

## PhD program in Fluid Mechanics (2013)

|   |            |
|---|------------|
| The total minimum required number of credits:       | 91 credits |
| - Coursework:                                       | 21 credits |
| + Basic courses:                                    | 09 credits |
| + Advanced foreign languages for academic purposes: | 04 credits |
| + Advanced courses:                                 | 06 credits |
| + Overview:   | 02 credits |
| - Research  |            |
| - PhD Thesis:                                       | 70 credits |

### Available curriculum :

| No                        | Code  | Subjects                                      | Credits    | Credit hours |          |            | Prerequisite |
|---------------------------|---|---|------------|--------------|----------|------------|--------------|
|                           |   |   |            | Lecture      | Practice | Self-study |              |
| <b>Part I. Coursework</b> |   |   |            |              |          |            |              |
| <b>I</b>                  | <b>Basic courses</b>  |   | <b>9</b>   |              |          |            |              |
| <i>I.1</i>                | <i>Required</i>   |   | <b>6</b>   |              |          |            |              |
| 1                         | MAT8054   | Course 01                                     | 3          | 45           |          |            |              |
| 2                         | MAT8055   | Course 02                                     | 3          | 45           |          |            |              |
| <i>I.2</i>                | <i>Elective</i>   |   | <b>3/6</b> |              |          |            |              |
| 3                         | MAT8056   | Course 03                                     | 3          | 45           |          |            |              |
| 4                         | MAT8058   | Course 04                                     | 3          | 45           |          |            |              |
| <b>II</b>                 | <b>Advanced foreign languages for academic purposes</b> ( <i>choose one of languages below</i> ): |   | <b>4</b>   |              |          |            |              |
| 5                         | ENG 8001  | <i>Advanced English for Academic Purposes</i> | 4          |              |          | 60         |              |
|                           | RUS 8001  | <i>Advanced Russian For Academic Purposes</i> | 4          |              |          | 60         |              |

| No  | Code                    | Subjects  | Credits     | Credit hours |          |            | Prerequisite |
|---|-------------------------|---|-------------|--------------|----------|------------|--------------|
|   |                         |   |             | Lecture      | Practice | Self-study |              |
|   | FRE 8001                | <i>Advanced French For Academic Purposes</i>                      | 4           |              |          | 60         |              |
|   | WES 8001                | <i>Advanced General For Academic Purposes</i>                     | 4           |              |          | 60         |              |
|   | CHI 8001                | <i>Advanced Chinese For Academic Purposes</i>                     | 4           |              |          | 60         |              |
| <b>III</b>  | <b>Advanced courses</b> |   | <b>6/15</b> |              |          |            |              |
| 6   | MAT8057                 | <i>Numerical Methods in Aerodynamics</i>                          | 3           | 45           |          |            |              |
| 7   | MAT8059                 | <i>Smooth Particle Hydrodynamics Method (SPH) for Fluid Flows</i> | 3           | 45           |          |            |              |
| 8   | MAT8060                 | <i>Mesh Free Method (MFM) Applied for Hydrodynamic Problems</i>   | 3           | 45           |          |            |              |
| 9   | MAT8061                 | <i>Theory of Hydrodynamic Stability and Turbulence Fluid Flow</i> | 3           | 45           |          |            |              |
| 10  | MAT8062                 | <i>Fluid Flow in Porous Medium</i>                                | 3           | 45           |          |            |              |
| <b>IV</b>   | <b>Overview</b>         |   | <b>2</b>    |              |          |            |              |
| 11  | MAT8064                 | <i>Research Perspective Report</i>                                | 2           |              |          | 30         |              |
| <b>Part 2. Research (research planning, publishing ...)</b> |                         |   |             |              |          |            |              |
| <b>Part 3. Doctoral Thesis</b>                              |                         |   |             |              |          |            |              |
| 12  | MAT9008                 | <i>Ph.D thesis</i>  | <b>70</b>   |              |          |            |              |
|   | <b>Total</b>            |   | <b>91</b>   |              |          |            |              |