**PLAN STUDIÓW STACJONARNYCH**
Nazwa kierunku studiów: **MATEMATYKA - drugi stopień**
Forma studiów: **stacjonarne**

Rekrutacja w roku akademickim 2024/2025
czas trwania: 4 semestry

Uniwersytet Zielonogórski
WYDZIAŁ MATEMATYKI, INFORMATYKI I EKONOMETRII

| LP. | | NAZWA PRZEDMIOTU | Liczba godzin | ECTS | Forma zal | SEMESTR 1 | | | | | | | | SEMESTR 2 | | | | | | | | SEMESTR 3 | | | | | | | | SEMESTR 4 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 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 | | |
| 1 | Moduł przedmiotów obowiązkowych (ogólne, podstawowe i kierunkowe) | Język angielski 1 | 30 | 2 | O | | | 30 | | | | O | 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | Język angielski 2 | 30 | 2 | E | | | | | | | | | | | 30 | | | | E | 2 | | | | | | | | | | | | | | | | |
| 3 | | Analiza funkcjonalna | 60 | 6 | EO | | | | | | | | | 30 | 30 | | | | | EO | 6 | | | | | | | | | | | | | | | | |
| 4 | | Analiza rzeczywista i zespolona | 60 | 7 | EO | 30 | 30 | | | | | EO | 7 | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | Topologia | 60 | 7 | EO | 30 | 30 | | | | | EO | 7 | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | | Geometria różniczkowa | 60 | 7 | EO | 30 | 30 | | | | | EO | 7 | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | | Matematyka dyskretna i matematyczne podstawy informatyki | 60 | 7 | EO | 30 | 30 | | | | | EO | 7 | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | | Równania różniczkowe cząstkowe | 90 | 10 | EOO | | | | | | | | | | | | | | | | | | | | | | | | | 30 | 30 | 30 | | | | EOO | 10 |
| 9 | | Seminarium dyplomowe 1 | 30 | 3 | O | | | | | | | | | | | | | 30 | | O | 3 | | | | | | | | | | | | | | | | |
| 10 | | Seminarium dyplomowe 2 | 60 | 6 | O | | | | | | | | | | | | | | | | | | | | | 60 | | O | 6 | | | | | | | | |
| 11 | | Seminarium dyplomowe 3 | 60 | 9 | Z | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 60 | | Z | 9 |
| 1 | specjalność - Informatyka matematyczna | Analiza kombinatoryczna | 60 | 5 | OO | | | | | | | | | 30 | 30 | | | | | OO | 5 | | | | | | | | | | | | | | | | |
| 2 | | Hurtownie danych | 45 | 5 | OO | | | | | | | | | 15 | | 30 | | | | OO | 5 | | | | | | | | | | | | | | | | |
| 3 | | Laboratorium specjalistyczne | 30 | 3 | O | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | | | O | 3 |
| 4 | | Metody algorytmiczne | 45 | 6 | EO | | | | | | | | | | | | | | | | | 15 | | 30 | | | | EO | 6 | | | | | | | | |
| 5 | | Seminarium specjalistyczne 1 | 30 | 2 | O | | | | | | | | | | | | | 30 | | O | 2 | | | | | | | | | | | | | | | | |
| 6 | | Seminarium specjalistyczne 2 | 30 | 2 | O | | | | | | | | | | | | | | | | | | | | | 30 | | O | 2 | | | | | | | | |
| 7 | | Seminarium specjalistyczne 3 | 30 | 2 | Z | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | Z | 2 |
| 8 | | Wybrane zagadnienia z matematyki dyskretnej 1 | 60 | 7 | EO | | | | | | | | | 30 | 30 | | | | | EO | 7 | | | | | | | | | | | | | | | | |
| 9 | | Wybrane zagadnienia z matematyki dyskretnej 2 | 60 | 7 | EO | | | | | | | | | | | | | | | | | 30 | 30 | | | | | EO | 7 | | | | | | | | |
| 10 | | Wykład monograficzny | 30 | 4 | E | | | | | | | | | | | | | | | | | 30 | | | | | | E | 4 | | | | | | | | |
| 1 | specjalność - Matematyka z informatyką w ekonomii | Badania operacyjne | 45 | 6 | EO | | | | | | | | | | | | | | | | | 15 | | 30 | | | | EO | 6 | | | | | | | | |
| 2 | | Ekonometria | 90 | 8 | OOO | | | | | | | | | | | | | | | | | 30 | 30 | 30 | | | | OOO | 8 | | | | | | | | |
| 3 | | Ekonomia matematyczna 2 | 60 | 7 | EO | | | | | | | | | 30 | 30 | | | | | EO | 7 | | | | | | | | | | | | | | | | |
| 4 | | Programowanie matematyczne | 90 | 10 | EOO | | | | | | | | | 30 | 30 | 30 | | | | EOO | 10 | | | | | | | | | | | | | | | | |
| 5 | | Seminarium specjalistyczne 1 | 30 | 2 | O | | | | | | | | | | | | | 30 | | O | 2 | | | | | | | | | | | | | | | | |
| 6 | | Seminarium specjalistyczne 2 | 30 | 2 | O | | | | | | | | | | | | | | | | | | | | | 30 | | O | 2 | | | | | | | | |
| 7 | | Seminarium specjalistyczne 3 | 30 | 2 | Z | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | Z | 2 |
| 8 | | Teoria gier w ekonomii | 45 | 6 | EO | | | | | | | | | | | | | | | | | 30 | 15 | | | | | EO | 6 | | | | | | | | |
| 1 | specjalność - Matematyka z informatyką w finansach i ubezpieczeniach | Inżynieria finansowa | 60 | 8 | EOO | | | | | | | | | | | | | | | | | 30 | 15 | 15 | | | | EOO | 8 | | | | | | | | |
| 2 | | Metody aktuarialne | 60 | 7 | EO | | | | | | | | | 30 | 30 | | | | | EO | 7 | | | | | | | | | | | | | | | | |
| 3 | | Procesy stochastyczne 1 | 60 | 7 | EO | | | | | | | | | 30 | 30 | | | | | EO | 7 | | | | | | | | | | | | | | | | |
| 4 | | Procesy stochastyczne 2 | 60 | 7 | EO | | | | | | | | | | | | | | | | | 30 | 30 | | | | | EO | 7 | | | | | | | | |
| 5 | | Seminarium specjalistyczne 1 | 30 | 2 | O | | | | | | | | | | | | | 30 | | O | 2 | | | | | | | | | | | | | | | | |
| 6 | | Seminarium specjalistyczne 2 | 30 | 2 | O | | | | | | | | | | | | | | | | | | | | | 30 | | O | 2 | | | | | | | | |
| 7 | | Seminarium specjalistyczne 3 | 30 | 2 | Z | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | Z | 2 |
| 8 | | Szeregi czasowe | 90 | 8 | OOO | | | | | | | | | | | | | | | | | | | | | | | | | 30 | 30 | 30 | | | | OOO | 8 |
| 1 | specjalność - Modelowanie matematyczne | Jakościowa teoria równań różniczkowych | 60 | 8 | EOO | | | | | | | | | | | | | | | | | 30 | 15 | 15 | | | | EOO | 8 | | | | | | | | |
| 2 | | Procesy stochastyczne 1 | 60 | 7 | EO | | | | | | | | | 30 | 30 | | | | | EO | 7 | | | | | | | | | | | | | | | | |
| 3 | | Seminarium specjalistyczne 1 | 30 | 2 | O | | | | | | | | | | | | | 30 | | O | 2 | | | | | | | | | | | | | | | | |
| 4 | | Seminarium specjalistyczne 2 | 30 | 2 | O | | | | | | | | | | | | | | | | | | | | | 30 | | O | 2 | | | | | | | | |
| 5 | | Seminarium specjalistyczne 3 | 30 | 2 | Z | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | Z | 2 |
| 6 | | Teoria sterowania 1 | 60 | 7 | EO | | | | | | | | | 30 | 30 | | | | | EO | 7 | | | | | | | | | | | | | | | | |
| 7 | | Teoria sterowania 2 | 60 | 7 | EO | | | | | | | | | | | | | | | | | 30 | 30 | | | | | EO | 7 | | | | | | | | |
| 8 | | Wybrane zagadnienia modelowania matematycznego | 90 | 8 | OOO | | | | | | | | | | | | | | | | | 30 | 30 | 30 | | | | OOO | 8 | | | | | | | | |
| 1 | specjalność - Nauczycielska | Dydaktyka matematyki 3 | 30 | 2 | O | | | | | | | | | | 30 | | | | | O | 2 | | | | | | | | | | | | | | | | |
| 2 | | Dydaktyka matematyki 4 | 30 | 2 | O | | | | | | | | | | | | | | | | | | 30 | | | | | O | 2 | | | | | | | | |
| 3 | | Historia matematyki | 45 | 4 | OO | | | | | | | | | | | | | | | | | | | | | | | | | 30 | 15 | | | | | OO | 4 |
| 4 | | Komputerowe wspomaganie nauczania matematyki | 30 | 5 | O | | | | | | | | | | | | | | | | | | | 30 | | | | O | 5 | | | | | | | | |
| 5 | | Metodyka rozwiązywania zadań matematycznych 3 | 45 | 4 | O | | | | | | | | | | 45 | | | | | O | 4 | | | | | | | | | | | | | | | | |
| 6 | | Metodyka rozwiązywania zadań matematycznych 4 | 45 | 4 | O | | | | | | | | | | | | | | | | | | 45 | | | | | O | 4 | | | | | | | | |
| 7 | | Pedagogika 2 | 30 | 2 | O | | | | | | | | | | 30 | | | | | O | 2 | | | | | | | | | | | | | | | | |
| 8 | | Pracownia matematyczna 2 | 30 | 5 | O | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | | | | O | 5 |
| 9 | | Praktyka nauczycielska 3 | 60 | 3 | O | | | | | | | | | | | | | | 60 | O | 3 | | | | | | | | | | | | | | | | |
| 10 | | Praktyka śródroczna 3 | 30 | 2 | O | | | | | | | | | | | | | | 30 | O | 2 | | | | | | | | | | | | | | | | |
| 11 | | Psychologia 2 | 30 | 2 | O | | | | | | | | | | 30 | | | | | O | 2 | | | | | | | | | | | | | | | | |
| 12 | | Seminarium specjalistyczne 1 | 30 | 2 | O | | | | | | | | | | | | | 30 | | O | 2 | | | | | | | | | | | | | | | | |
| 13 | | Seminarium specjalistyczne 2 | 30 | 2 | O | | | | | | | | | | | | | | | | | | | | | 30 | | O | 2 | | | | | | | | |
| 14 | | Seminarium specjalistyczne 3 | 30 | 2 | Z | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | Z | 2 |
| 15 | | Śródroczna praktyka wychowawcza 2 | 30 | 2 | O | | | | | | | | | | | | | | 30 | O | 2 | | | | | | | | | | | | | | | | |

| | | | | SEMESTR 1 | | | SEMESTR 2 | | | SEMESTR 3 | | | SEMESTR 4 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Moduł przedmiotów obowiązkowych | 600 | 66 | 7 E | 270 | 4 E | 30 | 120 | 2 E | 11 | 60 | 0 E | 6 | 150 | 1 E | 19 |
| specjalność - Informatyka matematyczna | 420 | 43 | 4 E | 0 | 0 E | 0 | 195 | 1 E | 19 | 165 | 3 E | 19 | 60 | 0 E | 5 |
| specjalność - Matematyka z informatyką w ekonomii | 420 | 43 | 4 E | 0 | 0 E | 0 | 180 | 2 E | 19 | 210 | 2 E | 22 | 30 | 0 E | 2 |
| specjalność - Matematyka z informatyką w finansach i ubezpieczeniach | 420 | 43 | 4 E | 0 | 0 E | 0 | 150 | 2 E | 16 | 150 | 2 E | 17 | 120 | 0 E | 10 |
| specjalność - Modelowanie matematyczne | 420 | 43 | 4 E | 0 | 0 E | 0 | 150 | 2 E | 16 | 240 | 2 E | 25 | 30 | 0 E | 2 |
| specjalność - Nauczycielska | 525 | 43 | 0 E | 0 | 0 E | 0 | 285 | 0 E | 19 | 135 | 0 E | 13 | 105 | 0 E | 11 |
| Praktyki (tylko specjalność Nauczycielska) | 120 | 7 | | | | | | | | | | | | | |
| **Łącznie (specjalność - Informatyka matematyczna)** | **1020** | **109** | **11 E** | **270** | **4 E** | **30** | **315** | **3 E** | **30** | **225** | **3 E** | **25** | **210** | **1 E** | **24** |
| **Łącznie (specjalność - Matematyka z informatyką w ekonomii)** | **1020** | **109** | **11 E** | **270** | **4 E** | **30** | **300** | **4 E** | **30** | **270** | **2 E** | **28** | **180** | **1 E** | **21** |
| **Łącznie (specjalność - Matematyka z informatyką w finansach i ubezpieczeniach)** | **1020** | **109** | **11 E** | **270** | **4 E** | **30** | **270** | **4 E** | **27** | **210** | **2 E** | **23** | **270** | **1 E** | **29** |
| **Łącznie (specjalność - Modelowanie matematyczne)** | **1020** | **109** | **11 E** | **270** | **4 E** | **30** | **270** | **4 E** | **27** | **300** | **2 E** | **31** | **180** | **1 E** | **21** |
| **Łącznie (specjalność - Nauczycielska)** | **1125** | **109** | **7 E** | **270** | **4 E** | **30** | **405** | **2 E** | **30** | **195** | **0 E** | **19** | **255** | **1 E** | **30** |

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|---|---|---|
| **Łącznie bez praktyk** | **1020** | **109** |
| **Łącznie bez praktyk (specjalność - Nauczycielska)** | **1005** | **102** |

Przedmioty dodatkowe oferowane dla kierunku matematyka

| LP. | | NAZWA PRZEDMIOTU | SEMESTR 1 | | | | | | | | SEMESTR 2 | | | | | | | | SEMESTR 3 | | | | | | | | SEMESTR 4 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 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 | | |
| 1 | Dodatkowe | Analiza kombinatoryczna | | | | | | | | | 30 | 30 | | | | | OO | 5 | | | | | | | | | 30 | 30 | | | | | OO | 5 |
| 2 | | Aplikacje WWW | | | | | | | | | 30 | | 30 | | | | OO | 4 | | | | | | | | | 30 | | 30 | | | | OO | 4 |
| 3 | | Badania operacyjne | | | | | | | | | | | | | | | | | 15 | | 30 | | | | EO | 6 | | | | | | | | |
| 4 | | Ekonometria | | | | | | | | | | | | | | | | | 30 | 30 | 30 | | | | OOO | 8 | | | | | | | | |
| 5 | | Ekonomia matematyczna 2 | | | | | | | | | 30 | 30 | | | | | EO | 7 | | | | | | | | | 30 | 30 | | | | | EO | 7 |
| 6 | | Historia matematyki | | | | | | | | | | | | | | | | | | | | | | | | | 30 | 15 | | | | | OO | 4 |
| 7 | | Hurtownie danych | | | | | | | | | 15 | | 30 | | | | OO | 5 | | | | | | | | | 15 | | 30 | | | | OO | 5 |
| 8 | | Inżynieria finansowa | | | | | | | | | | | | | | | | | 30 | 15 | 15 | | | | EOO | 8 | | | | | | | | |
| 9 | | Jakościowa teoria równań różniczkowych | | | | | | | | | | | | | | | | | 30 | 15 | 15 | | | | EOO | 8 | | | | | | | | |
| 10 | | Komputerowe przetwarzanie obrazów | | | | | | | | | | | | | | | | | 15 | | | 30 | | | OO | 4 | | | | | | | | |
| 11 | | Laboratorium specjalistyczne | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | | | O | 3 |
| 12 | | LaTeX | | | | | | | | | | | 30 | | | | O | 2 | | | | | | | | | | | | | | | | |
| 13 | | Metody aktuarialne | | | | | | | | | 30 | 30 | | | | | EO | 7 | | | | | | | | | 30 | 30 | | | | | EO | 7 |
| 14 | | Metody algorytmiczne | | | | | | | | | | | | | | | | | 15 | | 30 | | | | EO | 6 | | | | | | | | |
| 15 | | Metody numeryczne 2 | | | | | | | | | | | | | | | | | 30 | 30 | 30 | | | | EOO | 10 | | | | | | | | |
| 16 | | Modelowanie matematyczne 1 | | | | | | | | | | | | | | | | | 30 | | 30 | | | | EO | 7 | | | | | | | | |
| 17 | | Modelowanie matematyczne 2 | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | 30 | | | | EO | 7 |
| 18 | | Modelowanie w finansach 2 | | | | | | | | | | | | | | | | | 30 | | 30 | | | | EO | 6 | | | | | | | | |
| 19 | | Pracownia matematyczna 2 | | | | | | | | | | 30 | | | | | O | 5 | | | | | | | | | | 30 | | | | | O | 5 |
| 20 | | Procesy stochastyczne 1 | | | | | | | | | 30 | 30 | | | | | EO | 7 | | | | | | | | | 30 | 30 | | | | | EO | 7 |
| 21 | | Procesy stochastyczne 2 | | | | | | | | | | | | | | | | | 30 | 30 | | | | | EO | 7 | | | | | | | | |
| 22 | | Programowanie komputerów kwantowych | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | 30 | | | | OO | 5 |
| 23 | | Programowanie matematyczne | | | | | | | | | 30 | 30 | 30 | | | | EOO | 10 | | | | | | | | | 30 | 30 | 30 | | | | EOO | 10 |
| 24 | | Seminarium specjalistyczne 1 | | | | | | | | | | | | | 30 | | O | 2 | | | | | | | | | | | | | | | | |
| 25 | | Seminarium specjalistyczne 2 | | | | | | | | | | | | | | | | | | | | | 30 | | O | 2 | | | | | | | | |
| 26 | | Seminarium specjalistyczne 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | Z | 2 |
| 27 | | Sieci komputerowe | | | | | | | | | 30 | | 30 | | | | EO | 5 | | | | | | | | | 30 | | 30 | | | | EO | 5 |
| 28 | | Szeregi czasowe | | | | | | | | | | | | | | | | | | | | | | | | | 30 | 30 | 30 | | | | OOO | 8 |
| 29 | | Teoria gier w ekonomii | | | | | | | | | | | | | | | | | 30 | 15 | | | | | EO | 6 | | | | | | | | |
| 30 | | Teoria sterowania 1 | | | | | | | | | 30 | 30 | | | | | EO | 7 | | | | | | | | | 30 | 30 | | | | | EO | 7 |
| 31 | | Teoria sterowania 2 | | | | | | | | | | | | | | | | | 30 | 30 | | | | | EO | 7 | | | | | | | | |
| 32 | | Wybrane zagadnienia modelowania matematycznego | | | | | | | | | | | | | | | | | 30 | 30 | 30 | | | | OOO | 8 | | | | | | | | |
| 33 | | Wybrane zagadnienia z matematyki dyskretnej 1 | | | | | | | | | 30 | 30 | | | | | EO | 7 | | | | | | | | | 30 | 30 | | | | | EO | 7 |
| 34 | | Wybrane zagadnienia z matematyki dyskretnej 2 | | | | | | | | | | | | | | | | | 30 | 30 | | | | | EO | 7 | | | | | | | | |
| 35 | | Wykład monograficzny | | | | | | | | | | | | | | | | | 30 | | | | | | E | 4 | | | | | | | | |
| 1 | Humanistyczne | Specjalistyczny język angielski | | | | | | | | | | | | | | | | | | 30 | | | | | O | 3 | | 30 | | | | | O | 3 |
| 2 | | Stylistyka praktyczna | | | | | | | | | | 30 | | | | | O | 3 | | | | | | | | | | 30 | | | | | O | 3 |
| 1 | Społeczne | Pedagogika 2 | | | | | | | | | | 30 | | | | | O | 2 | | | | | | | | | | 30 | | | | | O | 2 |
| 2 | | Psychologia 2 | | | | | | | | | | 30 | | | | | O | 2 | | | | | | | | | | 30 | | | | | O | 2 |

Rekomendowano:
Uchwała nr 16 Rady Dyscypliny Matematyka z dnia 08.03.2023

Pozytywna opinia Wydziałowej Rady ds. Kształcenia na WMIiE:
Uchwała nr 1 z dnia 09.03.2023