <p>calison - Wed, 11 May 2022 14:40:29 GMT - Minor update to degree abbreviation to match catalog style</p>	<p>agriffin - Mon, 08 May 2023 14:39:01 GMT - Hyperlinked OMGT courses listed under Approved Technical Electives, item 1.</p> <p>agriffin - Mon, 08 May 2023 15:37:42 GMT - Rollback: Unfortunately, this request does not qualify for the shortened approval process as it includes courses from ARSC and the Graduate School. Please change the reason for the modification to "making minor changes" and revise the list of colleges that this proposal impacts. (This action will impact the approval workflow.) Also change effective date to fall 2024, because it is too late to complete approval for fall 2023.</p> <p>agriffin - Tue, 23 May 2023 13:06:42 GMT - Added 3.3 to US History or Government option in year one fall semester at request of submitter.</p> <p>agriffin - Tue, 23 May 2023 16:50:43 GMT - Cleaned up language in description and justification with input from submitter.</p> <p>rossetti - Wed, 16 Aug 2023 17:55:15 GMT - Rollback: To add name change</p> <p>Ikulcza - Tue, 22 Aug 2023 22:36:46 GMT - Rollback: Please adjust the degree (credential) being awarded. You will need to reach out to Gina Daugherty in the Registrar's Office to request the addition of a Bachelor of Science in Industrial Engineering and Operations Analytics in the list of degrees in the drop-down menu.</p> <p>Ikulcza - Wed, 13 Sep 2023 15:38:20 GMT - Uploaded revised/renamed LON.</p> <p>Ikulcza - Thu, 19 Oct 2023 14:55:30 GMT - Rollback: Per request from Vice Chancellor.</p> <p>Ikulcza - Thu, 26 Oct 2023 22:08:55 GMT - Uploaded revised LON with appropriate approval dates.</p> <p>Ikulcza - Mon, 08 Jan 2024 18:17:35 GMT - Uploaded revised Letter of Notification (rev 1/8/2024).</p>
ORLEUM	Program Code	INEGBS	IEOABS
		Added	