

Natural organic matter (humus) chemistry and dynamics			
Prof./Dr.Alessandro Piccolo		(e-mail) alpiccol@unina.it (phone) 081 2539160	
Number of CFU 4	Activities Lecture room Individual reading	Lectures	12 hours
		Laboratory	(hours)
		Seminars	(hours)
		Other activities (please indicate the activity)	(hours)
<p><u>Objectives</u></p> <p>Acquisition of the fundamental knowledge on: The molecular structure and supramolecular conformation of soil humus; Processes of humus formation and humification; Sources of Humic-like substances by recycling of organic matter; Chemical, physical and biological role of humus in the environment; Compost and accelerated humification; Humic derivatives from compost; Biostimulation activity and antioxidant and antimicrobial properties of humic matter; Technologies of carbon sequestration in soils; New materials for Agriculture such as hydrogels and non-particles based on humic substances.</p> <p><u>Learning outcome</u></p> <p>Understanding the importance of humus in a modern bio-inspired sustainable agriculture. Knowledge on the role of humus of different origins as biostimulant, soil conditioner and biocide.</p> <p><u>Topics</u> (with the indication of the n of hours/topic)</p> <p>Chemical, Physical and biological role of soil humus (2 h); Molecular and conformational nature of natural organic matter (2h); Humification and stabilization of soil humus (2h); Composting process, humic-like derivatives from compost and their bioactivity (2h); Technologies of carbon sequestration in soils (2h); Humic-nbased new materials for agriculture (2h).</p> <p><u>Evaluation</u></p> <p>Oral interviews</p> <p><u>Recommended readings</u></p> <p>Recommended literature articles</p>			