Georg-August-Universität
Göttingen

Modulverzeichnis

für den Promotionsstudiengang "Holzbiologie und Holztechnologie" - zu der Promotionsordnung für die Graduiertenschule Forst- und Agrarwissenschaften (GFA) (Amtliche Mitteilungen I Nr. 47/2015 S. 1402)

Module

Übersicht nach Modulgruppen

I. Fakultät für Forstwissenschaften und Waldökologie

1. Promotionsstudiengang "Holzbiologie und Holztechnologie"

a. Promotionsstudium

Es müssen Leistungen im Umfang von insgesamt wenigstens 24 C nach Maßgabe der folgenden Bestimmungen erfolgreich absolviert werden.

aa. Vertiefungsstudium

Es sind Module im Umfang von insgesamt mindestens 6 C aus mindestens zwei der drei Bereiche i), ii) und iii) erfolgreich zu absolvieren.

i. Forschungsmethoden und Laborpraktikum

Neben den aufgelisteten Promotionsmodulen können weitere Promotionsmodule dem fächerübergreifenden Lehrangebot der Universität Göttingen entnommen und im Einzelverfahren durch den Graduiertenausschuss anerkannt werden.

ii. Fachspezifische Vertiefung

Neben den aufgelisteten Promotionsmodulen können weitere Promotionsmodule dem fächerübergreifenden Lehrangebot der Universität Göttingen entnommen und im Einzelverfahren durch den Graduiertenausschuss anerkannt werden.

iii. Doktorandenkolloquium

Folgendes Modul muss erfolgreich absolviert werden:

bb. Schlüsselkompetenzen

Es müssen Module im Umfang von insgesamt mindestens 6 C aus mindestens drei der Bereiche i bis v erfolgreich absolviert werden. Die Vergabe von Anrechnungspunkten (Credits) für einzelne Angebote richtet sich nach bestehenden Modulbeschreibungen; besteht keine Angabe, erfolgt eine Festlegung durch den Betreuungsausschuss aufgrund des dokumentierten Arbeitsaufwands.

i. Selbstorganisation des Studiengangs

Mitarbeit in der Selbstorganisation des Studienganges, wie z.B. Organisation des Doktorandenkolloquiums (Zeit- und Raumplanung, Einladung von Referenten, Moderation), Mitwirkung bei der Vorbereitung einer Fachtagung, Anfängerbetreuung, Marketing für den Studiengang (Pflege der Programmwebsite, Präsentation des Programms bei Tagungen und Messen, Pflege des Kontakts zu Alumni und Verfassen von Pressemitteilungen).

ii. Lehr- und Betreuungstätigkeit

Ein Semester Lehr- oder Betreuungstätigkeit unter Anleitung.

iii. Projektmanagement und Drittmittelakquisition

Verantwortliche Teilnahme an wissenschaftlichem Projektmanagement oder an einer Drittmittelakquisition.

iv. Präsentation eigener Forschungsergebnisse

Präsentation eigener Forschungsergebnisse auf einer fachwissenschaftlichen Tagung.

v. Fremdsprachenkurse

Erfolgreiche Teilnahme an Fremdsprachenkursen, auch von externen Bildungseinrichtungen.

Georg-August-Universität Göttingen **Modul P.FORST.104: Forstbotanisches Laborpraktikum** *English title: Practical laboratory course in forest botany*	3 C 2 SWS

Lernziele/Kompetenzen: Grundlegende Methoden in der Forstbotanik	**Arbeitsaufwand:** Präsenzzeit: 28 Stunden Selbststudium: 62 Stunden

Lehrveranstaltung: Forstbotanisches Laborpraktikum (Laborpraktikum)	2 SWS
Prüfung: Protokoll (max. 30 Seiten) **Prüfungsanforderungen:** Die Studierenden erbringen den Nachweis grundlegende Methoden in der Botanik und Molekular Biologie verstanden zu haben. Des Weiteren haben sie umfassende Kenntnisse über die Hintergründe der Methoden und die Theorie hinter den Methoden.	3 C

Zugangsvoraussetzungen: keine	**Empfohlene Vorkenntnisse:** keine
Sprache: Englisch	**Modulverantwortliche[r]:** Prof. Dr. Andrea Polle
Angebotshäufigkeit: jedes Semester	**Dauer:** 1 Semester
Wiederholbarkeit: gemäß Prüfungs- und Studienordnung	**Empfohlenes Fachsemester:**
Maximale Studierendenzahl: 10	

