

| General information | | |
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| Academic subject | Sustainable non-food and industrial energy supply chains and processing systems | |
| Degree course | Innovation development of agrifood systems (IDEAS) | |
| Academic Year | 2021-22 | |
| European Credit Transfer and Accumulation System (ECTS) | 3 ECTS | |
| Language | English | |
| Academic calendar (starting and ending date) | 1 semester | |
| Attendance | not mandatory | |

| Professor/ Lecturer | |
|-------------------------|-------------------------------------------------------------------|
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| Department and address | Scienze Agro-ambientali e Territoriali, via Amendola 165/A - Bari |
| Virtual headquarters | "supply chains" team in MS Teams |
| Tutoring (time and day) | by appointment set by email |

| Syllabus | |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Learning Objectives | To prepare experts in biomass supply chain |
| Course prerequisites | Knowledge of principles of Mathematics and Informatics |
| Contents | Biomass for non-food applications Collection, treatments, storage of biomass Biomass mapping by Geographic Information System Geographic Information System for biomass supply chain |
| Books and bibliography | Lesson notes |
| Additional materials | www.qgis.org |

| Work schedule | | | |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|-----------------------------------------------|
| Total | Lectures | Hands on (Laboratory, working groups, seminars, field trips) | Out-of-class study hours/ Self-study hours |
| 75 | 16 | 14 | 45 |
| ECTS | | | |
| 3 | 2 | 1 | |
| Teaching strategy | | The course consists of lectures and in the realization of a GIS project | |
| Expected learning outcomes | | | |
| Knowledge and understanding on: | <ul style="list-style-type: none"> ○ Use of biomass for non-food applications ○ Geographic information system (GIS) ○ Biomass supply chain | | |
| Applying knowledge and understanding on: | <ul style="list-style-type: none"> ○ Capacity to realize a GIS project, for biomass supply chain management | | |
| Soft skills | <ul style="list-style-type: none"> ● Making informed judgments and choices ○ Ability to realizing an integrated software project | | |

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| | <ul style="list-style-type: none"> • <i>Communicating knowledge and understanding</i> <ul style="list-style-type: none"> ○ Ability to use informatics for results presentation • <i>Capacities to continue learning</i> <ul style="list-style-type: none"> ○ Ability to continue learning by consulting books, papers and WEB. |
| Assessment and feedback | |
| Methods of assessment | <i>The exam consists of an oral exam on the topics developed during the course. During the oral exam the design work, carried out by the students during the course, will be a topic of discussion.</i> |
| Evaluation criteria | <ul style="list-style-type: none"> • <i>Knowledge and understanding</i> <ul style="list-style-type: none"> ○ Use of biomass for non-food applications ○ Biomass supply chain ○ GIS software • <i>Applying knowledge and understanding</i> <ul style="list-style-type: none"> ○ to realize a GIS project on biomass supply chain • <i>Autonomy of judgment</i> <ul style="list-style-type: none"> ○ to design a biomass supply chain as a function of the different feedstocks • <i>Communication skills</i> <ul style="list-style-type: none"> ○ Ability to clearly communicate the knowledge to specialists and non-specialists • <i>Capacities to continue learning</i> <ul style="list-style-type: none"> ○ Ability to learn and deepen in a self-directed and autonomous way |
| Criteria for assessment and attribution of the final mark | <i>The mark ranges between 0 and 30/30, the exam is passed with a mark $\geq 18/30$.</i> |
| Additional information | |
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