



UNIVERSITY OF WARSAW

Faculty of Chemistry

1 Pasteura Str., 02-093 Warsaw, Poland

BACHELOR PROGRAM, Chemistry - 2008/2009
First Semester

E - exam, **Z** - pass/no pass with a grade
A - mandatory course, **B** - extended course
To accumulate **60 ECTS** students **have to take mandatory courses and electives.**

| Mandatory Classes | | | | | | | |
|-------------------|--|------------|----------------------|----------------------|----------------------|----------|-------------|
| N° | Subject | Hours | Lectures | Tutorials | Prosem. | Laborat. | ECTS |
| 1. | Matematics "A" | 90 | 30 E | 60 Z | | | 11 |
| 2. | Physics A | 60 | 30 E | 30 Z | | | 8 |
| 3. | General Chemistry -prof.Jaworski | 75 | 45 E | | 30 Z | | 6,5 |
| or | General Chemistry - prof. Orlik | 75 | 45 E | | 30 Z | | 6,5 |
| 4. | Workplace Safety and Ergonomics | 4 | | | | | 0,5 |
| 5. | Protection of Intellectual Property Rights | 4 | | | | | 0,5 |
| 6. | Physical Education | 30 | | 30 | | | |
| | Total (mandatory) | 263 | | | | | 26,5 |

| Electives | | | | | | | |
|-----------|----------------------|-------|----------------------|----------------------|--------------------------|----------|------|
| N° | Subject | Hours | Lectures | Tutorials | Prosem. | Laborat. | ECTS |
| 7. | General Chemistry* | 75 | 45 E | | ≤ 30 Z ≥ | | 6,5 |
| 8. | Matematics "0" | 120 | 30 E | 90 Z | | | 11 |
| 9. | Matematics B | 105 | 45 E | 60 Z | | | 12 |
| 10. | Physics B | 75 | 45 E | 30 Z | | | 9 |
| 11. | Foreign Language | 60 | | 60 Z | | | 2 |
| 12. | Philosophy 1 | 15 | 15 Z | | | | 1 |
| 13. | History of Chemistry | 15 | 15 Z | | | | 1 |

*lecture offered in English

Supervisor: [Jadwiga Skupińska](#)

Webmaster: [Adam Myśliński](#)



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**BACHELOR PROGRAM, Chemistry - 2008/2009
Second Semester**

E - exam, **Z** - pass/no pass with a grade
A - mandatory course, **B** - extended course
To accumulate **60 ECTS** students **have to take mandatory courses and electives.**

| Mandatory Classes | | | | | | | |
|-------------------|---|------------|----------------------|----------------------|---------|----------------------|-----------|
| N° | Subject | Hours | Lectures | Tutorials | Prosem. | Laborat. | ECTS |
| 1. | Mathematics A | 90 | 30 E | 60 Z | | | 9 |
| 2. | Physics A | 90 | 30 E | 30 Z | | 30 Z | 8 |
| 3. | General Chemistry | 90 | | 30 Z | | 60 Z | 7 |
| 4. | Fundamentals of Analytical Chemistry | 30 | 30 E | | | | 3 |
| 5. | Fundamentals of Analytical Chemistry I* | 15 | 15 Z | | | | 1,5 |
| 6. | Computers in Chemical Laboratory | 30 | | | | 30 Z | 2 |
| 7. | Physical Education | 30 | 30 Z | | | | |
| | Total (mandatory) | 360 | | | | | 29 |

| Electives | | | | | | | |
|-----------|--------------------------|-------|----------------------|----------------------|---------|----------------------|------|
| N° | Subject | Hours | Lectures | Tutorials | Prosem. | Laborat. | ECTS |
| 8. | Mathematics B | 90 | 30 E | 60 Z | | | 10 |
| 9. | Physics B | 105 | 45 E | 30 Z | | 30 Z | 10 |
| 10. | Chemistry of Bioelements | 30 | 30 E | | | | 2 |
| 11. | Foreign Language | 60 | | 60 Z | | | 2 |
| 12. | Philosophy 2 | 15 | 15 Z | | | | 1 |
| 13. | General Electives** | | | | | | |

*Under construction
Students should accumulate min 9 max 12 ECTS choosing General Electives denoted **

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**BACHELOR PROGRAM, Chemistry - 2008/2009
Third Semester**

E - exam, **Z** - pass/no pass with a grade
A - mandatory course, **B** - extended course
To accumulate **60 ECTS** students **have to take mandatory courses and electives.**

| Mandatory Classes | | | | | | | |
|-------------------|--|------------|----------------------|----------------------|---------------------|----------------------|-------------|
| N° | Subject | Hours | Lectures | Tutorials | Prosem. | Laborat. | ECTS |
| 1. | Fundamentals of Analytical Chemistry A | 75 | | 30 Z | | 45 Z | 6 |
| 2. | Physical Chemistry I A | 75 | 30 E | 15 Z | | 30Z | 6,5 |
| 3. | Organic Chemistry I | 75 | 45 E | | 30Z | | 6,5 |
| 4. | Introduction to Quantum Chemistry* | 45 | 15 E | | | 30 Z | 3,5 |
| 5. | Physical Education | 30 | | 30 Z | | | |
| | Total (mandatory) | 300 | | | | | 22,5 |

| Electives | | | | | | | |
|-----------|---|-------|----------------------|----------------------|---------|----------------------|------|
| N° | Subject | Hours | Lectures | Tutorials | Prosem. | Laborat. | ECTS |
| 6. | Fundamentals of Analytical Chemistry B | 90 | | 30 Z | | 60 Z | 7 |
| 7. | Physical Chemistry I B | 120 | 30 E | 30 Z | | 60 Z | 10 |
| 8. | Foundations of Quantum Chemistry* | 45 | 15 E | | | 30 Z | 4,5 |
| 9. | Computers in Chemical Laboratory and Programming Laboratory** | 30 | | | | 30 Z | 2 |
| 10. | Basics of Programming** | 30 | | | | 30 Z | 2 |
| 11. | New Materials in Chemistry | 30 | 30 Z | | | | 2 |
| 12. | Foreign Language | 60 | | 60 Z | | | 2 |
| | General Electives** | | | | | | |

Students should choose one of the courses denoted*
Students should accumulate 8-11 ECTS choosing General Electives denoted **ECTS

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**BACHELOR PROGRAM, Chemistry - 2008/2009
Fourth Semester**

E - exam, **Z** - pass/no pass with a grade
A - mandatory course, **B** - extended course
To accumulate **60 ECTS** students **have to take mandatory courses and electives.**

| Mandatory Classes | | | | | | | |
|-------------------|---|------------|----------------------|----------------------|---------|----------------------|-----------|
| N° | Subject | Hours | Lectures | Tutorials | Prosem. | Laborat. | ECTS |
| 1. | Physical Chemistry I A | 60 | 15 E | 15 Z | | 30 Z | 5 |
| 2. | Organic Chemistry I A | 90 | | | | 90 Z | 6 |
| 3. | Inorganic Chemistry I | 30 | 30 E | | | | 3 |
| 4. | Fundamentals of Spectroscopy A | 35 | 15 E | | | 20 Z | 3 |
| 5. | Introduction to Instrumental Analysis A | 35 | 15 E | | | 20 Z | 3 |
| 6. | Physical Education | 30 | | | | | |
| 7. | Trainings for Students | 3 weeks | | | | | 3 |
| | Total (mandatory) | 280 | | | | | 23 |

| Electives | | | | | | | |
|-----------|--|-------|----------------------|----------------------|---------|-----------------------|------|
| N° | Subject | Hours | Lectures | Tutorials | Prosem. | Laborat. | ECTS |
| 8. | Introduction to Instrumental Analysis B | 45 | 15 E | | | 30 Z | 3.5 |
| 9. | Physical Chemistry I B | 105 | 15 E | 30 Z | | 60 Z | 8.5 |
| 10. | Organic Chemistry I B | 135 | 15 E | | | 120 Z | 9.5 |
| 11. | Numerical & Statistical Methods in Chemistry I | 30 | 15 Z | | | 15 Z | 2 |
| 12. | Chemical Metrology | 30 | 30 Z | | | | 2 |
| 13. | General Electives | | | | | | |
| 14. | Foreign Language | 60 | | | 60 Z | | 2 |

Supervisor: [Jadwiga Skupińska](#)

Webmaster: [Adam Myśliński](#)



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**BACHELOR PROGRAM, Chemistry - 2008/2009
Fifth Semester**

