

STUDENT WARNING: This course syllabus is from a previous semester archive and serves only as a preparatory reference. Please use this syllabus as a reference only until the professor opens the classroom and you have access to the updated course syllabus. Please do NOT purchase any books or start any work based on this syllabus; this syllabus may NOT be the one that your individual instructor uses for a course that has not yet started. If you need to verify course textbooks, please refer to the online course description through your student portal. This syllabus is proprietary material of APUS.

# STEM471: Analytics, Algorithms, AI and Humanity

## Course Summary

Course: STEM471 Title: Analytics, Algorithms, AI and Humanity

Length of Course: 8

Prerequisites: N/A Credit Hours: 3

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## Description

### Course Description:

Welcome to STEM 471! In this course, you will, as the title suggests, explore how analytics, algorithms, and AI impact humanity. We will study several critical ethical, political, psychological, and economic implications of these technologies. Your work in the course will inform your day-to-day and professional uses of these technologies. For some of you, the course content may even inform how you design new technologies. The course does not presuppose any specific technical knowledge.

### Course Scope:

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This course covers the effects of big data analytics, algorithms, and AI on privacy, labor, interpersonal relationships, art, bias, and the prospect of designing robots that will be entitled to rights.

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## Objectives

By the end of this course, you will be able to:

- CO-1: Explain what artificial intelligence analytics are and how they impact today's society, both positively and negatively
- CO-2: Explain how analytics and continuous information collection come together to form a "big data" environment
- CO-3: Explain and assess the implications of big data analytics in political and societal change
- CO-4: Explain and assess the growing ethical and privacy concerns inherent in the use of these technologies

## Outline

### Week 1: Introduction and Perspectives on Human-Artificial Intelligence Interaction

#### Learning Outcomes

- **CO1: Explain what artificial intelligence analytics are and how they impact today's society, both positively and negatively**
  - LO1.1: Evaluate the potential risks of further AI research and technology
  - LO1.2: Evaluate the potential benefits of further AI research on technology
  - LO1.3: Assess different theories of what AI is
- **CO4: Explain and assess the growing ethical and privacy concerns inherent in the use of these technologies.**
  - LO4.1: Examine the role of machine learning in the development of modern AI
  - LO4.2: Identify how AI is used in analytics

#### Reading and Resources

Links for all readings are provided in the course e-reserve. This is located in each of the weekly lessons.

#### Assignments

- **Week 1 Welcome Discussion** – For week 1, the discussion is due at the end of the week on Sunday. In subsequent weeks, the initial post is due mid-week.

### Week 2: Privacy and Big Data

#### Learning Outcomes

- **CO-2: Explain how analytics and continuous information collection come together to form a "big data" environment**
  - LO2.1: Define "big data"
  - LO2.2: Explain how big data sets can be used to reduce anonymity
- **CO-4: Explain and assess the growing ethical and privacy concerns inherent in the use of these technologies**
  - LO4.4: Assess the risks of various kinds of big data collection and analytics
  - LO4.5: Assess the benefits of various kinds of big data collection and analytics

- LO4.6: Assess tradeoffs between the risks and benefits of various kinds of big data collection
- LO4.7: Assess regulations designed to protect privacy against big data

### Reading and Resources

Links for all readings are provided in the course e-reserve. This is located in each of the weekly lessons.

### Assignments

W2 Discussion: Big Data Analytics Analysis Essay

## Week 3: Politics and Public Opinion

### Learning Outcomes

- **CO1: Explain what artificial intelligence analytics are and how they impact today's society, both positively and negatively**
  - LO1.3: Explain some of the AI, analytic, or algorithmic technologies that affect politics.
- **CO3: Explain and assess the implications of big data analytics in political and societal change**
  - LO3.1: Assess the benefits, for government policy or political behavior, of AI, analytic, or algorithmic technologies.
  - LO3.2: Assess the drawbacks, for government policy or political behavior, of AI, analytic, or algorithmic technologies.

### Reading and Resources

Links for all readings are provided in the course e-reserve. This is located in each of the weekly lessons.

### Assignments

Essay One: AI and Politics

## Week 4: Algorithmic Bias

### Learning Outcomes

- **CO1: Explain what artificial intelligence analytics are and how they impact today's society, both positively and negatively**

- LO-1.4: Explain how reliance on algorithms in various sectors can differentially impact different groups.
- **CO4: Explain and assess the growing ethical and privacy concerns inherent in the use of these technologies**
  - LO-4.8: Explain some of the ethical concerns about differential impacts on segments of society.

### Reading and Resources

Links for all readings are provided in the course e-reserve. This is located in each of the weekly lessons.

### Assignments

W4 Discussion: Algorithmic Bias

## Week 5: Art, Entertainment and Media

### Learning Outcomes

- **CO1: Explain what artificial intelligence analytics are and how they impact today's society, both positively and negatively**
  - LO1.5: Explain some of the ways AI or big data are used in the creation or analysis of art.
- **CO4: Explain and assess the growing ethical and privacy concerns inherent in the use of these technologies**
  - LO4.9: Evaluate whether AI or big data can enrich the creation or analysis of art.

### Reading and Resources

Links for all readings are provided in the course e-reserve. This is located in each of the weekly lessons.

### Assignments

Essay Two: AI and Art

## Week 6: Interpersonal Relationships

### Learning Outcomes

- **CO1: Explain what artificial intelligence analytics are and how they impact today's society, both positively and negatively.**
  - LO1.6: Explain the effects of social media applications on interpersonal relationships
  - LO1.7: Evaluate the costs of social media applications for relationships and well-

being

LO1.8: Evaluate the benefits of social media applications for relationships and well-being

- **CO4: Explain and assess the growing ethical and privacy concerns inherent in the use of these technologies**
  - LO4.10: Evaluate the risks of social media applications for relationships and individual well-being

### Reading and Resources

Links for all readings are provided in the course e-reserve. This is located in each of the weekly lessons.

### Assignments

W6 Discussion: Interpersonal Relationships

## Week 7: Labor

### Learning Outcomes

- **CO1: Explain what artificial intelligence analytics are and how they impact today's society, both positively and negatively**
  - LO 1.9: Explain the major theories of the effects of AI on automation and the labor market.
- **CO3: Explain and assess the implications of big data analytics in political and societal change**
  - LO3.3: Explain solutions to the potential problems raised by AI's effects on labor.
  - LO3.4: Evaluate solutions to the potential problems raised by AI's effects on labor.

### Reading and Resources

Links for all readings are provided in the course e-reserve. This is located in each of the weekly lessons.

### Assignments

Essay Three: AI and Labor

## Week 8: Robot Rights

### Learning Outcomes

- **CO1: Explain what artificial intelligence analytics are and how they impact today's society, both positively and negatively**
  - LO1.10: Explain the relationship between developments in AI and developments in robotics.

- CO3: Explain and assess the implications of big data analytics in political and societal change
  - LO3.5: Evaluate the potential benefits of modern developments in robotics.
  - LO3.6: Evaluate the potential drawbacks of modern developments in robotics
- CO4: Explain and assess the growing ethical and privacy concerns inherent in the use of these technologies
  - LO4.11: Explain the challenges that developments in robotics pose for social practices or institutions

### Reading and Resources

Links for all readings are provided in the course e-reserve. This is located in each of the weekly lessons.

### Assignments

W8 Discussion: Modern AI, Moral Status of Robots and Human-Robot Relationships

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## Evaluation

### Late Assignments

Students are expected to submit assignments by the due dates listed in the classroom. Late assignments, including but not limited to Assignments, Discussions, posts and responses, quizzes, and exams, may or may not be accepted after the course end date. Submitting an assignment after the due date may result in a penalty of up to 10% of the grade per day late, not to exceed a maximum 50% of the grade. The amount of the penalty is at the faculty member's discretion. Faculty recognize that students have limited time and maybe more flexible if potential delays are communicated ahead of time.\*

\*Doctoral and Programs with specialty accreditation may have different late policies.

\*\*Students with DSA accommodations may have different late policies applied. For more information regarding our DSA services, please contact [DSA@apus.edu](mailto:DSA@apus.edu).

### Grading

<i>Name</i>	<i>Grade %</i>
<b>Discussions (5)</b>	<b>60%</b>
Welcome Discussion	
Big Data Analytics Analysis	
Algorithmic Bias	
Interpersonal Relationships	

Modern AI, Moral Status of Robots and Human-Robot Relationships	
<b>Assignments (3)</b>	<b>40%</b>
Essay 1: AI and Politics	
Essay 2: AI and Art	
Essay 3: AI and Labor	

## Materials

**Book Title:** Various resources from Trefry Library and/or the Open Web are used. Links provided inside the classroom.

All required readings are located in the Reading and Resources tab under the Lessons tab.

## Course Guidelines

### Writing Expectations

All activities completed in this course are to follow the stated instructions (inside the classroom). Always check the grading rubrics to see what your instructor will be on the lookout for when grading your work. Also, be sure you have read the APUS Plagiarism Policy (the entire Academic Dishonesty section) before submitting work in this or in any other course. See the above Course Outline or the Policies section on this Syllabus for links.

### Citation and Reference Style

Attention: You will follow the citation style that is common to your discipline. Instructions regarding citation styles are included in the classroom.

### Late Assignments

Students are expected to submit assignments by the due dates listed in the classroom. Late assignments, including but not limited to Assignments, Discussions, posts and responses, quizzes, and exams, may or may not be accepted after the course end date. Submitting an assignment after the due date may result in a penalty of up to 10% of the grade per day late, not to exceed a maximum 50% of the grade. The amount of the penalty is at the faculty member's discretion. Faculty recognize that students have limited time and maybe more flexible if potential delays are communicated ahead of time.\*

\*Doctoral and Programs with specialty accreditation may have different late policies.

\*\*Students with DSA accommodations may have different late policies applied. For more information regarding our DSA services, please contact DSA@apus.edu.

Also, completing all Assignments (under the Assignments tab) is paramount to your success in this course.



## Netiquette

Online universities promote the advancement of knowledge through positive and constructive debate, both inside and outside the classroom. Forums on the Internet, however, can occasionally degenerate into needless insults and flaming. Such activity and the loss of good manners are not acceptable in a university setting. Basic academic rules of good behavior and proper Netiquette must persist.

Remember that you are in a place for the rewards and excitement of learning, which does not include descent to personal attacks or student attempts to stifle the learning of others.

- Humor Note: Despite the best of intentions, jokes and especially satire can easily get lost or taken seriously. If you feel the need for humor, you may wish to add emoticons to help alert your readers: ;-), :) , .

## Disclaimer Statement

Course content may vary from the outline to meet the needs of this particular group.

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## Communications

### Student Communication

To reach the instructor, please communicate through the MyClassroom email function accessible from the Classlist of the Course Tools menu, where the instructor and students email addresses are listed, or via the Office 365 tool on the Course homepage.

- In emails to instructors, it's important to note the specific course in which you are enrolled. The name of the course is at the top center of all pages.
- Students and instructors communicate in Discussion posts and other learning activities.
- All interactions should follow APUS guidelines, as noted in the [Student Handbook](#), and maintain a professional, courteous tone.
- Students should review writing for spelling and grammar.
- [Tips on Using the Office 365 Email Tool](#)

### Instructor Communication

The instructor will post announcements on communications preferences involving email and Instant Messaging and any changes in the class schedule or activities.

- Instructors will periodically post information on the expectations of students and will provide feedback on assignments, Discussion posts, quizzes, and exams.
  - Instructors will generally acknowledge student communications within 24 hours and respond within 48 hours, except in unusual circumstances (e.g., illness).
  - The APUS standard for grading of all assessments (assignments, Discussions, quizzes, exams) is five days or fewer from the due date.
  - Final course grades are submitted by faculty no later than seven days after the end date of the course or the end of the extension period.
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## University Policies

Consult the [Student Handbook](#) for processes and policies at APUS. Notable policies:

- [Drop/Withdrawal Policy](#)
- [Extension Requests](#)
- [Academic Probation](#)
- [Appeals](#)
- [Academic Dishonesty / Plagiarism](#)
- [Disability Accommodations](#)
- [Student Deadlines](#)
- [Video Conference Policy](#)

## Mission

The [mission of American Public University System](#) is to provide high-quality higher education with emphasis on educating the nation's military and public service communities by offering respected, relevant, accessible, affordable, and student-focused online programs that prepare students for service and leadership in a diverse, global society.

## Minimum Technology Requirements

- Please consult the catalog for the minimum hardware and software required for [undergraduate](#) and [graduate](#) courses.
- Although students are encouraged to use the [Pulse mobile app](#) with any course, please note that not all course work can be completed via a mobile device.

## Disclaimers

- Please note that course content – and, thus, the syllabus – may change between when a student registers for a course and when the course starts.
- Course content may vary from the syllabus' schedule to meet the needs of a particular group.