*załącznik nr 6 do uchwały Senatu 80/XVIII/15 z dn. 22 maja 2015 r.*

**Metalurgia - profil praktyczny**

**Specjalność: Zaawansowane technologie wytwarzania  Studia niestacjonarne**

**W** - wykład  **C**-ćwiczenia  **L**-laboratorium  **P**-projekt  **P**-projekt

| Moduł ogólny | | | | | | | I semestr | | | | | II semestr | | | | | III semestr | | | | | IV semestr | | | | | V semestr | | | | | VI semestr | | | | | VII semestr | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| przedmioty: | L.godz. | ECTS | W | C | L | P | W | C | L | P | ects | W | C | L | P | ects | W | C | L | P | ects | W | C | L | P | ects | W | C | L | P | ects | W | C | L | P | ects | W | C | L | P | ects | zaliczenie |
| Rekreacja, wychowanie fizyczne I | 18 | 1 | 0 | 18 | 0 | 0 | | 18 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | ZAL |
| Rekreacja, wychowanie fizyczne II | 18 | 1 | 0 | 18 | 0 | 0 | | | | | | | 18 | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | ZAL |
| Przedmiot humanistyczny I | 9 | 1 | 9 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | 9 | | | | 1 | | | | | | | | | | | Zo |
| Przedmiot humanistyczny II | 9 | 1 | 9 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 9 | | | | 1 | EGZ |
| Ochrona własności intelektualnej/ prawo w praktyce inżynie | 9 | 1 | 9 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 9 | | | | 1 | Zo |
| Technologia informacyjna | 18 | 2 | 0 | 0 | 18 | 0 | | | 18 | | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Zo |
| Podstawy publikacji elektronicznych | 18 | 3 | 0 | 0 | 18 | 0 | | | | | | | | | | | | | | | | | | | | | | 18 | | | 3 | | | | | | | | | | | Zo |
| Etyka | 9 | 1 | 9 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | 9 | | | | 1 | | | | | | EGZ |
| Ergonomia i bezpieczeństwo pracy | 9 | 1 | 9 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 9 | | | | 1 | Zo |
| **Moduł językowy** | 117 | | | | | | I semestr | | | | | II semestr | | | | | III semestr | | | | | IV semestr | | | | | V semestr | | | | | VI semestr | | | | | VII semestr | | | | | |
| przedmioty: | L.godz. | ECTS | W | C | L | P | W | C | L | P | ects | W | C | L | P | ects | W | C | L | P | ects | W | C | L | P | ects | W | C | L | P | ects | W | C | L | P | ects | W | C | L | P | ects | zaliczenie |
| Język angielski/ Język niemiecki | 18 | 2 | 0 | 18 | 0 | 0 | | 18 | | | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Zo |
| Język angielski/ Język niemiecki | 18 | 2 | 0 | 18 | 0 | 0 | | | | | | | 18 | | | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | Zo |
| Język angielski/ Język niemiecki | 18 | 2 | 0 | 18 | 0 | 0 | | | | | | | | | | | | 18 | | | 2 | | | | | | | | | | | | | | | | | | | | | Zo |
| Język angielski/ Język niemiecki | 18 | 2 | 0 | 18 | 0 | 0 | | | | | | | | | | | | | | | | | 18 | | | 2 | | | | | | | | | | | | | | | | EGZ |
| | 72 | 20 | 45 | 108 | 36 | 0 | 0 | 36 | 18 | 0 | 5 | 0 | 36 | 0 | 0 | 3 | 0 | 18 | 0 | 0 | 2 | 0 | 18 | 0 | 0 | 2 | 9 | 0 | 18 | 0 | 4 | 9 | 0 | 0 | 0 | 1 | 27 | 0 | 0 | 0 | 3 | |
| **Moduł podstawowy** | | | | | | | I semestr | | | | | II semestr | | | | | III semestr | | | | | IV semestr | | | | | V semestr | | | | | VI semestr | | | | | VII semestr | | | | | |
| przedmioty: | L.godz. | ECTS | W | C | L | P | W | C | L | P | ects | W | C | L | P | ects | W | C | L | P | ects | W | C | L | P | ects | W | C | L | P | ects | W | C | L | P | ects | W | C | L | P | ects | zaliczenie |
| Analiza matematyczna | 27 | 5 | 9 | 18 | 0 | 0 | 9 | 18 | | | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | EGZ |
| Algebra liniowa | 27 | 5 | 9 | 18 | 0 | 0 | | | | | | 9 | 18 | | | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | EGZ |
