**PLAN STUDIÓW STACJONARNYCH** Rekrutacja w roku akademickim 2019/2020 Uniwersytet Zielonogórski

Nazwa kierunku studiów: **Inżynieria Danych - pierwszy stopień** czas trwania: 7 semestrów WYDZIAŁ MATEMATYKI, INFORMATYKI I EKONOMETRII

Forma studiów: **stacjonarne**

| LP. | | NAZWA PRZEDMIOTU | Liczba godzin | ECTS | Forma zal | SEMESTR 1 | | | | | | | | SEMESTR 2 | | | | | | | | SEMESTR 3 | | | | | | | | SEMESTR 4 | | | | | | | | SEMESTR 5 | | | | | | | | SEMESTR 6 | | | | | | | | SEMESTR 7 | | | | | | | |
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| | | | | | | Forma zajęć | | | | | | Forma zal | ECTS | Forma zajęć | | | | | | Forma zal | ECTS | Forma zajęć | | | | | | Forma zal | ECTS | Forma zajęć | | | | | | Forma zal | ECTS | Forma zajęć | | | | | | Forma zal | ECTS | Forma zajęć | | | | | | Forma zal | ECTS | Forma zajęć | | | | | | Forma zal | ECTS |
| | | | | | | W | Ć | L | P | S | Pr | | | W | Ć | L | P | S | Pr | | | W | Ć | L | P | S | Pr | | | W | Ć | L | P | S | Pr | | | W | Ć | L | P | S | Pr | | | W | Ć | L | P | S | Pr | | | W | Ć | L | P | S | Pr | | |
| 1 | Moduł przedmiotów obowiązkowych (ogólne, podstawowe i kierunkowe) | Język angielski 1 | 30 | 2 | O | | | | | | | | | | | 30 | | | | O | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | Język angielski 2 | 30 | 2 | O | | | | | | | | | | | | | | | | | | | 30 | | | | O | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | Język angielski 3 | 30 | 2 | O | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | | | O | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | Język angielski 4 | 30 | 2 | E | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | | | E | 2 | | | | | | | | | | | | | | | | |
| 5 | | Wychowanie fizyczne 1 | 30 | 0 | Z | | 30 | | | | | Z | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | | Wychowanie fizyczne 2 | 30 | 0 | Z | | | | | | | | | | 30 | | | | | Z | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | | Algebra liniowa | 60 | 6 | EO | 30 | 30 | | | | | EO | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | | Algebra liniowa i geometria analityczna | 60 | 6 | EO | | | | | | | | | 30 | 30 | | | | | EO | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | | Algorytmy i struktury danych 1 | 60 | 5 | EO | | | | | | | | | 30 | | 30 | | | | EO | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | Algorytmy i struktury danych 2 | 30 | 2 | O | | | | | | | | | | | | | | | | | | | | 30 | | | O | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | | Analiza danych statystycznych | 60 | 5 | EO | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | 30 | | | | EO | 5 | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | | Analiza matematyczna 1 | 90 | 7 | EO | 45 | 45 | | | | | EO | 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | | Analiza matematyczna 2 | 90 | 7 | EO | | | | | | | | | 45 | 45 | | | | | EO | 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | | Bezpieczeństwo systemów informatycznych i ochrona danych | 75 | 6 | EOO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | 30 | 15 | | | EOO | 6 | | | | | | | | | | | | | | | | |
| 15 | | Kombinatoryczne podstawy informatyki | 75 | 6 | EOO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | 30 | 15 | | | | EOO | 6 | | | | | | | | |
| 16 | | Metody numeryczne w języku Python | 60 | 6 | EO | | | | | | | | | | | | | | | | | 30 | | 30 | | | | EO | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | | Metody opisu danych w R | 30 | 3 | O | | | 30 | | | | O | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | | Metody optymalizacji | 90 | 7 | EOO | | | | | | | | | | | | | | | | | | | | | | | | | 30 | 30 | 30 | | | | EOO | 7 | | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | | Pakiety matematyczne 1 | 30 | 3 | O | | | 30 | | | | O | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 | | Pakiety matematyczne 2 | 30 | 3 | O | | | | | | | | | | | 30 | | | | O | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | | Pakiety użytkowe | 30 | 2 | O | | | | | | | | | | | 30 | | | | O | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 22 | | Podstawy logiki i analizy ilościowej | 60 | 6 | EO | 30 | 30 | | | | | EO | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 23 | | Podstawy programowania | 60 | 5 | EO | 30 | | 30 | | | | EO | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 24 | | Podstawy zarządzania i przedsiębiorczości | 60 | 5 | EO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | 30 | | | | | EO | 5 | | | | | | | | | | | | | | | | |
| 25 | | Programowanie obiektowe 1 | 60 | 6 | EO | | | | | | | | | | | | | | | | | 30 | | 30 | | | | EO | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | | Programowanie obiektowe 2 | 30 | 2 | O | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | | O | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| 27 | | Równania różniczkowe z zastosowaniami | 75 | 6 | EOO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | 15 | 30 | | | | EOO | 6 | | | | | | | | | | | | | | | | |
| 28 | | Systemy baz danych 1 | 75 | 6 | EOO | | | | | | | | | | | | | | | | | 30 | 15 | 30 | | | | EOO | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 29 | | Systemy baz danych 2 | 30 | 2 | O | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | | O | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | | Wprowadzenie do teorii grafów | 60 | 6 | EO | | | | | | | | | 30 | 30 | | | | | EO | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 31 | | Wstęp do rachunku prawdopodobieństwa | 75 | 6 | EOO | | | | | | | | | | | | | | | | | 30 | 30 | 15 | | | | EOO | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 32 | | Inżynierski projekt dyplomowy 1 | 30 | 3 | O | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | O | 3 | | | | | | | | |
| 33 | | Inżynierski projekt dyplomowy 2 | 60 | 13 | Z | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 60 | | Z | 13 |
| 1 | specjalność - Modelowanie i analiza danych | Analiza modeli ekonometrycznych | 60 | 5 | OO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | 30 | | | | OO | 5 | | | | | | | | | | | | | | | | |
| 2 | | Badania operacyjne | 60 | 6 | EO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | 30 | | | | EO | 6 | | | | | | | | |
| 3 | | Matematyka finansowa | 60 | 6 | EO | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | 30 | | | | EO | 6 | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | Metody obliczeniowe w zagadnieniach inżynierskich | 60 | 6 | EO | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | | 30 | | | EO | 6 | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | Modelowanie inżynierskie | 60 | 6 | EO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | | 30 | | | EO | 6 | | | | | | | | |
| 6 | | Modelowanie zjawisk losowych | 60 | 6 | OO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | 30 | | | | OO | 6 | | | | | | | | | | | | | | | | |
| 7 | | Praktyka zawodowa | 90 | 5 | O | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 90 | O | 5 |
| 8 | | Tworzenie narzędzi analitycznych w R | 30 | 3 | O | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | | O | 3 | | | | | | | | |
| 1 | specjalność - Projektowanie i obsługa systemów analitycznych | Algorytmy grafowe | 60 | 6 | EO | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | 30 | | | | EO | 6 | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | Bazy danych w aplikacjach internetowych 1 | 75 | 6 | OOO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | 15 | 30 | | | | OOO | 6 | | | | | | | | | | | | | | | | |
| 3 | | Bazy danych w aplikacjach internetowych 2 | 30 | 3 | O | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | | O | 3 | | | | | | | | |
| 4 | | Elastyczne systemy produkcyjne | 60 | 6 | EO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | 30 | | | | EO | 6 | | | | | | | | |
| 5 | | Inżynieria systemów informacyjnych | 60 | 6 | EO | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | 30 | | | | EO | 6 | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | | Podstawy zarządzania i bezpieczeństwa systemów baz danych | 45 | 5 | OO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 15 | | 30 | | | | OO | 5 | | | | | | | | | | | | | | | | |
| 7 | | Praktyka zawodowa | 90 | 5 | O | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 90 | O | 5 |
| 8 | | Programowanie aplikacji WEB | 60 | 6 | EO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | 30 | | | | EO | 6 | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Moduł przedmiotów obowiązkowych | 1725 | 148 | 19 E | 360 | 4 E | 30 | 390 | 4 E | 31 | 330 | 4 E | 28 | 240 | 2 E | 18 | 240 | 4 E | 19 | 105 | 1 E | 9 | 60 | 0 E | 13 |
| Specjalność - Modelowanie i analiza danych | 480 | 43 | 4 E | 0 | 0 E | 0 | 0 | 0 E | 0 | 0 | 0 E | 0 | 120 | 2 E | 12 | 120 | 0 E | 11 | 150 | 2 E | 15 | 90 | 0 E | 5 |
| Specjalność - Systemy eksploaracji danych | 480 | 43 | 4 E | 0 | 0 E | 0 | 0 | 0 E | 0 | 0 | 0 E | 0 | 120 | 2 E | 12 | 120 | 0 E | 11 | 150 | 2 E | 15 | 90 | 0 E | 5 |
| Praktyki | 90 | 5 | | | | | | | | | | | | | | | | | | | | | | |
| **Łącznie (specjalność - Modelowanie i analiza danych)** | **2205** | **191** | **23 E** | **360** | **4 E** | **30** | **390** | **4 E** | **31** | **330** | **4 E** | **28** | **360** | **4 E** | **30** | **360** | **4 E** | **30** | **255** | **3 E** | **24** | **150** | **0 E** | **18** |
| **Łącznie (specjalność - Systemy eksploracji danych)** | **2205** | **191** | **23 E** | **360** | **4 E** | **30** | **390** | **4 E** | **31** | **330** | **4 E** | **28** | **360** | **4 E** | **30** | **360** | **4 E** | **30** | **255** | **3 E** | **24** | **150** | **0 E** | **18** |

| | | |
|---|---|---|
| **Łącznie bez praktyk** | **2115** | **186** |

Przedmioty dodatkowe oferowane dla kierunku inżynieria danych

| LP. | | NAZWA PRZEDMIOTU | SEMESTR 1 | | | | | | | | SEMESTR 2 | | | | | | | | SEMESTR 3 | | | | | | | | SEMESTR 4 | | | | | | | | SEMESTR 5 | | | | | | | | SEMESTR 6 | | | | | | | | SEMESTR 7 | | | | | | | |
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| | | | Forma zajęć | | | | | | Forma zal | ECTS | Forma zajęć | | | | | | Forma zal | ECTS | Forma zajęć | | | | | | Forma zal | ECTS | Forma zajęć | | | | | | Forma zal | ECTS | Forma zajęć | | | | | | Forma zal | ECTS | Forma zajęć | | | | | | Forma zal | ECTS | Forma zajęć | | | | | | Forma zal | ECTS |
| | | | W | Ć | L | P | S | Pr | | | W | Ć | L | P | S | Pr | | | W | Ć | L | P | S | Pr | | | W | Ć | L | P | S | Pr | | | W | Ć | L | P | S | Pr | | | W | Ć | L | P | S | Pr | | | W | Ć | L | P | S | Pr | | |
| 1 | DODATKOWE | Algorytmy grafowe | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | 30 | | | | EO | 6 | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | Analiza modeli ekonometrycznych | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | 30 | | | | OO | 5 | | | | | | | | | | | | | | | | |
| 3 | | Badania operacyjne | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | 30 | | | | EO | 6 | | | | | | | | |
| 4 | | Bazy danych w aplikacjach internetowych 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | 15 | 30 | | | | OOO | 6 | | | | | | | | | | | | | | | | |
| 5 | | Bazy danych w aplikacjach internetowych 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | | O | 3 | | | | | | | | |
| 6 | | Elastyczne systemy produkcyjne | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | 30 | | | | EO | 6 | | | | | | | | |
| 7 | | Inżynieria systemów informacyjnych | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | 30 | | | | EO | 6 | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | | Matematyka finansowa | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | 30 | | | | EO | 6 | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | | Metody obliczeniowe w zagadnieniach inżynierskich | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | | 30 | | | EO | 6 | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | Modelowanie inżynierskie | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | | 30 | | | EO | 6 | | | | | | | | |
| 11 | | Modelowanie zjawisk losowych | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | 30 | | | | OO | 6 | | | | | | | | | | | | | | | | |
| 12 | | Podstawy zarządzania i bezpieczeństwa systemów baz danych | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 15 | | 30 | | | | OO | 5 | | | | | | | | | | | | | | | | |
| 13 | | Praktyka zawodowa | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 90 | O | 5 |
| 14 | | Programowanie aplikacji WEB | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | 30 | | | | EO | 6 | | | | | | | | |
| 15 | | Tworzenie narzędzi analitycznych w R | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | | O | 3 | | | | | | | | |
| 1 | TECHNICZNE | Metody eksploracji danych | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | 30 | | | | OO | 5 |
| 2 | | Podstawy uczenia maszynowego | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | 30 | | | | OO | 5 |
| 1 | SPOŁECZNE | Polszczyzna w praktyce | | | | | | | | | | | | | | | | | | 30 | | | | | O | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | Wstęp do pisania i redagowania prac dyplomowych | | | | | | | | | | | | | | | | | | 30 | | | | | O | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Zatwierdzono:

Uchwała Rady Wydziału MIiE z dnia 20.03.2019 r.