**Państwowa Wyższa Szkoła Zawodowa**
**im. Jana Amosa Komeńskiego**
**w Lesznie**

**Uchwała nr 38/2019**
**Senatu Państwowej Wyższej Szkoły Zawodowej**
**im. Jana Amosa Komeńskiego w Lesznie**
**z dnia 4 lipca 2019 r.**

**w sprawie przyjęcia programu studiów na kierunku: Mechatronika (studia stacjonarne) studia I stopnia o profilu praktycznym, dla rozpoczynających studia od roku akademickiego 2019/2020**

Senat Państwowej Wyższej Szkoły Zawodowej im. Jana Amosa Komeńskiego w Lesznie na podstawie art. 28 ust. 1 pkt 11 i ust. 2 ustawy z dnia 20 lipca 2018 r. – Prawo o szkolnictwie wyższym i nauce ( Dz. U. z 2018 r., poz. 1668 z późn. zm.), art. 227 ust. 3 ustawy z dnia 3 lipca 2018 r. Przepisy wprowadzające ustawę – Prawo o szkolnictwie wyższym i nauce (Dz. U. z 2018 r., poz. 1669) oraz § 36 ust. 2 pkt 4 Statutu Uczelni uchwala, co następuje :

§ 1

Wprowadza się w Państwowej Wyższej Szkole Zawodowej im. Jana Amosa Komeńskiego w Lesznie program studiów dla kierunku: **Mechatronika (studia stacjonarne) studia I stopnia o profilu praktycznym, dla rozpoczynających studia od roku akademickiego 2019/2020** – zgodnie z treścią załącznika do niniejszej uchwały.

§ 2

Wykonanie niniejszej uchwały powierza się Rektorowi.

§ 3

Uchwała wchodzi w życie z dniem podjęcia.

Przewodniczący Senatu
REKTOR
Pietrzak

prof. dr hab. Maciej Pietrzak

# PLAN STUDIÓW

**Państwowa Wyższa Szkoła Zawodowa**
**im. Jana Amosa Komeńskiego w Lesznie**

**Kierunek studiów:** MECHATRONIKA
**Obowiązuje od dnia:** 1.10.2019
**Studia:** STACJONARNE I stopnia
**Liczba semestrów** 7

| Lp | Przedmiot | Kod przedmiotu | WYBIERALNY | PODSTAWOWY | KOMP. JĘZYKOWE | HUM/SPOŁECZNY | PRAKTYCZNY | RAZEM GODZIN | Z TEGO W | Z TEGO C | Z TEGO L | Z TEGO P | ECTS | ECTS PRAKTYCZNE | Semestr 1 W | Semestr 1 C | Semestr 1 L | Semestr 1 P | Semestr 1 ECTS | Semestr 1 E/ZO/Z | Semestr 2 W | Semestr 2 C | Semestr 2 L | Semestr 2 P | Semestr 2 ECTS | Semestr 2 E/ZO/Z | Semestr 3 W | Semestr 3 C | Semestr 3 L | Semestr 3 P | Semestr 3 ECTS | Semestr 3 E/ZO/Z | Semestr 4 W | Semestr 4 C | Semestr 4 L | Semestr 4 P | Semestr 4 ECTS | Semestr 4 E/ZO/Z | Semestr 5 W | Semestr 5 C | Semestr 5 L | Semestr 5 P | Semestr 5 ECTS | Semestr 5 E/ZO/Z | Semestr 6 W | Semestr 6 C | Semestr 6 L | Semestr 6 P | Semestr 6 ECTS | Semestr 6 E/ZO/Z | Semestr 7 W | Semestr 7 C | Semestr 7 L | Semestr 7 P | Semestr 7 ECTS | Semestr 7 E/ZO/Z |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PRZEDMIOTY WSPÓLNE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Język angielski / Konwersatoria w języku specjalistycznym | IPOEI-1-JA | N | N | T | N | T | 90 | 0 | 90 | 0 | 0 | 5 | 1 | | | | | | | | 30 | | | 2 | ZO | | 30 | | | 2 | ZO | | 30 | | | 1 | ZO | | | | | | | | | | | | | | | | | | | | |
| 2 | Wychowanie fizyczne | PWSZ-1-WF | N | N | N | N | N | 60 | 0 | 60 | 0 | 0 | 0 | | | 30 | | | | Z | | 30 | | | | Z | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | Podstawy kultury akademickiej | PWSZ-1-PA | N | N | N | N | N | 15 | 15 | 0 | 0 | 0 | 0 | | 15 | | | | | Z | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | BHP oraz ergonomia | IPO-1-BHPzE | N | N | N | N | T | 30 | 15 | 0 | 0 | 15 | 2 | 1 | | | | | | | 15 | | | 15 | 2 | ZO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | Ochrona własności intelektualnej | IPO-1-OWI | N | N | N | N | N | 15 | 15 | 0 | 0 | 0 | 1 | | 15 | | | | 1 | ZO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | Podstawy ekonomii i zarządzania | IPOEI-1-PEiZ | N | N | N | T | N | 45 | 30 | 15 | 0 | 0 | 3 | | 30 | 15 | | | 3 | ZO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | Komunikacja społeczna | IPOEI-1-KS-MR | N | N | N | T | N | 15 | 0 | 15 | 0 | 0 | 1 | | | 15 | | | 1 | ZO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | Etyka zawodowa | IPOEI-1-EZ-MR | N | N | N | T | N | 15 | 0 | 15 | 0 | 0 | 1 | | | | | | | | | 15 | | | 1 | ZO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | Matematyka 1 | IPOEI-1-MAT1-MR | N | T | N | N | N | 45 | 0 | 45 | 0 | 0 | 3 | | | 45 | | | 3 | ZO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | Matematyka 2 | IPOEI-1-MAT2-MR | N | T | N | N | N | 45 | 0 | 45 | 0 | 0 | 3 | | | | | | | | | 45 | | | 3 | ZO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | Matematyka 3 | IPOEI-1-MAT3-MR | N | T | N | N | N | 45 | 0 | 45 | 0 | 0 | 3 | | | | | | | | | | | | | | | 45 | | | 3 | ZO | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | Matematyka praktyczna w mechatronice 1 | IPOEI-1-MATP1-MR | N | T | N | N | N | 15 | 15 | 0 | 0 | 0 | 1 | | 15 | | | | 1 | E | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | Matematyka praktyczna w mechatronice 2 | IPOEI-1-MATP2-MR | N | T | N | N | N | 15 | 15 | 0 | 0 | 0 | 1 | | | | | | | | 15 | | | | 1 | E | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | Matematyka praktyczna w mechatronice 3 | IPOEI-1-MATP3-MR | N | T | N | N | N | 15 | 15 | 0 | 0 | 0 | 1 | | | | | | | | | | | | | | 15 | | | | 1 | E | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | Fizyka | IPOEI-1-FIZ-MR | N | T | N | N | T | 60 | 30 | 15 | 15 | 0 | 5 | 2 | 30 | 15 | 15 | | 5 | E | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | Informatyka w mechatronice | IPOEI-1-IM-MR | N | T | N | N | T | 45 | 15 | 0 | 30 | 0 | 3 | 2 | 15 | | 30 | | 3 | ZO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | Geometria i grafika inżynierska | IPOEI-1-GIGI-MR | N | T | N | N | T | 45 | 15 | 15 | 0 | 15 | 3 | 2 | 15 | 15 | | 15 | 3 | E | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | Komputerowe wspomaganie projektowania KWP | IPOEI-1-KWP-MR | N | T | N | N | T | 60 | 15 | 0 | 30 | 15 | 5 | 3 | | | | | | | 15 | | 30 | 15 | 5 | E | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | Podstawy programowania | IPOEI-1-PPROG-MR | N | T | N | N | T | 45 | 15 | 0 | 30 | 0 | 3 | 2 | | | | | | | 15 | | 30 | | 3 | ZO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 | Mechanika 1 | IPOEI-1-MECH1-MR | N | T | N | N | T | 45 | 15 | 15 | 0 | 15 | 3 | 2 | 15 | 15 | | 15 | 3 | ZO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | Mechanika 2 | IPOEI-1-MECH2-MR | N | T | N | N | T | 30 | 15 | 15 | 0 | 0 | 2 | 1 | | | | | | | 15 | 15 | | | 2 | E | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 22 | Teoria obwodów 1 | IPOEI-1-TOB1-MR | N | T | N | N | T | 30 | 15 | 15 | 0 | 0 | 2 | 1 | | | | | | | | | | | | | 15 | 15 | | | 2 | ZO | | | | | | | | | | | | | | | | | | | | | | | | | |
| 23 | Teoria obwodów 2 | IPOEI-1-TOB2-MR | N | T | N | N | T | 30 | 15 | 0 | 15 | 0 | 2 | 1 | | | | | | | | | | | | | | | | | | | 15 | | 15 | | 2 | E | | | | | | | | | | | | | | | | | | | |
| 24 | Technologia informacyjna | IPOEI-1-TINF-R | N | T | N | N | T | 30 | 15 | 0 | 15 | 0 | 2 | 1 | 15 | | 15 | | 2 | ZO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 | Przetworniki elektro-mechaniczne | IPOEI-1PELM-MR | N | T | N | N | T | 45 | 15 | 0 | 30 | 0 | 3 | 2 | | | | | | | | | | | | | 15 | | 30 | | 3 | ZO | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | Systemy mechatroniczne | IPOEI-1 SMA-MR | N | T | N | N | T | 30 | 15 | 0 | 15 | 0 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 15 | | 15 | | 2 | E | | | | | | | | | | | | | |
| 27 | Podstawy konstrukcji maszyn | IPOEI-1 PKM-MR | N | T | N | N | T | 60 | 30 | 15 | 0 | 15 | 4 | 2 | | | | | | | | | | | | | 30 | 15 | | 15 | 4 | E | | | | | | | | | | | | | | | | | | | | | | | | | |
| 28 | Podstawy elektroniki | IPOEI-1 PELN-MR | N | T | N | N | T | 60 | 30 | 0 | 30 | 0 | 4 | 2 | | | | | | | | | | | | | | | | | | | 30 | | 30 | | 4 | E | | | | | | | | | | | | | | | | | | | |
| 29 | Podstawy modelowania systemów mechatronicznych | IPOEI-1 PMSM-MR | N | T | N | N | T | 15 | 15 | 0 | 0 | 0 | 1 | | | | | | | | | | | | | | 15 | | | | 1 | ZO | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | Podstawy mechatroniki | IPOEI-1 PM-MR | N | T | N | N | T | 60 | 30 | 0 | 30 | 0 | 4 | 2 | | | | | | | | | | | | | | | | | | | 30 | | 30 | | 4 | E | | | | | | | | | | | | | | | | | | | |
| 31 | Metrologia i systemy pomiarowe 1 | IPOEI-1 MiSP1-MR | N | T | N | N | T | 45 | 30 | 0 | 15 | 0 | 3 | 1 | | | | | | | | | | | | | | | | | | | 30 | | 15 | | 3 | ZO | | | | | | | | | | | | | | | | | | | |
| 32 | Metrologia i systemy pomiarowe 2 | IPOEI-1 MiSP2-MR | N | T | N | N | T | 30 | 15 | 0 | 15 | 0 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 15 | | 15 | | 2 | E | | | | | | | | | | | | | |
| 33 | Techniki wytwarzania 1 | IPOEI-1 TW1-MR | N | T | N | N | T | 60 | 45 | 0 | 15 | 0 | 5 | 1 | 45 | | 15 | | 5 | E | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 34 | Techniki wytwarzania 2 | IPOEI-1 TW2-MR | N | T | N | N | T | 30 | 0 | 0 | 15 | 15 | 2 | 2 | | | | | | | | | | | | | | | 15 | 15 | 2 | E | | | | | | | | | | | | | | | | | | | | | | | | | |
| 35 | Podstawy elektrotechniki / Zastosowanie elektrotechniki w mechatronice | IPOEI-1 PEL-MR / IPOEI-1 ZEwM-MR | T | N | N | N | T | 60 | 30 | 15 | 15 | 0 | 5 | 2 | | | | | | | 30 | 15 | 15 | | 5 | ZO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 36 | Systemy informatyczne / Zintegrowane systemy informatyczne w mechatronice | IPOEI-1-SINF-MR / IPOEI-1 ZSIwM-MR | T | N | N | N | T | 45 | 15 | 0 | 30 | 0 | 3 | 2 | | | | | | | 15 | | 30 | | 3 | ZO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 37 | Programowanie obiektowe / Programowanie obiektowe w mechatronice | IPOEI-1 PROB-MR / IPOEI-1-POwM-MR | T | N | N | N | T | 45 | 15 | 0 | 30 | 0 | 3 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | 15 | | 30 | | 3 | ZO | | | | | | | | | | | | | |
