



AGH

AGH UNIVERSITY OF SCIENCE
AND TECHNOLOGY

Faculty of: Materials Science and Ceramics

Field of study: Materials Science Study level: Second-cycle studies Form and type of study: Full-time studies

Specjalty: Mikro i nanotechnologie materiałowe Annual: 2017/2018 Lecture language: Polish

| Code | Module name | Lectures | Auditorium classes | Laboratory classes | Project classes | Conversation seminar | Seminar classes | Practical classes | Fieldwork classes | Workshops | Others | E-learning | ECTS | E |
|--|---|----------|--------------------|--------------------|-----------------|----------------------|-----------------|-------------------|-------------------|-----------|--------|------------|------|-----|
| Semester 1 | | | | | | | | | | | | | | |
| Other Basic | | | | | | | | | | | | | | |
| CIM-2-104-MN-s | Advanced Materials Research Methods | 15 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | No |
| CIM-2-109-MN-s | Komputerowe wspomaganie w inżynierii materiałowej | 45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | Yes |
| CIM-2-110-MN-s | Materials from renewable sources | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 3 | No |
| CIM-2-111-MN-s | Advanced Ceramic Materials Engineering | 45 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 4 | Yes |
| CIM-2-112-MN-s | Surface engineering | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | No |
| Mikro i nanotechnologie materiałowe | | | | | | | | | | | | | 10 | |
| The rules for selecting groups/modules: Student wybiera pięć przedmiotów z grupy "Mikro i nanotechnologie materiałowe" | | | | | | | | | | | | | | |
| CIM-2-101-MN-s | Nanozawiesiny i nanokompozyty ceramiczne | 15 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 2 | No |
| CIM-2-102-MN-s | Nanoproszki ceramiczne | 15 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 2 | No |
| CIM-2-103-MN-s | Mikrotechnologie materiałowe | 15 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 2 | No |
| CIM-2-105-MN-s | Technologies of structural materials | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | No |
| CIM-2-106-MN-s | Ceramic materials with covalent bond | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | No |
| CIM-2-113-MN-s | Kompozyty wzmacniane fazami ceramicznymi | 18 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 2 | No |
| CIM-2-114-MN-s | Inżynieria nowoczesnych materiałów budowlanych | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | No |
| Suma ECTS | | | | | | | | | | | | | 29 | |
| Semester 2 | | | | | | | | | | | | | | |
| Elective | | | | | | | | | | | | | | |
| CIM-2-201-MN-s | Mikro i Nano Technologie Materiałowe | 30 | 0 | 69 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 9 | Yes |

Study programme - Materials Science - 2017/2018

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|---|--|----------|--------------------|--------------------|-----------------|----------------------|-----------------|-------------------|-------------------|-----------|--------|------------|------|-----|
| CIM-2-206-MN-s | Seminarium magisterskie | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 2 | No |
| CIM-2-207-MN-s | Praca magisterska | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | No |
| Other Basic | | | | | | | | | | | | | | |
| CIM-2-202-MN-s | Design and physics of engineering materials | 45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | No |
| CIM-2-203-MN-s | Inżynieria materiałów funkcjonalnych | 30 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 4 | Yes |
| CIM-2-223-MN-s | Bioceramics | 15 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 2 | No |
| CIM-2-224-MN-s | Struktura, a funkcja materiałów | 30 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 4 | Yes |
| Foreign language | | | | | | | | | | | | | | |
| The rules for selecting groups/modules: Student wybiera jeden z przedmiotów z grupy język obcy. | | | | | | | | | | | | | 2 | |
| CIM-2-225-MN-s | Angielska terminologia techniczna | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 2 | Yes |
| CIM-2-226-MN-s | Język angielski B2+ - obowiązkowy kurs języka specjalistycznego na studiach II stopnia dla studentów Wydziału Inżynierii Materiałowej i Ceramiki | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | Yes |
| Przedmiot obieralny z obszaru nauk humanistycznych i społecznych | | | | | | | | | | | | | | |
| The rules for selecting groups/modules: Student wybiera jeden przedmiot z bloku. | | | | | | | | | | | | | 3 | |
| CIM-2-210-MN-s | Bioethics | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | No |
| CIM-2-212-MN-s | Fashion engineering | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | No |
| Specialized subject Sf | | | | | | | | | | | | | | |
| The rules for selecting groups/modules: Student wybiera jeden z modułów z listy. | | | | | | | | | | | | | 2 | |
| CIM-2-204-MN-s | Kierowana krystalizacja szkła i tworzywa szklanokrystaliczne | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 2 | No |
| CIM-2-205-MN-s | Nieorganiczne materiały jonowo-kowalencyjne | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 2 | No |
| CIM-2-208-MN-s | Spektroskopia oscylacyjna ciała stałego | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 2 | No |
| CIM-2-211-MN-s | Akustyczne badania materiałów | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 2 | No |
| CIM-2-213-MN-s | Korozja materiałów budowlanych | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 2 | No |
| CIM-2-214-MN-s | Metody i narzędzia rozwiązywania problemów produkcyjnych i technologicznych | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 2 | No |
| CIM-2-215-MN-s | Mikroskopia Optyczna w badaniach materiałów | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 2 | No |
| CIM-2-216-MN-s | Modyfikowanie barwy ceramicznych materiałów budowlanych | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 2 | No |
| CIM-2-217-MN-s | Nowoczesne materiały i techniki w analityce | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 2 | No |
| CIM-2-218-MN-s | Nowoczesne metody instrumentalne w kontroli procesów przemysłowych i ochronie środowiska | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 2 | No |
| CIM-2-219-MN-s | Optyka i spektroskopia szkieł | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 2 | No |
| CIM-2-220-MN-s | Otrzymywanie tworzyw metodą krystalizacji z fazy gazowej | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 2 | No |
| CIM-2-221-MN-s | Przemiany fazowe | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 2 | No |
| Suma ECTS | | | | | | | | | | | | | 32 | |
| Semester 3 | | | | | | | | | | | | | | |
| Elective | | | | | | | | | | | | | | |
| CIM-2-301-MN-s | Seminarium specjalistyczne | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 2 | No |
| CIM-2-302-MN-s | Seminarium magisterskie | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 3 | No |
| CIM-2-305-MN-s | Praca magisterska | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | No |
| Other Basic | | | | | | | | | | | | | | |
| CIM-2-303-MN-s | Zarządzanie produkcją, usługami i personelem | 30 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 2 | No |

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|--|---|----------|--------------------|--------------------|-----------------|----------------------|-----------------|-------------------|-------------------|-----------|--------|------------|-----------|----|
| Przedmiot obieralny anglojęzyczny (Df) | | | | | | | | | | | | | 3 | |
| The rules for selecting groups/modules: Student wybiera jeden przedmiot z listy modułów. | | | | | | | | | | | | | 3 | |
| CIM-2-304-MN-s | Recent developments and applications of refractories (Dr hab. Janusz Zborowski) | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 3 | No |
| CIM-2-306-MN-s | Theory and practice of ceramics processes | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 3 | No |
| CIM-2-307-MN-s | Thermoelectric materials | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 3 | No |
| CIM-2-308-MN-s | Synthesis of nanosized particles and their application in nanoceramics and nanocomposite technology (Prof. Thomas Graule) | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 3 | No |
| CIM-2-309-MN-s | Syntesis, sintering and behaviour of nanostructured materials (Prof. Kiyotaka Matsuura) | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 3 | No |
| CIM-2-310-MN-s | Numerical methods in materials science | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 3 | No |
| CIM-2-311-MN-s | Advanced forming methods | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 3 | No |
| CIM-2-312-MN-s | BioComposites | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 3 | No |
| CIM-2-313-MN-s | BioSurface Engineering (Prof. Dieter Scharnweber) | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 3 | No |
| CIM-2-314-MN-s | Degradation of engineering materials | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 3 | No |
| CIM-2-315-MN-s | Advanced chemical analysis | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 3 | No |
| CIM-2-316-MN-s | Chemistry and technology of cementitious materials | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 3 | No |
| CIM-2-317-MN-s | Materials Science in Space Technologies | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 3 | No |
| CIM-2-318-MN-s | Physical Chemistry of Surfaces and Surface Analytical Techniques | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 3 | No |
| CIM-2-319-MN-s | Experimental methods in solid state chemistry | 15 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 3 | No |
| CIM-2-320-MN-s | Neurochemistry and Neuropharmacology | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 3 | No |
| CIM-2-321-MN-s | Neurobiology of drug dependence | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 3 | No |
| CIM-2-322-MN-s | Introductory Quantum Chemistry | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 3 | No |
| CIM-2-323-MN-s | Wear behaviour of high-temperature ceramics in extreme environment applications | 0 | 0 | 0 | 0 | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 3 | No |
| CIM-2-324-MN-s | Atomic Force Microscopy and its variants in advanced measurements | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 3 | No |
| Suma ECTS | | | | | | | | | | | | | 30 | |