Georg-August-Universität Göttingen **Module M.iPAB.0016: Applied effective R programming in animal breeding and genetics**	3 C 2 WLH

Learning outcome, core skills: The students will be able to efficiently use the programing language R on big animal datasets and to implement automated workflows for animal data analysis. They also will be enabled to distribute their implementations to end users.	**Workload:** Attendance time: 28 h Self-study time: 62 h

Course: Applied effective R programming in animal breeding and genetics (Lecture, Exercise) *Contents*: Effective usage of the programming language R applied to animal breeding and genetics examples. This includes detailed knowledge about the use of different data types and objects in R, automation and optimization of workflows, connection to third party software. • Data input/ output • Matrix algebra in R • Effective data management • Profiling/ Benchmarking • String modifications • Parallelization • Running self-executable R scripts via the command line	2 WLH
Examination: Term paper (max. 30 pages) (max. 30 pages) **Examination prerequisites:** Regular attendance of course **Examination requirements:** The term paper must include the code; self-executable application for a predefined task with focus on efficiency and usability, short description on how the task was solved.	3 C

Admission requirements: Basic knowledge of the programming language R, for example proven by the successful participation in the modules • M.Agr.0141: Data Analysis with R • B.Agr.0375: Bioinformatik • B.Agr.0308: Biometrie or comparable modules or proofs of knowledge.	**Recommended previous knowledge:** Basic command of R
Language: English	**Person responsible for module:** Prof. Dr. Henner Simianer
Course frequency: each summer semester	**Duration:** 1 semester[s]
Number of repeat examinations permitted:	**Recommended semester:**

twice	Master: 2
Maximum number of students: 30	

Additional notes and regulations:
EMABG students will be taken preferred before all others. iPAB and M.Agr. Animal Science before others.