E - exam, **Z** - pass/no pass with a grade
A - mandatory course, **B** - extended course
To accumulate **60 ECTS** students **have to take mandatory courses and electives.**

| Mandatory Classes | | | | | | | |
|-------------------|--|------------|--|-----------|---------|----------------------|-------------|
| N° | Subject | Hours | Lectures | Tutorials | Prosem. | Laborat. | ECTS |
| 1. | Identification of Organic Compounds A | 35 | 15 E | | | 20 Z | 3 |
| 2. | Chemical Technology* or Basic Biotechnology* | 90 | 30 E 30 E | | | 60 Z | 7 |
| 3. | One of the Profiled Lectures** | 30 | 30 E | | | | 2 |
| 4. | Biochemistry A | 50 | 30 E | | | 20 Z | 5 |
| 5. | Inorganic Chemistry I A | 60 | 15 E | | | 45 Z | 4.5 |
| 6. | Certified Foreign Language Exam (B2 level) | | | | | | 2,5 |
| | Total (mandatory) | 265 | | | | | 23,5 |

| Electives | | | | | | | |
|-----------|---|-------|----------------------|-----------|----------------------|----------------------|------|
| N° | Przedmiot | Hours | Lectures | Tutorials | Prosem. | Laborat. | ECTS |
| 7. | Identification of Organic Compounds B | 90 | 30 E | | 15 Z | 45 Z | 7 |
| 8. | Biochemistry B | 75 | 30 E | | | 45 Z | 6 |
| 9. | Inorganic Chemistry I B | 120 | 30 E | | | 90 Z | 9 |
| 10. | Numerical and Statistical Methods in Chemistry II | 30 | 15 Z | | | 15 Z | 2 |
| 11. | Chemistry and Technology of Polymers | 30 | 30 Z | | | | 2 |
| 12. | Fundamentals of Solid State Physico-chemistry | 30 | 30 Z | | | | 2 |
| 13. | Contemporary Power Sources | 30 | 30 Z | | | | 2 |
| 14. | Organic Synthesis | 30 | 30 Z | | | | 2 |

Students should choose one of the lectures denoted *

Students should pass one of the profiled lectures **: Chemistry and Technology of Polymers, Contemporary Power Sources, New Materials in Chemistry, New Materials - Synthesis, Characterization and Application

Supervisor: [dr hab. Andrzej Kudelski](#)

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UNIVERSITY OF WARSAW

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**BACHELOR PROGRAM, Chemistry - 2008/2009
Sixth Semester**

E - exam, **Z** - pass/no pass with a grade
A - mandatory course, **B** - extended course
To accumulate **60 ECTS** students **have to take mandatory courses and electives.**

| Mandatory Classes | | | | | | | |
|-------------------|-----------------------------------|------------|-------------|-------------|---------|----------|-----------|
| N° | Subject | Hours | Lectures | Tutorials | Prosem. | Laborat. | ECTS |
| 1. | Bachelor's Project Laboratory | 140 | | | | 140 Z | 10 |
| 2. | Bachelor's Seminar | 30 | | | 30 Z | | 5 |
| 3. | Introduction to Crystallography A | 30 | <u>10 E</u> | <u>20 Z</u> | | | 3 |
| | Total (mandatory) | 180 | | | | | 18 |

| Electives | | | | | | | |
|-----------|--|-------|-------------|-------------|---------|-------------|------|
| N° | Subject | Hours | Lectures | Tutorials | Prosem. | Laborat. | ECTS |
| 4. | Nuclear Chemistry | 60 | <u>30 E</u> | | | <u>30 Z</u> | 4 |
| 5. | Introduction to Crystallography B | 45 | <u>15 E</u> | <u>30 Z</u> | | | 4.5 |
| 6. | Inorganic chemistry II* | 90 | <u>30 E</u> | | | <u>60 Z</u> | 6 |
| 7. | Physical Chemistry II* | 90 | <u>30 E</u> | | | <u>60 Z</u> | 6 |
| 8. | Organic Chemistry II* | 90 | <u>30 E</u> | | | <u>60 Z</u> | 6 |
| 9. | Statistical Thermodynamics* | 60 | <u>30 E</u> | <u>30 Z</u> | | | 5 |
| 10. | Group Theory in Chemistry* | 30 | <u>15 Z</u> | <u>15 Z</u> | | | 3 |
| 11. | Preconcentration and Separation Methods | 30 | <u>30 Z</u> | | | | 2 |
| 12. | Molecular modeling | 45 | <u>15 Z</u> | | | <u>30</u> | 2 |
| 13. | New Materials - Synthesis Characterization & Application | 30 | <u>30 Z</u> | | | | 2 |
| 14. | Technology of Environmental Protection | 55 | 15 Z | | | 45 Z | 4 |
| 15. | Stereochemistry | 45 | 30 E | | 15 Z | | 3 |

Students are required to choose one of the lectures and laboratories denoted *

Supervisor: [Jadwiga Skupińska](#)

Webmaster: [Adam Myśliński](#)