Georg-August-Universität Göttingen **Module P.FORST.105: Practical Laboratory Course Wood Biology and Wood Technology**	3 C 2 WLH

Learning outcome, core skills: • Learning to work with chemicals and fungi in laboratory trials • Learn setting up trials • Learn to present scientific results	**Workload:** Attendance time: 28 h Self-study time: 62 h

Course: Holzbiologisch-technologisches Laborpraktikum (Practical course)	2 WLH
Examination: Written protocol (max. 20 pages) **Examination requirements:** The students must write down the design, the methods and the results during the lab course and to prepare a report in the form of a scientific paper.	3 C

Admission requirements: none	**Recommended previous knowledge:** none
Language: English	**Person responsible for module:** Prof. Dr. Holger Militz
Course frequency: each semester	**Duration:** 1 semester[s]
Number of repeat examinations permitted: cf. examination regulations	**Recommended semester:**
Maximum number of students: 10	

Georg-August-Universität Göttingen **Module P.FORST.106: Manuscript seminar**	4 C 2 WLH

Learning outcome, core skills:	**Workload:**
Writing well-structured scientific manuscripts and constructive reviews of manuscripts; Knowing the reviewing and publication process including good scientific practice. The seminar will have three parts: 1. How to write scientific papers: General advice and best practice examples for writing scientific papers, which will be directly applied to developing and improving the manuscripts of the participants; ideally, the participants complete one manuscript from start to end during the course of the seminar. 2. How to review a scientific paper Structure and properties of peer review of scientific papers; Aims and perspective of the reviewer; criteria of sound reviews; writing a review on (parts of) manuscripts 3. Good scientific practice Dos and Don'ts in scientific cooperation, publication and peer review	Attendance time: 28 h Self-study time: 92 h

Course: Manuscript seminar (Seminar)	2 WLH
Examination: Term Paper (max. 10 pages) **Examination requirements:** - writing parts of a scientific manuscript on own data in English - reviewing scientific texts and giving constructive feedback - understanding and knowing how to apply the rules of good scientific practice - writing a protocol on 1-2 seminar sessions	4 C

Admission requirements:	**Recommended previous knowledge:**
Good command of the English language, first research experiences, and sufficient data from own project to fill at least one table or one figure in a manuscript	none
Language: English	**Person responsible for module:** Prof. Dr. Kerstin Wiegand
Course frequency: each summer semester	**Duration:** 1 semester[s]
Number of repeat examinations permitted: cf. examination regulations	**Recommended semester:**
Maximum number of students: 24	

Georg-August-Universität Göttingen **Module P.FORST.107: Microbiology and mycology**	6 C 4 WLH

Learning outcome, core skills: Students learn in individually designed courses important techniques in microbiology and mycology (sterile techniques, isolation and cultivation of organisms, morphological and physiological characterization of organisms, species identification, physiological manipulation of organisms for enzyme and metabolite productions, etc.). They will be introduced into diverse techniques of microscopy of microbes and plant cells for an introduction into cytology and development of micro-organisms and microbial interactions with plant material. This includes also advanced computer programs for image analysis. Students will learn how to plan experiments, how to document data according to good scientific practice and how to analyze and evaluate results. Students are obliged to report in seminars about their results and gained knowledge including reading and discussing subject related literature and to participate in scientific discussions also on unknown subjects.	**Workload:** Attendance time: 56 h Self-study time: 124 h

Course: Microbiology and mycology (Practical course, Seminar)	4 WLH
Examination: Oral examination (approx. 20 minutes) **Examination requirements:** Students are expected to hold a power point presentation on own results with an introduction to the subject, presentation of experiments and results and conclusions with subsequent discussion with their audience.	6 C

Admission requirements: none	**Recommended previous knowledge:** none
Language: English, German	**Person responsible for module:** Prof. Dr. Ursula Kües
Course frequency: each semester	**Duration:** 1 semester[s]
Number of repeat examinations permitted: cf. examination regulations	**Recommended semester:**
Maximum number of students: not limited	

Georg-August-Universität Göttingen **Module P.FORST.108: Molecular biology and biotechnology**	6 C 4 WLH

Learning outcome, core skills: Students learn in individually designed courses modern laboratory techniques, used in molecular biology and in biotechnology (DNA technology such as cloning and sequencing, fermentation, protein isolation, product characterization and others). They will be introduced in how to plan experiments, how to document their data according to good scientific practice and how to analyze and evaluate results. This includes introduction into computer programs and databases in statistics and molecular biology (genomics, proteomics). Courses in biotechnology of wood composites include production techniques and techniques of testing products under application of actual software. Students are obliged to report in seminars about their results and gained knowledge including reading and discussing subject related literature and to participate in scientific discussions also on unknown subjects.	**Workload:** Attendance time: 56 h Self-study time: 124 h

Courses:	
1. Molecular Wood Biotechnology (Seminar)	2 WLH
2. Molecular Biology and Biotechnology (Practical course)	2 WLH
Examination: Oral Presentation (approx. 20 minutes) **Examination requirements:** Students are expected to hold a power point presentation on own results including an introduction to the subject, presentation of experiments and results and conclusions with subsequent discussion with their audience.	6 C

Admission requirements: none	**Recommended previous knowledge:** none
Language: English, German	**Person responsible for module:** Prof. Dr. Ursula Kües
Course frequency: each semester	**Duration:** 1 semester[s]
Number of repeat examinations permitted: cf. examination regulations	**Recommended semester:**
Maximum number of students: not limited	

Georg-August-Universität Göttingen **Module P.FORST.111: Wood laboratory course**	6 C 4 WLH

Learning outcome, core skills: Basically there are the following labs available: physical lab, biological lab, fungus lab, wood anatomical lab, chemical lab, testing lab for wood-based products and WPC. Although the students have a basis in certain methods, they should get basic information about other methods. The module contains several main topics on practical work in the different laboratories. Objective of the Course: The purpose of the course is to give students an understanding of the fundamentals of wood laboratory methods.	**Workload:** Attendance time: 56 h Self-study time: 124 h

Course: Wood laboratory course (Exercise)	4 WLH
Examination: Written protocol (max. 20 pages) **Examination requirements:** The students must write down the design, the methods and the results during the lab course and to prepare a report in the form of a scientific paper.	6 C

Admission requirements: none	**Recommended previous knowledge:** none
Language: English	**Person responsible for module:** Prof. Dr. Holger Militz
Course frequency: each semester	**Duration:** 6 semester[s]
Number of repeat examinations permitted: cf. examination regulations	**Recommended semester:**
Maximum number of students: 15	

Georg-August-Universität Göttingen **Module P.FORST.112: Scientific literature and you! Reading, writing, and publishing**	3 C 2 WLH

Learning outcome, core skills: Students have a full understanding of the importance of scientific literature in research and the scientific publishing process including the editorial process and the roles of editors and referees. They are able to quickly skim and extract the most important parts from any journal article, or to critique an article after more thorough reading. They are able to plan a well-structured article, essay or grant application, and to write clearly and concisely with a good logical flow of ideas. In addition, they feel more comfortable writing in English.	**Workload:** Attendance time: 28 h Self-study time: 62 h

Course: Scientific literature and you! Reading, writing, and publishing	2 WLH
Examination: Term Paper (max. 10 pages) **Examination requirements:** Active participation, completing homework assignments	3 C

Admission requirements: none	**Recommended previous knowledge:** none
Language: English	**Person responsible for module:** Prof. Dr. Holger Kreft
Course frequency: each summer semester	**Duration:** 1 semester[s]
Number of repeat examinations permitted: cf. examination regulations	**Recommended semester:**
Maximum number of students: 20	

Georg-August-Universität Göttingen **Module P.FORST.113: Competence in research integrity**	2 C 1 WLH

Learning outcome, core skills: Students will train competences for a responsible professional conduct as a scientist, and reflect on standards, problems and possible solutions to problems within the research system. They will gain a deep understanding of their rights and obligations as a scientist and on scientific principles (fairness, respect, honesty, transparency). Through active participation and discussion of case studies students get a sense for possible conflicts and can use strategies for prevention and/or solution of these.	**Workload:** Attendance time: 10 h Self-study time: 50 h

Course: Competence in research integrity (Seminar) *Contents*: Standards of research integrity for management and treatment of data, scientific publishing, authorship, mentoring und responsibilities in day-to-day research.	1 WLH
Examination: Referat (ca. 10 Minuten) mit schriftlicher Ausarbeitung (max. 10 Seiten) **Examination requirements:** Presentation and discussion of a case study in the group.	2 C

Admission requirements: none	**Recommended previous knowledge:** none
Language: English	**Person responsible for module:** Dr. Sophie Graefe
Course frequency: each summer semester	**Duration:** 1 semester[s]
Number of repeat examinations permitted: once	**Recommended semester:**
Maximum number of students: 20	

Additional notes and regulations:
After successfully completing P.FORST.113 students are not allowed to complete P.AG.0023.

Georg-August-Universität Göttingen **Module P.FORST.125: New trends in wood technology**	3 C 2 WLH

Learning outcome, core skills: Within this module the students will be involved in actual trends of wood technology related to practical implementation in wood processing companies. The aim of the module is to combine theoretical background with practical applications. Starting with an overview several persons from the wood-working industry will present new technology regarding to different fields of wood processing. This will give the students an actual knowledge and additionally the possibility to be up to date and getting in direct contact with renowned companies.	**Workload:** Attendance time: 28 h Self-study time: 62 h

Course: New trends in wood technology (Lecture)	2 WLH
Examination: Written report (max. 20 pages) **Examination requirements:** During the work in a company the students have to document the procedures and the results and have to report the facts in the form of a scientific paper including the theoretical background.	3 C

Admission requirements: none	**Recommended previous knowledge:** none
Language: English	**Person responsible for module:** Prof. Dr. Holger Militz
Course frequency: each semester	**Duration:** 1 semester[s]
Number of repeat examinations permitted: cf. examination regulations	**Recommended semester:**
Maximum number of students: 30	

Georg-August-Universität Göttingen **Modul P.FORST.155: Literaturseminar - The Journal Club**	3 C 2 SWS

Lernziele/Kompetenzen:	**Arbeitsaufwand:**
Die Studierenden treffen eine geeignete Auswahl von Literatur, lernen, wissenschaftliche Texte aufzuarbeiten, vorzustellen und zu bewerten. Sie üben ihre Diskussionsfähigkeit und Kritikfähigkeit insbesondere auch im Umgang mit anderen Kulturen. Anhand der Beispiele erfolgreicher Forschung wird das analytische Denken und die strategische Projektplanung trainiert. Positive Beispiele werden für das Schreiben eigener Veröffentlichungen gesetzt.	Präsenzzeit: 28 Stunden Selbststudium: 62 Stunden

Lehrveranstaltung: Literaturseminar - The Journal Club (Seminar)	2 SWS
Prüfung: Referat (ca. 20 min und anschl. Diskussion) **Prüfungsanforderungen:** Die Studierenden erbringen den Nachweis eine geeignete Auswahl von Literatur vorzustellen und zu bewerten. Anhand der Beispiele erfolgreicher Forschung wird das analytische Denken und die strategische Projektplanung trainiert.	3 C

Zugangsvoraussetzungen: keine	**Empfohlene Vorkenntnisse:** keine
Sprache: Englisch	**Modulverantwortliche[r]:** Prof. Dr. Andrea Polle
Angebotshäufigkeit: jedes Semester	**Dauer:** 1 Semester
Wiederholbarkeit: gemäß Prüfungs- und Studienordnung	**Empfohlenes Fachsemester:**
Maximale Studierendenzahl: 20	

Georg-August-Universität Göttingen **Module P.FORST.170: Seminar on wood science and wood technology**	3 C 2 WLH

Learning outcome, core skills:	**Workload:**
This seminar is a compulsory part of the Ph. D. programme "Wood Biology and Wood Technology" and furthermore for all interested Ph. D. students. The students have to give in minimum four presentations on wood science topics whereas two presentations deals with the theme of the own dissertation. Two presentations are free in theme. The presentations are discussed and evaluated by all attendant participants of the study and by the respective supervisor. Objective of the Course: The students are trained in scientific presentation with special regarding on quality of the slides, the speech, the scientific content.	Attendance time: 28 h Self-study time: 62 h

Course: Seminar on wood science and wood technology (Seminar)	2 WLH
Examination: Presentations (each about 20 minutes) **Examination requirements:** The candidates have to give 2 presentations about the topic of their dissertation (one at the beginning and one at the end) and 2 additional presentations about free topics related to wood or forest sciences. Content and form of the presentations as well as the time allotted for speaking are included for the evaluation.	3 C

Admission requirements: none	**Recommended previous knowledge:** none
Language: English	**Person responsible for module:** Prof. Dr. Holger Militz
Course frequency: each semester	**Duration:** 1 semester[s]
Number of repeat examinations permitted: cf. examination regulations	**Recommended semester:**
Maximum number of students: 30	