| 38 | Wytrzymałość materiałów / Wytrzymałość materiałów w mechatronice | IPOEI-1 WMAT-MR / IPOEI-1 WMwM-MR | T | N | N | N | T | 75 | 30 | 0 | 30 | 15 | 5 | 3 | | | | | | | | | | | | | | | | | | | 30 | | 30 | 15 | 5 | E | | | | | | | | | | | | | | | | | | | |
| 39 | Podstawy automatyki / Automatyka w mechatronice | IPOEI-1-PA-MR / IPOEI-1-AwM-MR | T | N | N | N | T | 60 | 30 | 15 | 15 | 0 | 4 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | 30 | 15 | 15 | | 4 | E | | | | | | | | | | | | | |
| 40 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 41 | Podstawy robotyki / Mechatronika robotów | IPOEI-1 PRO-MR / IPOEI-1 MRO-MR | T | N | N | N | T | 30 | 15 | 0 | 15 | 0 | 2 | 1 | | | | | | | | | | | | | | | | | | | 15 | | 15 | | 2 | ZO | | | | | | | | | | | | | | | | | | | |
| 42 | Teoria sterowania / Podstawy sterowania w mechatronice | IPOEI-1 TS-MR / IPOEI-1 PSwM MR | T | N | N | N | T | 30 | 15 | 0 | 15 | 0 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 15 | | 15 | | 2 | ZO | | | | | | | | | | | | | |
| 43 | Cyfrowe przetwarzanie sygnałów / Przetwarzanie sygnałów cyfrowych w mechatronice | IPOEI-1 CPS MR / IPOEI-1 PSCwM-MR | T | N | N | N | T | 30 | 15 | 0 | 15 | 0 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 15 | | 15 | | 2 | E | | | | | | | | | | | | | |
| 44 | Programowanie mikrokontrolerów / Mikrokontrolery w mechatronice, programowanie | IPOEI-1 PuK-MR / IPOEI-1 uKwM-MR | T | N | N | N | T | 75 | 30 | 15 | 30 | 0 | 5 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | 15 | 30 | | 5 | E | | | | | |
| 45 | Sztuczna inteligencja | IPOEI-1 SzI-MR | N | N | N | N | T | 45 | 15 | 0 | 30 | 0 | 3 | 2 | | | | | | | | | | | | | 15 | | 30 | | 3 | E | | | | | | | | | | | | | | | | | | | | | | | | | |
| 46 | Podstawy projektowania układów mechatronicznych | IPOEI-1 MUP-MR | N | N | N | N | T | 30 | 0 | 0 | 0 | 30 | 2 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | 2 | ZO | | | | | | | |
| 47 | Dynamika maszyn | IPOEI-1 DM-MR | N | N | N | N | T | 30 | 15 | 15 | 0 | 0 | 2 | 1 | | | | | | | | | | | | | | | | | | | 15 | 15 | | | 2 | ZO | | | | | | | | | | | | | | | | | | | |
| 48 | PWK1 *) | IPOEI-1 PWK1-MR | T | N | N | N | T | 30 | 15 | 15 | 0 | 0 | 2 | 1 | | | | | | | 15 | 15 | | | 2 | ZO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 49 | PWK2 *) | IPOEI-1 PWK2-MR | T | N | N | N | T | 30 | 15 | 15 | 0 | 0 | 2 | 1 | | | | | | | | | | | | | 15 | 15 | | | 2 | ZO | | | | | | | | | | | | | | | | | | | | | | | | | |
| 61 | Seminarium dyplomowe 1 | IPOEI-1-SD1-MR | N | N | N | N | N | 15 | 0 | 15 | 0 | 0 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | 15 | | | | 1 | ZO | | | | | | | | | | | |
| 62 | Seminarium dyplomowe 2 | IPOEI-1-SD2-MR | N | N | N | N | N | 30 | 0 | 30 | 0 | 0 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | | 2 | ZO |
| 63 | Przedmiot ogólnouczelniany do wyboru | PWSZ-1-OU | T | | | | | 15 | 15 | 0 | 0 | 0 | 1 | | | | | | | | 15 | | | | 1 | ZO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 64 | Praca dyplomowa | IPOEI-1-PD-MR | | | | | T | 240 | 0 | 0 | 0 | 240 | 8 | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 240 | 8 | Z |
| 65 | Praktyki ** | IPOEI-1-PRAK-MR | | | | | T | 960 | 0 | 0 | 960 | 0 | 35 | 35 | | | | | | | | | | | | | | | 160 | | 7 | ZO | | | 240 | | 7 | ZO | | | 160 | | 7 | ZO | | | 240 | | 7 | ZO | | | 160 | | 7 | ZO |
| | RAZEM PRZEDMIOTY WSPÓLNE | | | | | | | 1995 | 780 | 555 | 525 | 135 | 174 | 100 | 210 | 150 | 75 | 30 | 30 | 4 | 150 | 165 | 105 | 30 | 30 | 3 | 120 | 120 | 75 | 30 | 30 | 4 | 165 | 45 | 135 | 15 | 30 | 4 | 75 | 15 | 60 | 0 | 17 | 3 | 60 | 30 | 75 | 30 | 20 | 2 | 0 | 30 | 0 | 0 | 17 | 0 |
| | | | | | | | | | | | | | | | 465 | | | | | | 450 | | | | | | 345 | | | | | | 360 | | | | | | 150 | | | | | | 195 | | | | | | 30 | | | | |

