

Study programme: **P1417 – Chemistry**Academic year: **2015**Field of study: **Physical Chemistry**Form of study: **Full-time / Combined**Stage: **1**Specialization: **EN**Number of credits: **240****Compulsory courses 1** (block status: **A**)

No. of courses: 3 credits: 60

| Dept/Crs code | Course name                        | No. of Cred. | No. of hrs/w L+S+SS | Concl. | Recom. year sem. |
|---------------|------------------------------------|--------------|---------------------|--------|------------------|
| PRF/PGS01     | Research stay                      | 30           | 0+12TR+0            | -      | W/S              |
| VCJ/PGSAJ     | English for Students of PhD        | 20           | 0+20S+0             | Con,Ex | W/S              |
| PRF/PGS00     | Management of science and research | 10           | 0+20HR+0            | Co     | W                |

**Compulsory courses 2** (block status: **B**)

Min.no.of 20 credits

| Dept/Crs code | Course name                              | No. of Cred. | No. of hrs/w L+S+SS | Concl. | Recom. year sem. |
|---------------|--|--------------|---------------------|--------|------------------|
| KFC/PGSHS     | Phys. Chemistry Aimed on Heterogen.Syst. | 20           | 20S+0+0             | Ex     | W/S              |
| KFC/PGSRM     | Phys. Chem. Aimed on the React. of Mol.  | 20           | 20S+0+0             | Ex     | W/S              |
| KFC/PGSKC     | Phys. Chemistry Aimed on Quantum Chem.   | 20           | 20S+0+0             | Ex     | W/S              |

**Note:** Choice of one course according to the dissertation topic.**Final exam** (block status: **A**)

No. of courses: 1 credits: 0

| Dept/Crs code | Course name             | No. of Cred. | No. of hrs/w L+S+SS | Concl. | Recom. year sem. |
|---------------|-------------------------|--------------|---------------------|--------|------------------|
| KFC/PGSZZ     | Final State Examination | 0            | 0+0+0               | Sdz    | W/S              |

**Compulsory options 1** (block status: **B**)

Min.no.of 40 credits

| Dept/Crs code | Course name                              | No. of Cred. | No. of hrs/w L+S+SS | Concl. | Recom. year sem. |
|---------------|--|--------------|---------------------|--------|------------------|
| KEF/PGSAE     | Instrument Physics and App. Electronics  | 20           | 20S+0+0             | Ex     | W/S              |
| KEF/PGSAN     | Applied Nanotechnology                   | 20           | 20S+0+0             | Ex     | W/S              |
| KEF/PGSEM     | Theory and Practice of Electron Microsc. | 20           | 20S+0+0             | Ex     | W/S              |
| KEF/PGSFA     | Methods of Physical Chemistry            | 20           | 20S+0+0             | Ex     | W/S              |
| KEF/PGSMM     | The Modern Microscopic Methods           | 20           | 20S+0+0             | Ex     | W/S              |
| KEF/PGSMN     | Magnetic Measurements of Nanomaterials   | 20           | 20S+0+0             | Ex     | W/S              |
| KEF/PGSMÖ     | Mössbauer Spectroscopy                   | 20           | 20S+0+0             | Ex     | W/S              |
| KEF/PGSPF     | Instrumental Physics                     | 20           | 20S+0+0             | Ex     | W/S              |
| KEF/PGSRM     | Electron and Raster Probe Microscopy     | 20           | 20S+0+0             | Ex     | W/S              |
| KEF/PGSSO     | Scanning Probe Microscopy and its Appl.  | 20           | 20S+0+0             | Ex     | W/S              |
| KEF/PGSZN     | Nanotechnology - Physical Base           | 20           | 20S+0+0             | Ex     | W/S              |
| KFC/PGSBI     | Bioinformatics                           | 20           | 20S+0+0             | Ex     | W/S              |
| KFC/PGSCF     | Chemistry and Physics of Heterogenous Sy | 20           | 20S+0+0             | Ex     | W/S              |
| KFC/PGSCK     | Experimental Methods of Chemical Kinetic | 20           | 20S+0+0             | Ex     | W/S              |
| KFC/PGSEC     | Electrochemistry                         | 20           | 20S+0+0             | Ex     | W/S              |
| KFC/PGSEK     | Exp. Methods of Study of Colloid Systems | 20           | 20S+0+0             | Ex     | W/S              |
| KFC/PGSFF     | Photochemistry and Photoelectrochemistry | 20           | 20S+0+0             | Ex     | W/S              |
| KFC/PGSFO     | Physical Organic Chemistry               | 20           | 20S+0+0             | Ex     | W/S              |

|           |  |    |         |    |     |
|-----------|--|----|---------|----|-----|
| KFC/PGSFS | Fluorescent Spectroscopy                 | 20 | 20S+0+0 | Ex | W/S |
| KFC/PGSKS | Complex Compounds in Cancer Therapy      | 20 | 20S+0+0 | Ex | W/S |
| KFC/PGSKV | Quantum Chemistry                        | 20 | 20S+0+0 | Ex | W/S |
| KFC/PGSMC | Introduction into Methods of Material    | 20 | 20S+0+0 | Ex | W/S |
| KFC/PGSMH | Phys. Chem. of Microheterogen. Systems   | 20 | 20S+0+0 | Ex | W/S |
| KFC/PGSMM | Molecular modelling                      | 20 | 20S+0+0 | Ex | W/S |
| KFC/PGSNA | Nanomaterials                            | 20 | 20S+0+0 | Ex | W/S |
| KFC/PGSNK | Structure and Dynamics of Nucleic Acids  | 20 | 20S+0+0 | Ex | W/S |
| KFC/PGSPN | Methods of Surface Tension Studies and   | 20 | 20S+0+0 | Ex | W/S |
| KFC/PGSS  | Structural Protein Bioinformatics        | 20 | 20S+0+1 | Ex | W/S |
| KFC/PGSSB | Sel. Chapters from Spectroscopy of Biom. | 20 | 20S+0+0 | Ex | W/S |
| KFC/PGSSM | Chemical constitution and Spectroscopic  | 20 | 20S+0+0 | Ex | W/S |
| KFC/PGSSP | Spectroscopic Methods                    | 20 | 20S+0+0 | Ex | W/S |
| KFC/PGSST | Statistic Thermodynamics                 | 20 | 20S+0+0 | Ex | W/S |

### Compulsory options 2 - publishing (block status: B)

Min.no.of 60 credits

| Dept/Crs code | Course name                              | No. of Cred. | No.of hrs/w L+S+SS | Concl. | Recom. year sem. |
|---------------|--|--------------|--------------------|--------|------------------|
| KFC/PGS2I     | The main author of publication with IF   | 40           | 0+0+0              | Con    | W/S              |
| KFC/PGS2R     | The main author in peer-reviewed journal | 20           | 0+0+0              | Con    | W/S              |
| KFC/PGS2S     | Co-authored publ. in journal with IF     | 10           | 0+0+0              | Con    | W/S              |
| KFC/PGS2P     | Other popular science publications       | 5            | 0+0+0              | Con    | W/S              |

**Note:** Before defending the dissertation the doctoral candidate must turn in at minimum two publications where he is the leading author. At least one of the papers has to be in a journal with IF higher than 0.

### Compulsory options 3 - scientific research and teaching activities (block status: B)

Min.no.of 45 credits

| Dept/Crs code | Course name                              | No. of Cred. | No.of hrs/w L+S+SS | Concl. | Recom. year sem. |
|---------------|--|--------------|--------------------|--------|------------------|
| KFC/PGS3T     | The thesis of the dissertation           | 15           | 0+0+0              | Con    | W/S              |
| KFC/PGS3V     | Teaching at the PU                       | 15           | 0+0+0              | Con    | W/S              |
| KFC/PGS3K     | Presentation at the conference (poster)  | 5            | 0+0+0              | Con    | W/S              |
| KFC/PGS3U     | Oral presentation at the Int. Conference | 10           | 0+0+0              | Con    | W/S              |
| KFC/PGS3P     | Project activities                       | 10           | 0+0+0              | Con    | S                |

### Optional courses (block status: C)

| Dept/Crs code | Course name                              | No. of Cred. | No.of hrs/w L+S+SS | Concl. | Recom. year sem. |
|---------------|--|--------------|--------------------|--------|------------------|
| KFC/PGSC1     | Management of Bachelor and Master Theses | 10           | 0+0+0              | Con    | W/S              |
| KFC/PGSC2     | Review of closing works                  | 5            | 0+0+0              | Con    | W/S              |
| KFC/PGSC3     | The seminary at the UP departments       | 5            | 0+0+0              | Con    | W/S              |
| KFC/PGSC4     | The popularization activities at the UP  | 5            | 0+0+0              | Con    | W/S              |
| KFC/PGSSW     | Scientific writing                       | 5            | 0+0+0              | Ex     | W/S              |