

PhD program in Theoretical and Physical Chemistry (2013)

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| The total minimum required number of credits: | 103 credits |
| - Coursework: | 23 credits |
| + Basic courses: | 13 credits |
| • Required: | 09 credits |
| • Elective: | 04/8 credits |
| + Advanced foreign languages for academic purposes: | 04 credits |
| + Advanced courses: | 04 credits |
| + Overview: | 02 credits |
| - Research | |
| - PhD Thesis: | 80 credits |

Available curriculum :

| No | Code | Subjects | Credits | Credit hours | | | Prerequisite |
|--------------|---------------------------|---|-----------|--------------|----------|------------|--------------|
| | | | | Lecture | Practice | Self-study | |
| I | Part 1. Coursework | | | | | | |
| I.1 | Basic courses | | 13 | | | | |
| I.1.1 | Required | | 9 | | | | |
| 1 | CHE8070 | <i>Topics of Physical Chemistry 1 - Quantum approximation method applied in chemistry</i> | 3 | 25 | 10 | 10 | |
| 2 | CHE8071 | <i>Topics of Physical Chemistry 2 - Reactions on the polymer molecules</i> | 3 | 31 | | 14 | |
| 3 | CHE8072 | <i>Topics of Physical Chemistry 3 - Kinetics and mechanism of</i> | 3 | 30 | | 15 | |

| No | Code | Subjects | Credits | Credit hours | | | Prerequisite |
|--------------|---|---|-------------|--------------|----------|------------|--------------|
| | | | | Lecture | Practice | Self-study | |
| | | <i>electrochemical reactions</i> | | | | | |
| I.1.2 | Elective | | 4/8 | | | | |
| 4 | CHE8073 | <i>Chemistry of surface</i> | 2 | 20 | | 10 | |
| 5 | CHE8074 | <i>Application of adsorption and catalysis methods in engineering for elimination of environmental pollutions</i> | 2 | 20 | | 10 | |
| 6 | CHE8075 | <i>Polymer of matrix network</i> | 2 | 20 | | 10 | |
| 7 | CHE8076 | <i>Computer application to electrochemical studies</i> | 2 | 20 | 10 | | |
| I.2 | Advanced foreign languages for academic purposes | | 4 | | | | |
| 8 | ENG8001 | <i>Advanced English for Academic Purposes</i> | 4 | | | 60 | |
| I.3 | Advanced courses | | 4/10 | | | | |
| 9 | CHE8077 | <i>Simulations method of molecular dynamics of solutions</i> | 2 | 22 | 4 | 4 | |
| 10 | CHE8078 | <i>Polymer solutions and properties)</i> | 2 | 30 | | | |
| 11 | CHE8079 | <i>Simulations for chemical processes on computer</i> | 2 | 20 | 5 | 5 | |
| 12 | CHE8080 | <i>Informatics applied theoretical chemistry</i> | 2 | 20 | 4 | 6 | |
| 13 | CHE8081 | <i>X-ray diffraction and crystal structure</i> | 2 | 24 | | 6 | |
| I.4 | Overview | | 2 | | | | |
| 14 | CHE8082 | Overview | 2 | | | 30 | |
| II | Part 2. Research (research planning, publishing ...) | | | | | | |
| III | Part 3. Doctoral Thesis | | | | | | |
| 15 | CHE9004 | Doctoral Thesis | 80 | | | | |
| | | Total | 103 | | | | |