Georg-August-Universität Göttingen		6 C
Universität Kassel/Witzenhausen		4 WLH
Module M.SIA.P20: Plant Nematology		
Learning outcome, core skills: Students will gain advanced insight in plant nematolog other plant pathogens, and management strategies; h on nematode sampling, processing, identification and Students having taken this module will be able to dete plant-parasitic nematodes to genus.	gy, nematode interactions with ands-on training will be provided disease evaluation ect nematode damage and identify	C/Weekly lecture hours in total: Attendance time: 60 h Self-study time: 120 h
Course: Plant Nematology (Lecture, Internship, Seminar) Contents: Introduction: History (first records, evolution, phylogeny), General function of nematodes (nutrient cycling, beneficial nematodes, parasites of plants and animals), Biology (anatomy, classification, life cycle, reproduction, feeding behaviour, parasitism strategies), Ecology (spread, population dynamics, distribution in soil, survival strategies, worldwide occurrence, interaction with other pathogens), Symptoms (aboveground/ belowground,), Plant-Nematode Interactions (feeding sites, plant defence mechanisms, nematode survival), Economic importance (quantitative/qualitative yield losses, main damaging genera, most vulnerable crops) Methodology: Sampling procedures (sampling depth, number of cores per sample, total sample volume), Sample processing for (a) cysts from soil (Fenwick can, centrifugal/ flotation, elutriation), for (b) mobile stages from soil (Baermann funnel, sieving, flotation, elutriation), for (c) mobile stages from plant material (Baermann funnel, direct preparation, mistifier), Staining of nematodes (in roots, egg masses), Scoring root damage (gall index) Nematode identification: fishing of nematodes, fixation, mounting, permanent slides, identification keys, preparation of vulval cones (cyst nematodes) and perineums (root- knot nematodes) Management: Threshold levels, Quarantine, Crop rotation (hosts, non-host-plants, trap crops, antagonistic crops, fallow), Resistance/tolerance (classical breeding, molecular approaches), Organic amendments (compost, green manure), Biological Control (antagonistic microorganisms, suppressive soils), Physical Control (heat, steam,		4 WLH
Examination: Referat (ca. 15 Minuten, Gewichtung: 50%) und entweder mündliche Prüfung (ca. 20 Minuten) oder Klausur (120 Minuten) (Gewichtung 50%)		
Admission requirements: none	Recommended previous knowledge: Basic knowledge (B.Sc. level) of soil, plant and animal sciences	

Course frequency: each winter semester; Witzenhausen	Duration: 1 Semester[s]
Number of repeat examinations permitted: twice	Recommended semester:
Maximum number of students: 15	

Additional notes and regulations:

Literature:

Perry, N.R., Moens, M. 2006: Plant Nematology, CAB International. Luc. M., Sikora, R.A., Bridge, J. 2005:
Plant parasitic nematodes in subtropical and tropical agriculture, 2nd edition. Ciancio, A., Mukerji, K.G.
2008: Integrated Management and Biocontrol of Vegetable and Grain Crops Nematodes, Springer-Verlag.
Perry, R.N., Moens, M., Starr, J.L. 2009: Root-Knot Nematodes, CAB International. Agrios, G.N. 2005:
Plant Pathology, 5th edition. Berg, R.H., Taylor, C.G. 2009: Cell Biology of Plant Nematode Parasitism.
Springer-Verlag. Ferraz, L.C.C.B., Brown, D.J.F. 2002: An Introduction to Nemtaodes: Plant Nematology, Pensoft. Weischer, B., Brown, D.J.F. 2000: An Introduction to Nematodes: General Nematology, Pensoft, Shurtleff, M.C., Averre III, C.W. 2000: Diagnosing plant diseases caused by nematodes, APS Press