# Geophysics for natural risks and resources Year 1- Semester 1

| N. Exams | Course                                    | Semester | CFU | Teacher  |
|----------|---|----------|-----|----------|
| 1        | Solid Earth Geophysics                    | 1        | 9   | BOSCHI   |
| 2        | Applied Geophysics                        | 1        | 9   | CASSIANI |
| 3        | Mathematical physics for the Earth System | 1        | 6   | BOSCHI   |
|          | One course among:                         |          |     |          |
| 4        | Geology for Geophysics                    | 1        | 6   | OLIVETTI |
|          | Earthquake Geology and Fault Mechanics    | 1        | 6   | DI TORO  |

# Geophysics for natural risks and resources Year 1 - Semester 2

| N. Exams | Course   | Semester | CFU | TEACHER         |
|----------|--|----------|-----|-----------------|
| 5        | Electromagnetism                                       | 2        | 6   | RACCANELLI      |
| 6        | Georesources   | 2        | 6   | ZATTIN/NIMIS    |
|          | Digital data processing                                | 2        | 6   | BARONE          |
|          | One course among:                                      |          |     |                 |
|          | Geophysics for Cultural Heritage and Civil Engineering | 2        | 6   | DEIANA          |
| 7        | Numerical Methods for Geosciences                      | 2        | 6   | FACCENDA        |
|          | Petrophysics   | 2        | 6   | DI SIPIO (?)    |
|          | One course among:                                      |          |     |                 |
| 8        | Geotechnics  | 2        | 6   | DALLA SANTA (?) |
|          | Applied Hydrology                                      | 2        | 6   | D'ALPAOS        |

# Geophysics for natural risks and resources Year 1 - Semester 2

| N. Exams | Course   | Semester | CFU | TEACHER                     |
|----------|--|----------|-----|-----------------------------|
|          | One course among:                                |          |     |                             |
| 8        | Physics Data Analysis                            | 2        | 6   | LM PHYSICS OF DATA          |
|          | Management and analysis of physics datasets      | 2        | 6   | LM PHYSICS OF DATA          |
|          | Statistical Mechanics of Complex Systems         | 2        | 6   | LM Mathematical engineering |
|          | Advanced statistics for physics analysis         | 2        | 6   | LM PHYSICS OF DATA          |
|          | Numerical methods for continuous systems         | 2        | 6   | LM Mathematical engineering |
|          | Numerical methods for high performance computing | 2        | 6   | LM Mathematical engineering |

# **Geophysics for natural risks and resources Year 2 - Semester 1**

| N. Exams | Course                                   | Semester | CFU | TEACHER          |
|----------|--|----------|-----|------------------|
| 9        | Environmental and Engineering Geophysics | 1        | 9   | BOAGA            |
|          | One course among:                        |          |     |                  |
|          | Geothermics                              | 1        | 6   | GALGARO          |
| 10       | Exploration Seismology                   | 1        | 6   | LORENZO PETRONIO |
|          | ( Physics of the Atmosphere )            | 1        | 6   | BIONDI           |
|          | Free course                              | 1        | 6   |                  |

# **Geophysics for natural risks and resources Year 2 - Semester 1**

| N. Exams | Course   | Semester | CFU | TEACHER                     |
|----------|--|----------|-----|-----------------------------|
|          | One course among:  |          |     |                             |
|          | Numerical methods for the continuous system (hydrological process) | 2        | 6   | LARESE                      |
|          | Seismic response of built structures                               | 1        | 6   | DA PORTO                    |
|          | Coastal Environment under Climate Change                           | 1        | 6   | ANDREA D'ALPAOS             |
|          | Groundwater Hydrology  | 1        | 6   | MATTEO CAMPORESE            |
| 11       | High level programming   | 1        | 6   | LM PHYSICS OF DATA          |
|          | Programmable hardware devices                                      | 1        | 6   | LM Mathematical engineering |
|          | Machine Learning   | 1        | 6   | LM PHYSICS OF DATA          |
|          | Numerical methods for differential equations                       | 1        | 6   | LM Mathematical engineering |

# **Geophysics for natural risks and resources Year 2 - Semester 2**

| N. Exams | Course                | Semester | CFU | TEACHER |
|----------|-----------------------|----------|-----|---------|
| 12       | FREE COURSE TO CHOICE | 2        | 6   |         |
|          | INTERNSHIP            | 1-2      | 3   |         |
|          | FINAL EXAM (Thesis)   |          | 24  |         |
|          |                       |          |     |         |