Georg-August-Universität Göttingen **Universität Kassel/Witzenhausen** **Module M.SIA.P16M: Crop modelling for risk management**	6 C 4 WLH

Learning outcome, core skills: • Gain knowledge of the features of different crop modelling concepts and model families and learn to use the Agricultural Production Systems Simulator (APSIM) • Understand the basic principles of production ecology and agro-ecosystems modelling • Apply crop modelling to typical agronomic questions related to risk management strategies	**Workload:** Attendance time: 56 h Self-study time: 124 h

Course: Crop modelling for risk management (Lecture, Seminar) *Contents*: Using the agricultural production system simulator (APSIM) students will be introduced to theconcepts (potential, water-limited and nitrogen-limited production) and application options of agro-ecosystem modelling. In the first part of the lecture students will learn along guided exercises to set up differentsimulations (single season cropping, rotation, intercropping, climate change effects etc.). In the second partselected case studies are presented, which address typical agronomy questions (fertilizer management, closingyield gap, identifying suitable crop rotations).	4 WLH
Examination: Presentation (about 30 min, 30%) and Homework (max. 20 pages, 70%) M.SIA.P16M.Mp: Crop modelling for risk management **Examination requirements:** • Knowlegde of the basic principles of agro-ecosystems modelling • Working knowledge of using APSIM to investigate typical agronomic questions • Knowledge of analyzing simulated data and present it	6 C

Admission requirements: none	**Recommended previous knowledge:** Basic knowledge (B.Sc. level) of plant sciences
Language: English	**Person responsible for module:** Prof. Dr. Reimund P. Rötter
Course frequency: each summer semester; Göttingen	**Duration:** 1 semester[s]
Number of repeat examinations permitted: twice	**Recommended semester:**
Maximum number of students: 20	

Additional notes and regulations:

Literature:

Van Keulen & Wolf, eds. 1986. Modelling of agricultural production: weather, soils and crops. Simulation Monographs, Wageningen, The Netherlands