ŚCIEŻKA DYPLOMOWANIA: Nowoczesne konstrukcje i technologie w mechatronice

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | CAD w mechatronice | IPOEI-1-CWM-MR-NKTwM | T | N | N | N | T | 30 | 15 | 0 | 15 | 0 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 15 | | 15 | | 2 | ZO | | | | | | | | | | | | |
| 2 | Robotyzacja | IPOEI-1-ROB-MR-NKTwM | T | N | N | N | T | 30 | 15 | 0 | 15 | 0 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 15 | | 15 | | 2 | E | | | | | | |
| 3 | Szybkie prototypowanie układów mechatronichnych | IPOEI-1-SPUM-MR-NKTwM | T | N | N | N | T | 45 | 15 | 0 | 30 | 0 | 3 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 15 | | 30 | | 3 | ZO |
| 4 | Badania doświadczalne urządzeń mechatronicznych | IPOEI-1-BDUM-MR-NKTwM | T | N | N | N | T | 15 | 15 | 0 | 0 | 0 | 1 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 15 | | | | 1 | ZO | | | | | | |
| 5 | Wibroakustyka układów mechatronicznych | IPOEI-1-WUM-MR-NKTwM | T | N | N | N | T | 15 | 15 | 0 | 0 | 0 | 1 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 15 | | | | 1 | ZO |
| 6 | Systemy CAM z elementami programowania CNC | IPOEI-1-SCPR-MR-NKTwM | T | N | N | N | T | 45 | 15 | 0 | 30 | 0 | 3 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | 15 | | 30 | | 3 | ZO | | | | | | | | | | | | |
| 7 | Systemy wizyjne, rozpoznawanie obrazów | IPOEI-1-SWRO-MR-NKTwM | T | N | N | N | T | 45 | 15 | 0 | 30 | 0 | 3 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 15 | | 30 | | 3 | ZO | | | | | | |
| 8 | Projekt przejściowy | IPOEI-1-PP-MR-NKTwM | T | N | N | N | T | 30 | 0 | 0 | 0 | 30 | 2 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | 2 | ZO | | | | | | |
| 9 | Nowe technologie | IPOEI-1-NT-MR-NKTwM | T | N | N | N | T | 60 | 30 | 0 | 15 | 15 | 4 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | 15 | 15 | 4 | E |
| 10 | Mikrokontrolery i sterowanie cyfrowe | IPOEI-1-uKiSC-MR-NKTwM | T | N | N | N | T | 30 | 15 | 0 | 0 | 15 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 15 | | | 15 | 2 | ZO | | | | | | | | | | | | |
| 11 | Zasilanie i zabezpieczanie urządzeń mechatronicznych / Modelowanie i wizualizacja procesow technologicznych | IPOEI-1-ZIZUM-MR-NKTwM / IPOEI-1-MWPT-MR-NKTwM | T | N | N | N | T | 45 | 15 | 0 | 30 | 0 | 3 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | 15 | | 30 | | 3 | ZO | | | | | | | | | | | | |
| 12 | Diagnostyka urządzeń elektrycznych w mechatronice / Urządzenia elektryczne w mechatronice | IPOEI-1-DUEwM-MR-NKTwM / IPOEI-1-UEwM-MR-NKTwM | T | N | N | N | T | 45 | 15 | 0 | 30 | 0 | 3 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | 15 | | 30 | | 3 | ZO | | | | | | | | | | | | |
| 13 | Sterowniki PLC/ Zastosowanie sterowników PLC | IPOEI-1-SPLC-MR-NKTwM / IPOEI-1-ZSPLC-MR-NKTwM | T | N | N | N | T | 45 | 15 | 0 | 30 | 0 | 3 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 15 | | 30 | | 3 | ZO |
| 14 | Przedmiot zawodowy w języku angielskim 1 ***) | IPOEI-1-PzJA1-MR-NKTwM | T | N | T | N | T | 30 | 0 | 30 | 0 | 0 | 2 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | | 2 | ZO | | | | | | |
| 15 | Przedmiot zawodowy w języku angielskim 2 ***) | IPOEI-1-PzJA2-MR-NKTwM | T | N | T | N | T | 30 | 0 | 30 | 0 | 0 | 2 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 30 | | | 2 | ZO |
| 16 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 22 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 23 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 24 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 27 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 28 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 29 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RAZEM PRZEDMIOTY ŚCIEŻKI DYPLOMOWANIA | | | | | | | | 540 | 195 | 60 | 225 | 60 | 36 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 75 | 0 | 105 | 15 | 13 | 0 | 45 | 30 | 45 | 30 | 10 | 1 | 75 | 30 | 75 | 15 | 13 | 1 |
| | | | | | | | | | | | | | | | 0 | | | | | | 0 | | | | | | 0 | | | | | | 0 | | | | | | 195 | | | | | | 150 | | | | | | 195 | | | | | |
| RAZEM PRZEDMIOTY WSPÓLNE I ŚCIEŻKI DYPLOMOWANIA | | | | | | | | 2535 | 975 | 615 | 750 | 195 | 210 | 123 | 210 | 150 | 75 | 30 | 30 | 4 | 150 | 165 | 105 | 30 | 30 | 3 | 120 | 120 | 75 | 30 | 30 | 4 | 165 | 45 | 135 | 15 | 30 | 4 | 150 | 15 | 165 | 15 | 30 | 3 | 105 | 60 | 120 | 60 | 30 | 3 | 75 | 60 | 75 | 15 | 30 | 1 |
| | | | | | | | | | | | | | | | 465 | | | | | | 450 | | | | | | 345 | | | | | | 360 | | | | | | 345 | | | | | | 345 | | | | | | 225 | | | | | |

**SPEŁNIENIE WARUNKÓW:**

| | |
|---|---|
| PRZEDMIOTY HUMANISTYCZNE MIN 5 ECTS | TAK |
| MINIMUM 30% PKT ECTS DO WYBORU | TAK |
| MINIMUM 50% PUNKTÓW ECTS ZAJĘĆ PRAKTYCZNYCH | TAK |
| MINIMUM 8PKT ECTS KOMPETENCJE JĘZYKOWE | TAK |
| 960 GODZIN PRAKTYKI, 35PKT ECTS | TAK |
| PRZYGOTOWANIE DO DYPLOMOWANIA 240 GODZIN, 8 ECTS | TAK |

**PUNKTY ECTS**

| | |
|---|---|
| NAUKI PODSTAWOWE KIERUNKU | 72 |
| MODUŁY DOSKONALĄCE KOMPETENCJE JĘZYKOWE | 9 |
| MODUŁY HUMANISTYCZNE / SPOŁECZNE | 5 |
| ZAJĘCIA O CHARAKTERZE PRAKTYCZNYM | 123 |
| ZAJĘĆ W BEZPOŚREDNIM KONTAKCIE Z PROWADZĄCYM | 160 |

* PWK1, PWK2 - przedmiot wybieralny kierunkowy ustalany corocznie przez Senat Uczelni

** Praktyki - istnieje możliwość odbycia praktyk dualnych wg Leszczyńskiego Modelu Praktyk Dulanych w ilość 1820h (sem.3 - 300h, sem.4 - 460h, sem.5 - 300h, sem.6- 460h, sem.7 - 300h); za każdy semestr student otrzymuje 7pkt ECTS (razem 35 pkt. ECTS); praktyki dualne kończą się egzaminem

*** Przedmiot zawodowy w języku angielskim ustalany corocznie przez Senat Uczelni

## ŚCIEŻKA DYPLOMOWANIA: Zastosowanie mechatroniki w Inżynierii Elektrycznej

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Komunikacja w sieciach teleinformatycznych | IPOEI-1-CWM-MR-MwIE | T | N | N | N | T | 75 | 30 | 0 | 45 | 0 | 5 | 3 |
| 2 | Podstawy optoelektroniki | IPOEI-1-POP-MR-MwIE | T | N | N | N | T | 30 | 15 | 0 | 15 | 0 | 2 | 1 |
| 3 | Metody polowe w projektowaniu mikronapędów | IPOEI-1-MPwPM-MR-MwIE | T | N | N | N | T | 30 | 15 | 0 | 15 | 0 | 2 | 1 |
| 4 | Transmisja w systemach mechatronicznych | IPOEI-1-TwSM-MR-MwIE | T | N | N | N | T | 30 | 15 | 0 | 15 | 0 | 2 | 1 |
| 5 | Przemysłowe systemy wizyjne | IPOEI-1-PSW-MR-MwIE | T | N | N | N | T | 30 | 15 | 0 | 15 | 0 | 2 | 1 |
| 6 | Sterowanie i programowanie robotów | IPOEI-1-SiPR-MR-MwIE | T | N | N | N | N | 15 | 15 | 0 | 0 | 0 | 1 | |
| 7 | Mikroprocesorowe układy sterowania w systemach mechatronicznych | IPOEI-1-MUSwSM-MR-MwIE | T | N | N | N | N | 15 | 15 | 0 | 0 | 0 | 1 | |
| 8 | Projekt przejściowy | IPOEI-1-PP-MR-MwIE | T | N | N | N | T | 45 | 0 | 0 | 0 | 45 | 3 | 3 |
| 9 | Komputerowe wspomaganie w mechatronice | IPOEI-1-KwM-MR-MwIE | T | N | N | N | T | 30 | 15 | 0 | 0 | 15 | 2 | 1 |
| 10 | Maszyny i napęd elektryczny | IPOEI-1-MiNE-MR-MwIE | T | N | N | N | T | 30 | 15 | 0 | 15 | 0 | 2 | 1 |
| 11 | Automatyka napędu elektrycznego | IPOEI-1-ANE-MR-MwIE | T | N | N | N | T | 45 | 15 | 15 | 15 | 0 | 3 | 2 |
| 12 | Zasilanie i zabezpieczanie urządzeń mechatronicznych /<br>Modelowanie i wizualizacja procesow technologicznych | IPOEI-1-ZIZUM-MR-MwIE /<br>IPOEI-1-MWPT-MR-MwIE | T | N | N | N | T | 45 | 15 | 0 | 30 | 0 | 3 | 2 |
| 13 | Diagnostyka urządzeń elektrycznych w mechatronice /<br>Urządzenia elektryczne w mechatronice | IPOEI-1-DUEwM-MR-MwIE /<br>IPOEI-1-UEwM-MR-MwIE | T | N | N | N | T | 30 | 15 | 0 | 15 | 0 | 2 | 1 |
| 14 | Przedmiot zawodowy w języku angielskim 1 ***) | IPOEI-1-PzJA1-MR-MwIE | T | N | T | N | T | 30 | 0 | 30 | 0 | 0 | 2 | 2 |
| 15 | Przedmiot zawodowy w języku angielskim 2 ***) | IPOEI-1-PzJA2-MR-MwIE | T | N | T | N | T | 30 | 0 | 30 | 0 | 0 | 2 | 2 |
| 16 | Mikrokontrolery i sterowanie cyfrowe w instalacjach elektrycznych | IPOEI-1-uKiSC-MR-MwIE | T | N | N | N | T | 30 | 15 | 0 | 0 | 15 | 2 | 1 |
| 17 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| 18 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| 19 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| 20 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| 21 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| 22 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| 23 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| 24 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| 25 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| 26 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| 27 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| 28 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| 29 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| 30 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| RAZEM PRZEDMIOTY ŚCIEŻKI DYPLOMOWANIA | | | | | | | | 540 | 210 | 75 | 180 | 75 | 36 | 22 |
| RAZEM PRZEDMIOTY WSPÓLNE I ŚCIEŻKI DYPLOMOWANIA | | | | | | | | 2535 | 990 | 630 | 705 | 210 | 210 | 122 |

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1–30 | | | | | | | | | | | | | | | | | | | | | | | | |
| RAZEM PRZEDMIOTY ŚCIEŻKI DYPLOMOWANIA | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0 | | | | | | 0 | | | | | | 0 | | | | | | 0 | | | | | |
| RAZEM PRZEDMIOTY WSPÓLNE I ŚCIEŻKI DYPLOMOWANIA | 210 | 150 | 75 | 30 | 30 | 4 | 150 | 165 | 105 | 30 | 30 | 3 | 120 | 120 | 75 | 30 | 30 | 4 | 165 | 45 | 135 | 15 | 30 | 4 |
| | 465 | | | | | | 450 | | | | | | 345 | | | | | | 360 | | | | | |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 30 | | 45 | | 5 | E | | | | | | | | | | | | |
| 2 | 15 | | 15 | | 2 | ZO | | | | | | | | | | | | |
| 3 | | | | | | | 15 | | 15 | | 2 | E | | | | | | |
| 4 | | | | | | | | | | | | | 15 | | 15 | | 2 | ZO |
| 5 | | | | | | | | | | | | | 15 | | 15 | | 2 | E |
| 6 | 15 | | | | 1 | ZO | | | | | | | | | | | | |
| 7 | | | | | | | 15 | | | | 1 | ZO | | | | | | |
| 8 | | | | | | | | | | 45 | 3 | ZO | | | | | | |
| 9 | | | | | | | | | | | | | 15 | | | 15 | 2 | ZO |
| 10 | 15 | | 15 | | 2 | ZO | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | 15 | 15 | 15 | | 3 | ZO |
| 12 | 15 | | 30 | | 3 | ZO | | | | | | | | | | | | |
| 13 | | | | | | | 15 | | 15 | | 2 | ZO | | | | | | |
| 14 | | | | | | | | 30 | | | 2 | ZO | | | | | | |
| 15 | | | | | | | | | | | | | | 30 | | | 2 | ZO |
| 16 | | | | | | | | | | | | | 15 | | | 15 | 2 | ZO |
| 17 | | | | | | | | | | | | | | | | | | |
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| 27 | | | | | | | | | | | | | | | | | | |
| 28 | | | | | | | | | | | | | | | | | | |
| 29 | | | | | | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | | | | | | |
| RAZEM PRZEDMIOTY ŚCIEŻKI DYPLOMOWANIA | 90 | 0 | 105 | 0 | 13 | 1 | 45 | 30 | 30 | 45 | 10 | 1 | 75 | 45 | 45 | 30 | 13 | 1 |
| | 195 | | | | | | 150 | | | | | | 195 | | | | | |
| RAZEM PRZEDMIOTY WSPÓLNE I ŚCIEŻKI DYPLOMOWANIA | 165 | 15 | 165 | 0 | 30 | 4 | 105 | 60 | 105 | 75 | 30 | 3 | 75 | 75 | 45 | 30 | 30 | 1 |
| | 345 | | | | | | 345 | | | | | | 225 | | | | | |

**SPEŁNIENIE WARUNKÓW:**

| | |
|---|---|
| PRZEDMIOTY HUMANISTYCZNE MIN 5 ECTS | TAK |
| MINIMUM 30% PKT ECTS DO WYBORU | TAK |
| MINIMUM 50% PUNKTÓW ECTS ZAJĘĆ PRAKTYCZNYCH | TAK |
| MINIMUM 8PKT ECTS KOMPETENCJE JĘZYKOWE | TAK |
| 960 GODZIN PRAKTYKI, 35PKT ECTS | TAK |
| PRZYGOTOWANIE DO DYPLOMOWANIA 240 GODZIN, 8 ECTS | TAK |

**PUNKTY ECTS**

| | |
|---|---|
| NAUKI PODSTAWOWE KIERUNKU | 72 |
| MODUŁY DOSKONALĄCE KOMPETENCJE JĘZYKOWE | 9 |
| MODUŁY HUMANISTYCZNE / SPOŁECZNE | 5 |
| ZAJĘCIA O CHARAKTERZE PRAKTYCZNYM | 122 |
| ZAJĘĆ W BEZPOŚREDNIM KONTAKCIE Z PROWADZĄCYM | 160 |

* PWK1, PWK2 - przedmiot wybieralny kierunkowy ustalany corocznie przez Senat Uczelni

** Praktyki - istnieje możliwość odbycia praktyk dualnych wg Leszczyńskiego Modelu Praktyk Dulanych w ilość 1820h (sem.3 - 300h, sem.4 - 460h, sem.5 - 300h, sem.6- 460h, sem.7 - 300h); za każdy semestr student otrzymuje 7pkt ECTS (razem 35 pkt. ECTS); praktyki dualne kończą się egzaminem

*** Przedmiot zawodowy w języku angielskim ustalany corocznie przez Senat Uczelni

PRZEWODNICZĄCY
SAMORZĄDU STUDENCKIEGO
Państwowej Wyższej Szkoły Zawodowej
im. Jana Amosa Komeńskiego w Lesznie
mgr Patryk Józefowicz

DYREKTOR
Instytutu Politechnicznego
dr inż. Halina Pacha-Gołębiowska

REKTOR
prof. dr hab. Maciej Pietrzak