| Zaawansowane metody matematyczne (matlab) | 27 | 5 | 9 | 18 | 0 | 0 | | | | | | | | | | | 9 | 18 | | | 5 | | | | | | | | | | | | | | | | | | | | | EGZ |
| Fizyka klasyczna | 27 | 4 | 9 | 18 | 0 | 0 | 9 | 18 | | | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | EGZ |
| Fizyka relatywistyczna | 18 | 3 | 9 | 0 | 9 | 0 | | | | | | 9 | | 9 | | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | EGZ |
| Chemia | 45 | 7 | 18 | 9 | 18 | 0 | 18 | 9 | 18 | | 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | EGZ |
| Chemia fizyczna | 27 | 4 | 9 | 0 | 18 | 0 | | | | | | 9 | | 18 | | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | EGZ |
| Nowoczesne materiały w przemyśle | 36 | 5 | 20 | 9 | 9 | 0 | | | | | | 18 | 9 | 9 | | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | EGZ |
| | 234 | 38 | 92 | 90 | 54 | 0 | 36 | 45 | 18 | 0 | 16 | 45 | 27 | 36 | 0 | 17 | 9 | 18 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| **Moduł kierunkowy** | | | | | | | I semestr | | | | | II semestr | | | | | III semestr | | | | | IV semestr | | | | | V semestr | | | | | VI semestr | | | | | VII semestr | | | | | |
| przedmioty: | L.godz. | ECTS | W | C | L | P | W | C | L | P | ects | W | C | L | P | ects | W | C | L | P | ects | W | C | L | P | ects | W | C | L | P | ects | W | C | L | P | ects | W | C | L | P | ects | zaliczenie |
| Podstawy Metalurgii | 36 | 5 | 18 | 9 | 0 | 9 | 18 | 9 | | 9 | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | EGZ |
| Przetwórstwo metali | 27 | 4 | 9 | 18 | 0 | 0 | 9 | 18 | | | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | EGZ |
| Technolgie łączenia i spajania materiałów | 27 | 5 | 15 | 0 | 18 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 9 | | 18 | | 5 | EGZ |
| Urządzenia cieplne w technice | 27 | 3 | 15 | 9 | 9 | 0 | | | | | | | | | | | | | | | | 9 | 9 | 9 | | 3 | | | | | | | | | | | | | | | | EGZ |
| Termodynamika | 27 | 6 | 9 | 18 | 0 | 0 | | | | | | | | | | | 9 | 18 | | | 6 | | | | | | | | | | | | | | | | | | | | | EGZ |
| Zaawansowane metody badania materiałów | 18 | 3 | 9 | 0 | 0 | 9 | | | | | | 9 | | | 9 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | EGZ |
| Mechanika i Wytrzymałość Materiałów | 36 | 5 | 18 | 9 | 9 | 0 | | | | | | | | | | | 18 | 9 | 9 | | 5 | | | | | | | | | | | | | | | | | | | | | EGZ |
| Grafika inzynierska i projektowanie | 27 | 3 | 9 | 9 | 0 | 9 | | | | | | 9 | 9 | | 9 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | Zo |
| Podstawy cybernetyki | 18 | 3 | 10 | 10 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 9 | 9 | | | 3 | EGZ |
| Informatyka | 27 | 4 | 9 | 0 | 18 | 0 | | | | | | 9 | | 18 | | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | Zo |
| Technologia CAD/CAM | 27 | 3 | 9 | 0 | 9 | 9 | | | | | | | | | | | | | | | | 9 | | 9 | 9 | 3 | | | | | | | | | | | | | | | | Zo |
| Metaloznawstwo | 45 | 6 | 18 | 0 | 18 | 9 | | | | | | | | | | | 18 | | 18 | 9 | 6 | | | | | | | | | | | | | | | | | | | | | EGZ |
| Procesy przeróbki plastycznej | 36 | 5 | 18 | | 9 | 0 | | | | | | | | | | | | | | | | 18 | 9 | 9 | | 5 | | | | | | | | | | | | | | | | EGZ |
| Metalurgia metali | 36 | 6 | 18 | 0 | 18 | 0 | | | | | | | | | | | 18 | | 18 | | 6 | | | | | | | | | | | | | | | | | | | | | EGZ |
| Procesy metalurgii ekstrakcyjnej | 45 | 7 | 18 | 0 | 9 | 9 | | | | | | | | | | | | | | | | 18 | 9 | 9 | 9 | 7 | | | | | | | | | | | | | | | | EGZ |
| | 459 | 68 | 202 | 82 | 117 | 54 | 27 | 27 | 0 | 9 | 9 | 27 | 9 | 18 | 18 | 10 | 63 | 27 | 45 | 9 | 23 | 54 | 27 | 36 | 18 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 9 | 18 | 0 | 8 | |
