|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PLAN STUDIÓW II stopnia - studia stacjonarne** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Wydział | **INŻYNIERII ŚRODOWISKA I ENERGETYKI** | | | | | | | | | | | | | | | |  |  | **r. ak. 2017/2018** | | | | | | |
| Kierunek | **Inżynieria Środowiska** | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Specjalność | **Gospodarka odpadami** | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **PRZEDMIOTY - SEMESTR** | | | | | | | **1 sem** | | | | **2 sem** | | | | **3 sem** | | | | |  |  | **Punkty kredytowe** | | | |
|  | **Razem** | **Wykł.** | **Ćw.** | **Sem.** | **Lab.** | **Proj.** | w | c | l | p | w | c | l | p | w | c | s | l | p |  |  | 1 | 2 | 3 |  |
| **PRZEDMIOTY NIETECHNICZNE** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Język obcy | 60 | 0 | 60 | 0 | 0 | 0 |  | 2 |  |  |  | 2 |  |  |  |  |  |  |  |  |  | 2 | 2 |  | 4 |
| Przedmiot humanistyczno-społeczny | 30 | 30 | 0 | 0 | 0 | 0 | 2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 3 |  |  | 3 |
| Przedmiot ekonomiczny | 30 | 30 | 0 | 0 | 0 | 0 |  |  |  |  | 2 |  |  |  |  |  |  |  |  |  |  |  | 2 |  | 2 |
| **PRZEDMIOTY PODSTAWOWE** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Statystyka | 30 | 15 | 0 | 0 | 15 | 0 | 1 |  | 1 |  |  |  |  |  |  |  |  |  |  |  |  | 2 |  |  | 2 |
| Chemia środowiska | 30 | 15 | 0 | 0 | 15 | 0 | 1 |  | 1 |  |  |  |  |  |  |  |  |  |  |  |  | 2 |  |  | 2 |
| Planowanie przestrzenne | 15 | 15 | 0 | 0 | 0 | 0 | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1 |  |  | 1 |
| Zarządzanie środowiskiem | 30 | 15 | 15 | 0 | 0 | 0 | 1 | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2 |  |  | 2 |
| Niezawodność i bezpieczeństwo systemów inżynierskich | 15 | 15 | 0 | 0 | 0 | 0 | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1 |  |  | 1 |
| **PRZEDMIOTY KIERUNKOWE** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Monitoring środowiska | 15 | 15 | 0 | 0 | 0 | 0 |  |  |  |  | 1 |  |  |  |  |  |  |  |  |  |  |  | 1 |  | 1 |
| Alternatywne źródła energii / Alternative energy sources | 30 | 30 | 0 | 0 | 0 | 0 |  |  |  |  | 2 |  |  |  |  |  |  |  |  |  |  |  | 2 |  | 2 |
| Technologia i organizacja robót instalacyjnych | 30 | 15 | 15 | 0 | 0 | 0 |  |  |  |  | 1 | 1 |  |  |  |  |  |  |  |  |  |  | 2 |  | 2 |
| **PRZEDMIOTY SPECJALNOŚCIOWE** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Optymalizacja środowiskowa systemów gospodarki odpadami | 30 | 0 | 0 | 0 | 0 | 30 |  |  |  | 2 |  |  |  |  |  |  |  |  |  |  |  | 2 |  |  | 2 |
| Procesy fizykochemiczne w gospodarce odpadami | 45 | 15 | 0 | 0 | 0 | 30 | 1 |  |  | 2 |  |  |  |  |  |  |  |  |  |  |  | 2 |  |  | 2 |
| Chemia gleby odpadów i osadów | 45 | 15 | 0 | 0 | 30 | 0 | 1 |  | 2 |  |  |  |  |  |  |  |  |  |  |  |  | 2 |  |  | 2 |
| Podstawy termicznego unieszkodliwiania odpadów | 45 | 15 | 0 | 0 | 30 | 0 | 1 |  | 2 |  |  |  |  |  |  |  |  |  |  |  |  | 2 |  |  | 2 |
| Przedmiot obieralny 1 \* | 30 | 15 | 15 | 0 | 0 | 0 | 1 | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  | 2 |  |  | 2 |
| Przedmiot obieralny 2 \*\* | 30 | 15 | 15 | 0 | 0 | 0 | 1 | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  | 3 |  |  | 3 |
| Praktyka wakacyjna (4 tygodnie) | 0 | 0 | 0 | 0 | 0 | 0 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 4 |  |  | 4 |
| Zasady zrównoważonego rozwoju w energetyce i gospodarce odpadami | 45 | 15 | 0 | 0 | 0 | 30 |  |  |  |  | 1 |  |  | 2 |  |  |  |  |  |  |  |  | 3 |  | 3 |
| Recykling odpadów komunalnych | 30 | 15 | 0 | 0 | 0 | 15 |  |  |  |  | 1 |  |  | 1 |  |  |  |  |  |  |  |  | 2 |  | 2 |
| Zarządzanie projektem | 30 | 0 | 0 | 0 | 0 | 30 |  |  |  |  |  |  |  | 2 |  |  |  |  |  |  |  |  | 2 |  | 2 |
| Technologie unieszkodliwiania odpadów niebezpiecznych | 60 | 30 | 0 | 0 | 30 | 0 |  |  |  |  | 2 |  | 2 |  |  |  |  |  |  |  |  |  | 6 |  | 6 |
| Podstawowe techniki przetwarzania odpadów / Base techniques of waste treatment | 45 | 15 | 30 | 0 | 0 | 0 |  |  |  |  | 1 | 2 |  |  |  |  |  |  |  |  |  |  | 5 |  | 5 |
| Przedmiot obieralny 3 \*\*\* | 30 | 15 | 15 | 0 | 0 | 0 |  |  |  |  | 1 | 1 |  |  |  |  |  |  |  |  |  |  | 3 |  | 3 |
| Systemy wspomagania komputerowego w zarządzaniu gospodarką odpadami | 15 | 0 | 0 | 0 | 15 | 0 |  |  |  |  |  |  |  |  |  |  |  | 1 |  |  |  |  |  | 1 | 1 |
| Światowe trendy w zagospodarowaniu odpadów | 45 | 30 | 0 | 0 | 0 | 15 |  |  |  |  |  |  |  |  | 2 |  |  |  | 1 |  |  |  |  | 2 | 2 |
| Zarządzanie odpadami w przemyśle | 30 | 0 | 30 | 0 | 0 | 0 |  |  |  |  |  |  |  |  |  | 2 |  |  |  |  |  |  |  | 1 | 1 |
| Techniki minimalizacji odpadów | 30 | 15 | 15 | 0 | 0 | 0 |  |  |  |  |  |  |  |  | 1 | 1 |  |  |  |  |  |  |  | 2 | 2 |
| Seminarium dyplomowe | 30 | 0 | 0 | 30 | 0 | 0 |  |  |  |  |  |  |  |  |  |  | 2 |  |  |  |  |  |  | 4 | 4 |
| Praca dyplomowa magisterska | 0 | 0 | 0 | 0 | 0 | 0 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 20 | 20 |
| **Liczba godz.zajęć w tygodniu** | 930 | 405 | 210 | 30 | 135 | 150 | 12 | 5 | 6 | 4 | 12 | 6 | 2 | 5 | 3 | 3 | 2 | 1 | 1 |  |  |  |  |  |  |
| **Łącznie godz/pkt w tygod.** |  |  |  |  |  |  | **27** | | | | **25** | | | | **10** | | | | |  |  |  |  |  |  |
| **Łącznie pkt kredytowych** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 30 | 30 | 30 | 90 |
| **Egzaminy** |  |  |  |  |  |  | **3** | | | | **2** | | | | **0** | | | | |  |  |  |  |  |  |
| \* przedmiot obieralny o łącznej liczbie punktów ECTS 2 i łącznej liczbie godzin 2h/tydzień (suma 30h w semestrze, gdzie15h wykładu + 15h ćw/lab/proj/sem) | | | | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |
| \*\* przedmiot obieralny o łącznej liczbie punktów ECTS 3 i łącznej liczbie godzin 2h/tydzień (suma 30h w semestrze, gdzie15h wykładu + 15h ćw/lab/proj/sem) | | | | | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |
| \*\*\* przedmiot obieralny o łącznej liczbie punktów ECTS 3 i łącznej liczbie godzin 2h/tydzień (suma 30h w semestrze, gdzie15h wykładu + 15h ćw/lab/proj/sem) | | | | | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |