FAU

FLORIDA ATLANTIC UNIVERSITY

NEW COURSE PROPOSAL
Graduate Programs

Department: Information Technology and Operations Management

College: Business

*(To obtain a course number, contact **erudolph@fau.edu**)*

UGPC Approval _____
UFS Approval _____
SCNS Submittal _____
Confirmed _____
Banner _____
Catalog _____

Prefix MAN **Number** 7926	*(L = Lab Course; C = Combined Lecture/Lab; add if appropriate)* **Lab Code**	**Type of Course** Lecture	**Course Title** Business Impact of Artificial Intelligence and Emerging Technologies

Credits *(Review Provost Memorandum)*
3

Effective Date *(TERM & YEAR)*
Fall2021

Grading *(Select One Option)*
Regular
Sat/UnSat

Course Description *(Syllabus must be attached; see Guidelines)*
This course provides students with an exposure to the major issues of business impact of artificial intelligence and other emerging technologies including Internet of things, service 4.0, and prepare students for academic research in this area.

Prerequisites

Prerequisites, Corequisites and Registration Controls are enforced for all sections of course.

Academic Service Learning (ASL) course
Academic Service Learning statement must be indicated in syllabus and approval attached to this form.

Corequisites
N/A

Registration Controls *(For example, Major, College, Level)*
Admission to an FAU PhD program or faculty approval

Minimum qualifications needed to teach course:
Member of the FAU graduate faculty and has a terminal degree in the subject area (or a closely related field.)

List textbook information in syllabus or here
Stuart Russell, Peter Norvig, Artificial Intelligence: A Modern Approach, 4th edition, Pearson, 978-0134610993

Faculty Contact/Email/Phone
Chul Woo Yoo/yooc@fau.edu/561-297-2532

List/Attach comments from departments affected by new course
N/A

Approved by	***Date***
Department Chair	02/11/2021
College Curriculum Chair	3/15/21
College Dean Ken Johnson	3/22/21
UGPC Chair	
UGC Chair	
Graduate College Dean	
UFS President	
Provost	

Email this form and syllabus to UGPC@fau.edu 10 days before the UGPC meeting.

Memo (ISM 7926 Business Impact of AI and Emerging Technologies)

Ph.D. Education in Business

In order to be marketable for academic positions, Ph.D. in the Business Administration students have to have published articles in high quality Business journals by the time they graduate. Writing code and learning Data Science algorithms will not help them be marketable in Business colleges and is not an effective way to advance in the career. Thus, the main goals of the Ph.D. seminars are for students to write papers and conference presentations. For this reason, departments do not teach Ph.D. students in lecture format, chapter by chapter from a textbook and homework exercises. Instead, guided by the professor, students research their own tools that will be able to solve the research problem they picked. They may need to go to another professor for that.

Usually, every course finishes with a paper ready to be submitted. This makes the Ph.D. instruction in the seminar highly individual, based on the topic of interest a student will choose. Then they will do literature research related to the seminar subject and pick a research question of their interest. The instructor is then engaged with each individual student to help her/him through the stages: literature research, usage of appropriate technology tool/code reuse or snippets if necessary, writing the paper.

The class instruction includes discussions on a list of high-quality academic articles to be read by students, and to help them develop their own research papers presentable in the journals and conferences of the business areas. A class session will dedicate about 30% of the time on discussions – group and individual – over a certain paper picked from the list for that class session.

The nature of the proposed course.

Key components of this course include reading, reviewing and presenting the assigned journal articles. The list of journal articles is updated to include the most impactful and recent papers. The required textbook is only used as a reference when one or more students need more technological knowledge. The textbook is not a main teaching material. In the PhD seminars, we are not teaching the underlying code or program for e.g., AI or blockchain. We teach how these technologies change the business ecosystems, and how to use existing tools and codes to examine the business and management problems. In this context, technologies are used as a tool and an application to conduct the business research. Technology is not a purpose of the paper.

As integral attachment to the memo are example papers which use deep learning/AI/Business analytics and solve a business research problem. It is clearly seen that such paper would not be able to be produced in any other college. The keywords AI, deep learning, Python, etc. do not make these papers computer science or mathematical sciences papers. These papers cannot be published in Computer Science or Mathematical Sciences journals.

Florida Atlantic University
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MAN 7926 - Section 001
CRN: XXXXX
Course Title: Business Impact of Artificial Intelligence and Emerging Technologies
Term: Spring 2022
Class Location: FLXXX,
Class Meeting Time: XX XX:00PM-XX:00PM

Professor Information

Instructor: Dr. XXX
Office: FL XXX, Boca Campus
Email: XXX@fau.edu
Phone: (561) XXX-XXXX

Office Hours

XX XX:00PM-XX:00PM, or by appointment

Required Text and Materials

Main research articles for reading are downloadable.
Stuart Russell, Peter Norvig, Artificial Intelligence: A Modern Approach, 4th edition, Pearson, 978-0134610993

Course Description

This course provides students with an exposure to the major issues of business impact of artificial intelligence and other emerging technologies including Internet of things, service 4.0, and prepare students for academic research in this area.

Course Prerequisites and Credit Hours

This course is 3-credit and needs admission to FAU PhD program or faculty approval as prerequisite requirement.

Class Time Commitments

According to Florida Administrative Code, Rule 6A-10.033, students must spend a minimum 2,250 minutes of in-class time during a 3-credit course. Additionally, students enrolled in a 3-credit course are expected to spend a minimum of 4,500 minutes of out-of-class-time specifically working on course-related activities (i.e., reading assigned pieces, completing homework, preparing for exams and other assessments, reviewing class notes, etc.) and fulfilling any other class activities or duties as required. The course schedule for this course reflects this expectation of students.

Course Learning Objectives

The main objective of the course is to introduce students to both the theory and practice of artificial intelligence and other emerging technologies in terms of business applications. Other learning objectives include:

- Understanding the elements of AI and emerging technologies in business
- Understanding the technologies and applications in AI and emerging technologies in business
- Creating a managerial understanding of AI and emerging technologies, and using them for the creation of competitive advantages for the organization
- Invoke critical thinking to strategize and plan technology-based solutions to achieve business goals
- A topic analysis (i.e., mini research proposal) on any topic covered during the semester should be developed.

Course Delivery Mode

F2F traditional classroom course.

Course Resources

This course will use the Canvas course management tool, and changes will be announced on the course web site. Several lectures might be delivered via Canvas as well as Canvas collaboration as needed. Students are expected and required to have Internet access for this course. It is the student's responsibility to check their FAU email regularly. The instructor will assume that all announcements or updates sent out to the students' FAU email address are received, read, and acted upon accordingly.

Grading Scale
Grades are rounded up to the nearest tenth of a point.

Grade Percentage Breakdown		Final Grade Assignment		
Readings & Presentations	20%	A	100	– 94.00
Topic Analysis	60%	A-	93.99	– 91.00
Participation	20%	B+	90.99	– 88.00
		B	87.99	– 84.00
		B-	83.99	– 80.00
		C+	79.99	– 76.00
Total	**100%**	C	75.99	– 74.00
		C-	73.99	– 70.00
		D+	69.99	– 68.00
		D	67.99	– 64.00
		D-	63.99	– 60.00
		F	59.99	– 0.00

Course Evaluation Method

1. Readings and Presentations:
Students are required to read all the assigned readings (in bold) for each session. In addition, students will be individually assigned a specific reading on which you will present and lead the class discussion. Students will prepare a review of the paper, which should include a summary and a critique of the reading and identify one short research question that could extend the paper.
Further, one volunteer will perform the role of an ′integrator′ for each session, tying together the readings and placing them in the context of the field. The integrator will not be required to turn in the paper review for that session but will prepare a summary (1-2 pages), preferably in the form of tables or diagrams, covering all the readings scheduled for that session.

2. Topic Analysis:
Students are also required to write a term paper (i.e., topic analysis). The term paper will include

- Identifying a focal question
- Providing a relevant literature review
- Developing logical hypotheses, and

- Conducting at least a limited empirical exploration of the hypotheses (e.g., data sources, sample, variables and measures, and estimation methods).

Empirical results are not required but are highly recommended.
For those of you from other areas/departments, your research topic is not limited to the topics we cover in class, but it should be related to the course in some way. Please feel free to discuss your paper with the instructor over the term.

3. Participation:
Students are required to attend every session and be prepared to actively participate in discussions. This is not a lecture course. Class discussion and interaction are a crucial part of our synthesis of the material and learning. Good participation includes asking questions, raising original ideas, making constructive comments, and having a positive attitude toward learning.

Additional Course Policies

Attendance Policy
Students are expected to attend all of their scheduled University classes and to satisfy all academic objectives as outlined by the instructor. The effect of absences upon grades is determined by the instructor, and the University reserves the right to deal at any time with individual cases of non-attendance.

Students are responsible for arranging to make up work missed because of legitimate class absence, such as illness, family emergencies, military obligation, court-imposed legal obligations or participation in University-approved activities. Examples of University-approved reasons for absences include participating on an athletic or scholastic team, musical and theatrical performances and debate activities. It is the student's responsibility to give the instructor notice prior to any anticipated absences and within a reasonable amount of time after an unanticipated absence, ordinarily by the next scheduled class meeting. Instructors must allow each student who is absent for a University-approved reason the opportunity to make up work missed without any reduction in the student's final course grade as a direct result of such action.

Final Letter Grading
Final letter grade will be posted before XXX XXth, students are responsible for checking their final letter grade. After XXX XXth final letter grade will not be changed.

Incomplete Grade Policy
The University policy states that a student who is passing a course but has not completed all work due to exceptional circumstances, may, with consent of the instructor, temporarily receive a grade of incomplete ("I"). The assignment of the "I" grade is at the discretion of the instructor but is allowed only if the student is passing the course.

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Course Outline

Week	Topics
1	Human Intelligence, Cognition, and Decision Making 1.
2	Human Intelligence, Cognition, and Decision Making 2.
3	Human Intelligence, Cognition, and Decision Making 3.
4	History of Technology: The Four Industrial Revolution 1.
5	History of Technology: The Four Industrial Revolution 2.
6	History of Technology: The Four Industrial Revolution 3.
7	A Review of 21st Century Technologies 1.
8	A Review of 21st Century Technologies 2.
9	A Review of 21st Century Technologies 3.
10	A Survey of Short and Medium Term Impact of Technology on Various Business Sectors:2020-2040 1.
11	A Survey of Short and Medium Term Impact of Technology on Various Business Sectors:2020-2040 2.
12	Philosophy, Ethics, Policy, and Regulation of Technology 1.
13	Philosophy, Ethics, Policy, and Regulation of Technology 2.
14	Final Project Presentation 1
15	Final Project Presentation 2

*This course outline is subject to change, depending on class pace and needs.
**Instructor reserves the rights to make any changes needed.
***Students are responsible for being familiar with any revisions.

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COURSE POLICIES

CODE OF ACADEMIC INTEGRITY POLICY STATEMENT

Students at Florida Atlantic University should endeavor to maintain the highest ethical standards. Academic dishonesty is a serious breach of these ethical standards because it interferes with the University mission to provide a high-quality education in which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive to the university community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, see University Regulation 4.001.

PLAGIARISM

Plagiarism is unacceptable in the University community. Academic work must be an original work of your own thought, research, or self-expression. When students borrow ideas, wording, or organization from another source, they must acknowledge that fact in an appropriate manner. Plagiarism is the deliberate use and appropriation of another's work without identifying the source and trying to pass off such work as one's own. Any student who fails to give full credit for ideas or materials taken from another has plagiarized. This includes all discussion board posts, journal entries, wikis, and other written and oral presentation assignments. If in doubt, cite your source.

ONLINE ATTENDANCE POLICY

Since the course is online, you should access the course **at least three times per week** to ensure you do not miss pertinent postings, messages, or announcements. It is imperative that you meet course deadlines and stay active in discussion boards, group projects, etc. If you are experiencing major illness, absences due to University duties, or other large-scale issues, contact the instructor immediately to formulate a resolution.

NETIQUETTE

Due to the casual communication common in the online environment, students are sometimes tempted to relax their grammar, spelling, and/or professionalism. Please remember that you are adult students and professionals—your communication should be appropriate. For more in-depth information, please see the FAU Statement on Netiquette.

CLASSROOM ETIQUETTE/DISRUPTIVE BEHAVIOR POLICY STATEMENT

Disruptive behavior is defined in the FAU Student Code of Conduct as "... activities which interfere with the educational mission within classroom." Students who disrupt the educational experiences of other students and/or the instructor's course objectives in a face-to-face or online course are subject to disciplinary action. Such behavior impedes students' ability to learn or an instructor's ability to teach. Disruptive behavior may include but is not limited to non-approved use of electronic devices (including cellular telephones); cursing or shouting at others in such a way as to be disruptive; or, other violations of an instructor's expectations for classroom conduct.
For more information, please see the FAU Office of Student Conduct.

COMMUNICATION POLICY

EXPECTATIONS FOR STUDENTS

Announcements

You are responsible for reading all announcements posted by the instructor. Check the course announcements each time you log in.

Email/Video Conferencing

You are responsible for reading all your course email and responding in a timely manner.

Course-Related Questions

Post course-related questions to the FAQ Discussion board. This allows other participants with the same question to benefit from the responses. Also, make sure you review this forum prior to posting a question. Someone may have already asked and answered the question in previous posts.

INSTRUCTOR'S PLAN FOR CLASSROOM RESPONSE TIME & FEEDBACK

Email/Video Conferencing Policy

Except for weekends and holidays, the instructor will typically respond to email (Canvas inbox or FAU email) within 48 hours. You should ask course-related questions in the FAQ Discussion board. If you have questions of a personal nature, you should email the instructor.

Assignment Feedback Policy

The instructor will provide feedback on submitted assignments within one week of the submission date. Some assignments may require a longer review period, which the instructor will communicate to you.

Course-Related Questions Policy

Except weekends and holidays, the instructor will generally answer questions within 48 hours.

Electronic Communication Policy

In addition to the University's policy, please consider the following:

- Privacy, confidentiality, and security in all electronic communications.
- All electronic communication resources must be used for the course and in alignment with to the University mission.
- Prohibited use of false identity, false identity pseudonyms, or anonymous (sender's name or electronic identification is hidden).
- Access without consent.
- Disruption of services including introducing computer contaminants (viruses).
- Harassment of any kind.

Please see the Office of Information Technology's policies on Cyber Security Awareness.

SUPPORT SERVICES & ONLINE RESOURCES

- Center for eLearning and Student Success
- Counseling and Psychological Services
- FAU Libraries
- Math Learning Center
- Office of Information Technology Helpdesk
- Office of International Programs and Study Abroad
- Office of Undergraduate Research and Inquiry
- Student Accessibility Services
- University Center for Excellence in Writing

Selected University and College Policies

Code of Academic Integrity Policy Statement

Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty is considered a serious breach of these ethical standards, because it interferes with the university mission to provide a high quality education in which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive of the university community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty.

For more information, please see FAU Regulation 4.001 at: FAU Regulation 4.001.

Disability Policy Statement

In compliance with the Americans with Disabilities Act Amendments Act (ADAAA), students who require reasonable accommodations due to a disability to properly execute coursework must register with Student Accessibility Services (SAS) and follow all SAS procedures. SAS has offices across three of FAU's campuses – Boca Raton, Davie and Jupiter – however disability services are available for students on all campuses. For more information, please visit the SAS website at http://fau.edu/sas/

Counseling and Psychological Services (CAPS) Center

Life as a university student can be challenging physically, mentally and emotionally. Students who find stress negatively affecting their ability to achieve academic or personal goals may wish to consider utilizing FAU's Counseling and Psychological Services (CAPS) Center. CAPS provides FAU students a range of services – individual counseling, support meetings, and psychiatric services, to name a few – offered to help improve and maintain emotional well-being. For more information, go to http://www.fau.edu/counseling/

Religious Accommodation Policy Statement

In accordance with rules of the Florida Board of Education and Florida law, students have the right to reasonable accommodations from the University in order to observe religious practices, observances, and beliefs with regard to admissions, registration, class attendance and the scheduling of examinations and work assignments.

For further information, please see FAU Regulation 2.007 at: FAU Regulation 2.007.

University Approved Absence Policy Statement

In accordance with rules of the Florida Atlantic University, students have the right to reasonable accommodations to participate in University approved activities, including athletic or scholastics teams, musical and theatrical performances and debate activities. It is the student's responsibility to notify the course instructor at least one week prior to missing any course assignment.

Incomplete Grade Policy Statement

A student who is passing a course, but has not completed all work due to exceptional circumstances, may, with consent of the instructor, temporarily receive a grade of incomplete ("I"). The assignment of the "I" grade is at the discretion of the instructor, but is allowed only if the student is passing the course.

The specific time required to make up an incomplete grade is at the discretion of the instructor. However, the College of Business policy on the resolution of incomplete grades requires that all work required to satisfy an incomplete ("I") grade must be completed within a period of time not exceeding one calendar year from the assignment of the incomplete grade. After one calendar year, the incomplete grade automatically becomes a failing ("F") grade.

Withdrawals

Any student who decides to drop is responsible for completing the proper process required to withdraw from the course.

Disruptive Behavior Policy Statement

Disruptive behavior is defined in the FAU Student Code of Conduct as *"... activities which interfere with the educational mission within classroom."* Students who behave in the classroom such that the educational experiences of other students and/or the instructor's course objectives are disrupted are subject to disciplinary action. Such behavior impedes students' ability to learn or an instructor's ability to teach. Disruptive behavior may include, but is not limited to: non-approved use of electronic devices (including cellular telephones); cursing or shouting at others in such a way as to be disruptive; or, other violations of an instructor's expectations for classroom conduct.

Faculty Rights and Responsibilities

Florida Atlantic University respects the right of instructors to teach and students to learn. Maintenance of these rights requires classroom conditions which do not impede their exercise. To ensure these rights, faculty members have the prerogative:

- To establish and implement academic standards
- To establish and enforce reasonable behavior standards in each class
- To refer disciplinary action to those students whose behavior may be judged to be disruptive under the Student Code of Conduct.

Articles for Reading

1. Zameer, H., Wang, Y., Yasmeen, H. and Mubarak, S. (2020), Green innovation as a mediator in the impact of business analytics and environmental orientation on green competitive advantage, *Management Decision*.
2. Zhang, C. and Chen, Y. (2020). A Review of Research Relevant to the Emerging Industry Trends: Industry 4.0, IoT, Blockchain, and Business Analytics, *Journal of Industrial Integration and Management*, 05:01, 165-180.
3. S.E. DeGroote, T.G. Marx, (2013), "The impact of IT on supply chain agility and firm performance: An empirical investigation," International Journal of Information Management, v33, pp. 909-916 https://doi.org/10.1016/j.ijinfomgt.2013.09.001
4. Mohamed Ben-Daya, Elkafi Hassini & Zied Bahroun (2019) Internet of things and supply chain management: a literature review, International Journal of Production Research, 57:15-16, 4719-4742, DOI: 10.1080/00207543.2017.1402140
5. Hokey Min (2010) Artificial intelligence in supply chain management: theory and applications, International Journal of Logistics Research and Applications, 13:1, 13-39.
6. Theorin, A., Bengtsson, K., Provost, J., Lieder, M., Johnsson, C., Lundholm, T., & Lennartson, B. (2017). An event-driven manufacturing information system architecture for Industry 4.0. *International Journal of Production Research*, *55*(5), 1297-1311.
7. Dai, J., & Vasarhelyi, M. A. (2017). Toward blockchain-based accounting and assurance. *Journal of Information Systems*, *31*(3), 5-21.
8. Duan, Y., Edwards, J. S., & Dwivedi, Y. K. (2019). Artificial intelligence for decision making in the era of Big Data–evolution, challenges and research agenda. *International Journal of Information Management*, *48*, 63-71.
9. Frank, A. G., Dalenogare, L. S., & Ayala, N. F. (2019). Industry 4.0 technologies: Implementation patterns in manufacturing companies. International Journal of Production Economics, 210, 15-26.
10. Ng, I. C., & Wakenshaw, S. Y. (2017). The Internet-of-Things: Review and research directions. *International Journal of Research in Marketing*, *34*(1), 3-21.
11. Shim, J. P., Avital, M., Dennis, A. R., Rossi, M., Sørensen, C., & French, A. (2019). The transformative effect of the internet of things on business and society. *Communications of the Association for Information Systems*, *44*(1), 5.
12. Oberländer, A. M., Röglinger, M., Rosemann, M., & Kees, A. (2018). Conceptualizing business-to-thing interactions–A sociomaterial perspective on the Internet of Things. *European Journal of Information Systems*, *27*(4), 486-502.
13. Saberi, S., Kouhizadeh, M., Sarkis, J., & Shen, L. (2019). Blockchain technology and its relationships to sustainable supply chain management. *International Journal of Production Research*, *57*(7), 2117-2135.

-The instructor reserves the right to adjust this list as necessary