| **Zaawansowane technologie wytwarzania** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| przedmioty: | L.godz. | ECTS | W | C | L | P | W | C | L | P | ects | W | C | L | P | ects | W | C | L | P | ects | W | C | L | P | ects | W | C | L | P | ects | W | C | L | P | ects | W | C | L | P | ects | zaliczenie |
| Rafinacja metali i stopów | 18 | 4 | 9 | 9 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 9 | 9 | | | 4 | EGZ |
| Odlewanie metali i stopów | 18 | 3 | 9 | 9 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | 9 | 9 | | | 3 | | | | | | | | | | | Zo |
| Recykling metali i stopów | 27 | 3 | 9 | 0 | 9 | 9 | | | | | | | | | | | | | | | | | | | | | | | | | | 9 | | 9 | 9 | 3 | | | | | | EGZ |
| Podstawy technologii wytwarzania | 18 | 3 | 9 | 0 | 9 | 0 | | | | | | | | | | | | | | | | | | | | | 9 | | 9 | | 3 | | | | | | | | | | | EGZ |
| Konstrukcje inzynierskie | 27 | 3 | 9 | 9 | 0 | 9 | | | | | | | | | | | | | | | | | | | | | | | | | | 9 | 9 | | 9 | 3 | | | | | | EGZ |
| Zaawansowane technologie wytwarzania | 27 | 5 | 9 | 18 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | 9 | 18 | | | 5 | | | | | | | | | | | Zo |
| Alternatywne metody wytwarzania maszyn i narzędzi | 27 | 3 | 9 | 0 | | 9 | | | | | | | | | | | | | | | | | | | | | | | | | | 9 | | 9 | 9 | 3 | | | | | | Zo |
| Opracowanie wyników pomiarów i staystyka dla inzynierów | 18 | 4 | 9 | 9 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | 9 | 9 | | | 4 | | | | | | | | | | | EGZ |
| Metalurgia metali towarzyszących | 18 | 2 | 9 | 9 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | 9 | 9 | | | 2 | | | | | | EGZ |
| Metalurgia proszków/Materiały typu SMART | 18 | 3 | 9 | 0 | 9 | 0 | | | | | | | | | | | | | | | | | | | | | 9 | | 9 | | 3 | | | | | | | | | | | Zo |
| Utylizacja odpadów i ochrona środowiska | 27 | 3 | 9 | 0 | 9 | 9 | | | | | | | | | | | | | | | | | | | | | | | | | | 9 | | 9 | 9 | 3 | | | | | | Zo |
| Inżynieria systemów i bazy danych | 18 | 4 | 9 | 0 | 0 | 9 | | | | | | | | | | | | | | | | | | | | | 9 | | | 9 | 4 | | | | | | | | | | | EGZ |
| Transport masy i ciepła | 18 | 4 | 0 | 0 | 9 | 0 | | | | | | | | | | | | | | | | | | | | | 9 | | 9 | | 4 | | | | | | | | | | | EGZ |
| **Moduł edycji pracy dyplomowej** | | | | | | | I semestr | | | | | II semestr | | | | | III semestr | | | | | IV semestr | | | | | V semestr | | | | | VI semestr | | | | | VII semestr | | | | | |
| przedmioty: | L.godz. | ECTS | W | C | L | P | W | C | L | P | ects | W | C | L | P | ects | W | C | L | P | ects | W | C | L | P | ects | W | C | L | P | ects | W | C | L | P | ects | W | C | L | P | ects | zaliczenie |
| seminarium dyplomowe 1 i 2 | 36 | 20 | 0 | 36 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | 18 | | | 5 | | 18 | | | 15 | ZAL |
| praktyka zawodowa | 0 | 20 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | | 10 | | | | | | | | | | 10 | | | | | | |
| | 315 | 84 | 108 | 99 | 45 | 45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 63 | 36 | 27 | 9 | 26 | 45 | 36 | 27 | 36 | 29 | 9 | 27 | 0 | 0 | 19 | |
| **Razem:** | 1197 | 210 | 447 | 379 | 252 | 99 | 63 | 108 | 36 | 9 | 30 | 72 | 72 | 54 | 18 | 30 | 72 | 63 | 45 | 9 | 30 | 54 | 45 | 36 | 18 | 30 | 72 | 36 | 45 | 9 | 30 | 54 | 36 | 27 | 36 | 30 | 54 | 36 | 18 | 0 | 30 | |
| **Treści kierunkowe i podstawowe razem** | 693 | | | | | | 216 | | | | | 216 | | | | | 189 | | | | | 153 | | | | | 162 | | | | | 153 | | | | | 108 | | | | | |
| **Treści jezykowe** | 72 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Treści ogólne** | 117 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Specjalność** | 315 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Razem** | 1 197 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |