

# Syllabus

## *Kursbeschreibung*

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| <b>Titel der Lehrveranstaltung</b>                  | Advanced geomatics and Landscape planning                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Code der Lehrveranstaltung</b>                   | 47075                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Zusätzlicher Titel der Lehrveranstaltung</b>     |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Wissenschaftlich-disziplinärer Bereich</b>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Sprache</b>                                      | Englisch                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Studiengang</b>                                  | Master in Umweltmanagement in Bergregionen                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Andere Studiengänge (gem. Lehrveranstaltung)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Dozenten/Dozentinnen</b>                         | dr. Michele Torresani,<br>Michele.Torresani@unibz.it<br><a href="https://www.unibz.it/en/faculties/agricultural-environmental-food-sciences/academic-staff/person/37414">https://www.unibz.it/en/faculties/agricultural-environmental-food-sciences/academic-staff/person/37414</a>                                                                                                                                                                        |
| <b>Wissensch. Mitarbeiter/Mitarbeiterin</b>         |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Semester</b>                                     | Zweites Semester                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Studienjahr/e</b>                                | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>KP</b>                                           | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Vorlesungsstunden</b>                            | 36                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Laboratoriumsstunden</b>                         | 24                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Stunden für individuelles Studium</b>            | 90                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Vorgesehene Sprechzeiten</b>                     | 18                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Inhaltsangabe</b>                                | The course introduces the principles, theories, methods, and decision-making processes of landscape and land-use planning, with particular reference to mountain landscapes. It examines the ecological, cultural, social, and gender dimensions of mountain landscapes, their functioning, and the interactions between natural processes, human activities, and landscape change. Students explore the concepts, objectives, methods, and instruments of |

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|                                                               | <p>landscape and land-use planning, including landscape assessment, environmental assessment, zoning, design control, stakeholder participation, and the implementation of planning strategies. Particular attention is devoted to landscape context, theories of intervention, the critical evaluation of planning alternatives, and the role of planning in balancing environmental protection, landscape quality, ecosystem services, cultural values, and sustainable territorial development.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Themen der Lehrveranstaltung</b>                           | <p>The Landscape planning module course introduces key concepts, methods and tools for landscape planning, with a particular focus on mountain and Alpine regions. Topics include landscape analysis and assessment, landscape change, governance, ecosystem services, climate change and natural hazards, land-use conflicts, participation and scenario planning. Comparative case studies and a planning workshop connect theoretical approaches with practical landscape strategies. The Advanced Geomatics module provides theoretical and practical knowledge of advanced geomatics methods for spatial and environmental analysis. It covers vector and raster data, coordinate systems and GPS, optical remote sensing using for example Sentinel-2 and Landsat imagery, drone based data acquisition, LiDAR and photogrammetry. Students learn data processing, spatial analysis and interpretation techniques, integrating multiple geospatial sources for landscape and territorial applications</p> |
| <b>Stichwörter</b>                                            | <p>Landscape Ecology, Earth Observation, Land-Use Change, Territorial Planning, Geomatics</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Empfohlene Voraussetzungen</b>                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Propädeutische Lehrveranstaltungen</b>                     | <p>Basic knowledge of environmental sciences, ecology, and human geography is recommended.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Unterrichtsform</b>                                        | <p>Theoretical and practical activities</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Anwesenheitspflicht</b>                                    | <p>Attendance is recommended</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Spezifische Bildungsziele und erwartete Lernergebnisse</b> | <p>The course aims to provide students with the theoretical foundations and practical skills required to understand, analyse, and contribute to landscape and land-use planning in mountain environments. Upon successful completion of the course, students will be able to interpret mountain landscapes as socio-ecological systems, considering their ecological, cultural, social, and gender</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

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|                                                                                           | dimensions; understand the concepts, theories, methods, and operational stages of landscape and land-use planning; analyse landscape context and evaluate planning alternatives using appropriate planning instruments, environmental assessment approaches, and participatory processes; assess the implementation of planning strategies in relation to environmental protection, landscape quality, and sustainable territorial development; and communicate planning concepts, analyses, and proposals effectively using appropriate scientific and technical terminology. |
| <b>Spezifisches Bildungsziel und erwartete Lernergebnisse (zusätzliche Informationen)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Art der Prüfung</b>                                                                    | Students will present projects based on the theoretical and practical concepts introduced during the lectures                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Bewertungskriterien</b>                                                                | Quality of the project implementation (accuracy, completeness, and technical soundness)<br>Innovation and originality of the proposed project<br>Consistency and coherence of the project with the topics covered during the course                                                                                                                                                                                                                                                                                                                                            |
| <b>Pflichtliteratur</b>                                                                   | NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Weiterführende Literatur</b>                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Weitere Informationen</b>                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Ziele für nachhaltige Entwicklung (SDGs)</b>                                           | Gesundheit und Wohlergehen, Hochwertige Bildung, Leben an Land, Nachhaltige Städte und Gemeinden, Maßnahmen zum Klimaschutz, Sauberes Wasser und Sanitär-Einrichtungen                                                                                                                                                                                                                                                                                                                                                                                                         |

## *Kursmodul*

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| <b>Titel des Bestandteils der Lehrveranstaltung</b> | Advanced geomatics     |
| <b>Code der Lehrveranstaltung</b>                   | 47075A                 |
| <b>Wissenschaftlich-disziplinärer Bereich</b>       | AGRI-04/C              |
| <b>Sprache</b>                                      | Englisch               |
| <b>Dozenten/Dozentinnen</b>                         | dr. Michele Torresani, |

|                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
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|                                             | Michele.Torresani@unibz.it<br><a href="https://www.unibz.it/en/faculties/agricultural-environmental-food-sciences/academic-staff/person/37414">https://www.unibz.it/en/faculties/agricultural-environmental-food-sciences/academic-staff/person/37414</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Wissensch. Mitarbeiter/Mitarbeiterin</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Semester</b>                             | Zweites Semester                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>KP</b>                                   | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Verantwortliche/r Dozent/in</b>          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Vorlesungsstunden</b>                    | 18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Laboratoriumsstunden</b>                 | 12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Stunden für individuelles Studium</b>    | 45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Vorgesehene Sprechzeiten</b>             | 9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Inhaltsangabe</b>                        | <p>The course introduces the principles, theories, methods, and decision-making processes of landscape and land-use planning, with particular reference to mountain landscapes. It examines the ecological, cultural, social, and gender dimensions of mountain landscapes, their functioning, and the interactions between natural processes, human activities, and landscape change. Students explore the concepts, objectives, methods, and instruments of landscape and land-use planning, including landscape assessment, environmental assessment, zoning, design control, stakeholder participation, and the implementation of planning strategies. Particular attention is devoted to landscape context, theories of intervention, the critical evaluation of planning alternatives, and the role of planning in balancing environmental protection, landscape quality, ecosystem services, cultural values, and sustainable territorial development.</p> |
| <b>Themen der Lehrveranstaltung</b>         | <p>The Advanced Geomatics module provides theoretical and practical knowledge of advanced geomatics methods for spatial and environmental analysis. It covers vector and raster data, coordinate systems and GPS, optical remote sensing using for example Sentinel-2 and Landsat imagery, drone based data acquisition, LiDAR and photogrammetry. Students learn data processing, spatial analysis and interpretation techniques, integrating multiple geospatial sources for landscape and territorial applications</p>                                                                                                                                                                                                                                                                                                                                                                                                                                         |

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| <b>Unterrichtsform</b>          | Theoretical and practical activities |
| <b>Pflichtliteratur</b>         | NA                                   |
| <b>Weiterführende Literatur</b> |                                      |

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| <b>Titel des Bestandteils der Lehrveranstaltung</b> | Landscape planning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Code der Lehrveranstaltung</b>                   | 47075B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Wissenschaftlich-disziplinärer Bereich</b>       | AGRI-03/B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Sprache</b>                                      | Englisch                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Dozenten/Dozentinnen</b>                         | dr. Michele Torresani,<br>Michele.Torresani@unibz.it<br><a href="https://www.unibz.it/en/faculties/agricultural-environmental-food-sciences/academic-staff/person/37414">https://www.unibz.it/en/faculties/agricultural-environmental-food-sciences/academic-staff/person/37414</a>                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Wissensch. Mitarbeiter/Mitarbeiterin</b>         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Semester</b>                                     | Zweites Semester                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>KP</b>                                           | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Verantwortliche/r Dozent/in</b>                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Vorlesungsstunden</b>                            | 18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Laboratoriumsstunden</b>                         | 12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Stunden für individuelles Studium</b>            | 45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Vorgesehene Sprechzeiten</b>                     | 9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Inhaltsangabe</b>                                | The course introduces the principles, theories, methods, and decision-making processes of landscape and land-use planning, with particular reference to mountain landscapes. It examines the ecological, cultural, social, and gender dimensions of mountain landscapes, their functioning, and the interactions between natural processes, human activities, and landscape change. Students explore the concepts, objectives, methods, and instruments of landscape and land-use planning, including landscape assessment, environmental assessment, zoning, design control, stakeholder participation, and the implementation of planning strategies. |

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|                                     | Particular attention is devoted to landscape context, theories of intervention, the critical evaluation of planning alternatives, and the role of planning in balancing environmental protection, landscape quality, ecosystem services, cultural values, and sustainable territorial development.                                                                                                                                                                                    |
| <b>Themen der Lehrveranstaltung</b> | The Landscape planning module course introduces key concepts, methods and tools for landscape planning, with a particular focus on mountain and Alpine regions. Topics include landscape analysis and assessment, landscape change, governance, ecosystem services, climate change and natural hazards, land-use conflicts, participation and scenario planning. Comparative case studies and a planning workshop connect theoretical approaches with practical landscape strategies. |
| <b>Unterrichtsform</b>              | Theoretical and practical activities                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Pfichtliteratur</b>              | NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Weiterführende Literatur</b>     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |