TECHNISCHE UNIVERSITÄT DRESDEN

Institute of International Forestry and Forest Products

Faculty of Forest, Geo and Hydro Sciences Department of Forest Sciences

STUDENT HANDBOOK

of the M.Sc. course Tropical Forestry and Mangement

WELCOME

Worldwide, forestry issues are increasingly on the agenda. Ongoing deforestation in most tropical countries, climate change, biodiversity conservation and the increasing demand for forest products are issues which require intensive research and development activities. Beside these, the orientation of forestry has changed from being solely state-directed to the involvement of a large number of stakeholders. This development is further fuelled through ongoing processes of globalisation and devolution. The mission of the two-year-master course, drawing from experiences gained since the year 1995, is to deal with these huge challenges in contemporary tropical forestry and the trends of future development. The continuous modification of the master program adequately qualifies the graduates to deal with complex global problems in forestry.

The Master of Science (M.Sc.) degree offered under the Master course is internationally recognized, has passed an accreditation procedure based on international quality standards. The course qualifies the graduates for joining a PhD-program. The postgraduate course aims at providing participants with the necessary skills, professional and scientific qualification to work in organisations and institutions of the tropical forestry arena. Promoting the access of non-German speaking students the working language of the course is English.

From the academic year 2007/08 onwards the modularised course is adapted to the so-called Bologna process harmonising academic studies within the European Union member states. For its excellent performance the master course has been awarded with the quality label "TOP 10 international Master's Degree Courses Made in Germany" in 2008 by the German Science Foundation and the German Academic Exchange Service (DAAD).

This handbook is intended to provide you with an overview on the M.Sc. course, including study and examination regulations, admission requirements for the M.Sc. course, structure and contents of study and description of the M.Sc. thesis. This Handbook contains a number of links that bring you directly to more specific information such as detailed descriptions for getting a scholarship. To use these links you should access the electronic version of the Handbook.

Welcome to M.Sc. Tropical Forestry and Management!

Prof. Dr. rer.silv. Jürgen Pretzsch
Head of M.Sc. Tropical Forestry and Management

Prof. Dr. rer.silv.habil. Sven Wagner
Study Dean Forestry

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1 Study and examination regulations

1.1 Study regulations

Based on § 21 of the Higher Education Act in the Free State of Saxony (Sächsisches Hochschulgesetz – SächsHG) as of 11th June 1999 (SächsGVBl. p. 293), latest amendment by Article 13 of the Act of 15th January 2006 (Sächs. GVBl. pp. 7, 8), Technische Universität Dresden issues in the form of a statute the following Study Regulations.

Contents of study regulation

§ 1
Scope

Based on the Higher Education Act of Saxony and the examination regulations, these study regulations determine goals, contents, structure and sequence of the studies for the non-consecutive Master course of Tropical Forestry and Management at the Technische Universität Dresden.

§ 2
Course objectives

(1) Based on a high academic standard the graduates are enable to: analyse the relationships between humanity and the environment in tropical and subtropical forests, to develop strategies for the management of tropical and subtropical forest ecosystems, to control the practice of forest management, and to adapt the latter to

new scientific knowledge and recent developments. They are able to work both independently and as part of a team, and can effectively communicate their knowledge. Hence, they are capable of developing and implementing scientific approaches or strategies necessary for the protection and sustainable management of forests in the tropics and subtropics.

(2) The graduates are in a position to master multiple complex tasks in their prospective profession owing to their broad theoretical and field-related specialised forestry knowledge as well as their methodical understanding from social, natural, and engineering sciences. The areas of work include the management of forestry and forest product enterprises, bilateral and multilateral forest management projects, government consultancy for the development of forest and land use, leading activities for international organisations, non-governmental organisations and authorities, forestry extension and environmental education, scientific activities in national and international forestry research and educational institutions, as well as expert work as forestry engineering consultants.

§ 3
Entry requirements

(1) Requirements for being admitted to the course include holding an above-average certificate of Higher Education of at least a BSc degree (equaling or better than 2.5) in forest sciences or a related relevant discipline such as: agriculture, horticulture, landscape and regional planning, geography, water management, or biology.

(2) An important prerequisite for this course is a good command of the English language, which has to be certified by TOEFL 550 (Computer 213) or IELTS 6.0.

(3) The examination board according to examination regulations § 18, passage 1, decides, possibly in consultation with the Foreign Academic Office (Akademisches Auslandsamt) whether the entry requirements are fulfilled, regarding the documents for the acceptance for the course (§ 3, passage 1 and 2).

§ 4
Beginning and length of the course

(1) The course will be commenced for the winter semester.

(2) The regular course length is four semesters, comprising attendance studies, independent studies and periods of guided field work, as well as the Master examination, including the Master thesis and colloquium.

§ 5
Forms of teaching and learning

(1) The subjects taught are structured by modules. In each of the modules the course contents are delivered, reinforced and deepened through lectures, seminars, workshops, exercises, practical training courses, project work, excursions and tutorials.

(2) The subject areas of the modules are introduced during the lectures, and the students are given an orientation for the further acquisition and creation of knowledge. Exercises serve the deepening of the knowledge conveyed, focusing on scientific methodologies. By way of seminars, students are guided to present their findings on selected topics. This includes independent literature search, the elaboration of a summary in writing, and presentation and discussion of the results within the seminar group. In this regard, great importance is attached to the intercultural dialogue of the participants in the seminars, as they belong to different culture groups. Project work concerns the analysis and elaboration of project elements through case studies. Practical assignments link theoretical methodology with tangible examples, and excursions further serve to inform on concrete forestry issues and their solutions in practice. Workshops serve the discursive treatment of particular issues including the exchange of experience of the participants. Tutorials are meant to support the students in approaching to the solutions of their tasks.

§ 6
Structure and performance of the course

(1) The course is based on modules. The teaching program focuses on the first three semesters. The fourth semester is utilised for the elaboration of the Master thesis and the colloquium. The collection of primary data for the Master thesis research is usually conducted in a tropical or sub-tropical country.

(2) The course is subdivided into 16 compulsory modules, of which 9 contain optional-compulsory components. In addition, one out of two optional compulsory modules has to be selected. This allows the students some choice to prioritize their academic interests.

(3) Contents and objectives of the qualification, forms of teaching and learning, requirements, frequency, effort of work as well as duration of the individual modules can be overlooked in the module descriptions.

(4) All program courses are delivered in the English language.

(5) The specifics of proper allocation of modules to the single semesters, the timeline of completion of studies within the standard course length, as well as type and length of the respective program courses are given in the curriculum enclosed.

(6) Upon proposal by the Committee on Teaching and the Curriculum (Studienkommission), the curriculum can be modified by the Faculty Council. The modified curriculum is binding for the students who are informed at the beginning of their studies in a way common to the Faculty. Concerning exceptions for sentence 2, the examination board will decide upon application.

(7) The offer of optional compulsory parts and optional compulsory modules can be supplemented by the Faculty Council upon proposal by the Committee on Teaching and the Curriculum. Additions have to be announced at the beginning of the semester in the customary way.

(8) The students will register according to the selection of their choice of optional compulsory parts within compulsory modules with optional compulsory part, in addition to the optional compulsory modules. Students are committed to enroll prior to the beginning of the respective semester. The period of enrollment is announced in a way common to the university. If the number of students having registered for an optional compulsory part or an optional compulsory module is below 5, it is at the university lecturer's discretion to decide whether the part or the module will be conducted.

§ 7
Course contents

(1) The non-consecutive Master course in Tropical Forestry and Management is more practice-oriented. Based on general basic knowledge of forest management, comprehensive knowledge is imparted about forestry and management of tropical and subtropical forests. In this context, the main emphasis is on the competition between man and forest, which is expressed through the teaching of multidisciplinary methods.

(2) The scientific-methodical and factual knowledge necessary for this purpose is conveyed over the first two semesters. The contents of the program courses refer to forest ecology, inventory and assessment of forest resources, forest plantations and agroforestry, as well as forest utilization. Optional-compulsory teaching contents are allocated to modules such as forest ecosystems, silviculture, and forest protection. Additionally there is the choice between the two modules of tropical soils, soil degradation and soil rehabilitation and management of protected areas, wildlife and tourism. The socio-economic, cultural and planning-related subjects areas are included in the modules: forest development and land use policy; economics and management of forest resources; forest culture and extension; organisation and management systems as well as project planning and evaluation.

(3) Based on the acquired knowledge, the third semester covers forest management strategies for virgin forest and plantations in the tropics as well as woody plants in urban areas of the tropics in three respective modules. The spatial and temporal integration of various management strategies is performed in the module of

integrated land use management. One module exclusively covers theoretical and methodic orientation conveying knowledge of scientific working.

§ 8
Credits

(1) ECTS credits indicate the average workload of the students as well as their individual progress in their studies. One credit is equivalent to a workload of 30 hours. As a rule 60 credits are awarded per academic year, i. e. 30 per semester. A total of 120 credits can be obtained by the program courses designated by type and length in the module descriptions, as well as by course performances and examination performances, and by independent studies, including the Master thesis and the colloquium,.

(2) Basically, credits are awarded as per module and only if the module examination had been passed. § 28 of the examination regulations is not affected by this. The module descriptions indicate how many credits can be obtained per module, and under which preconditions this is possible.

§ 9
Student advisory service

(1) The general student advisory service is rendered by the Central Student Advisory Service (Zentrale Studienberatung) of Technische Universität Dresden and touches questions of possibilities of studying, enrollment modalities and general student matters. The specialist consultancy accompanying the course work is performed by the university lecturers active in the respective course of studies and by the departmental student advisor. The specialist departmental consultancy supports the students particularly on issues such as planning of the studies and elaboration of the Master thesis.

(2) At the beginning of the third semester any student, who had not yet taken an exam has to participate in a specialist consultancy for the studies.

§ 10
Adjustment of module descriptions

(1) To adjust to modified conditions, the module descriptions can be changed in a simplified procedure within the scope of an optimal course organisation, with the exception of the categories "name of the module", "contents and qualification objectives", "modes of teaching", "preconditions for awarding of credits" as well as "credits and grades".

(2) In a simplified procedure, the Faculty Council decides on the modification of the module description upon proposal of the Committee on Teaching and the Curriculum. The modifications have to be published in a way typical to the Faculty.

§ 11
Transitional conditions

(1) The study regulations are valid starting from winter semester 2007/2008 for all the students who for the first time have begun their studies in the non-consecutive Master course Tropical Forestry and Management.

(2) Students who have begun their studies and the Master examination in the Master course Tropical Forestry prior to the coming into force of these Regulations will complete their studies in conformity with the provisions of the study regulations of Technische Universität Dresden for the Master course Tropical Forestry as of 19th September 1995

§ 12
Coming into force and publication

(1) These study regulations come into force with effect from 1st October 2007 and will be published in Technische Universität Dresden Bulletin.

Issued, based on the Senate Resolution of Technische Universität Dresden
as of 10th January 2007 and the approval by the Rectorate as of 10th January 2007

Dresden, 23rd May 2008

signed Prof. Hermann Kokenge
Rector of Technische Universität Dresden

1.2 Examination regulations

Based on § 24 of the Higher Education Act of the Free State of Saxony (Sächsisches Hochschulgesetz – SächsHG) as of 11 th June 1999 (SächsGVBl., p. 293), latest amendment by Article 13 of the law from 15 th December 2006 (SächsGVBl. p. 515, 521), Technische Universität Dresden issues in the form of a statute the following Examination Regulations.

Contents of examination regulations

Section 1: General Provisions

Section 2: Technical provisions

Section 3: Final Provisions

Section 1: General Provisions

§ 1
Standard course length

The standard course length of the non-consecutive Master course Tropical Forestry and Management comprises attendence and independent studies, periods of supervised field work, as well as the Master examination.

§ 2
Structure of examinations

The Master examination consists of module examinations as well as the Master thesis and the colloquium. A module examination completes a module and normally consists of several examination performances which accompany the course work.

§ 3
Terms and dates

(1) The Master exam should be taken within the standard course length. A Master examination not taken within 4 semesters after completion of the standard course length, is regarded as failed. A failed Master examination can be resat only once within one year. Beyond this period of time the examination is regarded as finally failed.

(2) Module examinations should be taken up to the end of the semester as indicated in the curriculum.

(3) Technische Universität Dresden ensures that the study regulations and teaching events are duly followed, and also the course and examinations as well as the Master thesis and colloquium can be taken within the stipulated time periods. The students will be informed in time about the type, number and dates of course-related and examination-related performances. The dates for writing and submitting the Master thesis as well as the colloquium will be communicated to students in advance. Regarding each module examination, the respective possibility for re-examination has to be announced to the students.

(4) In periods of maternity leave and parenting, no course-related periods are initiated, and affected students are exempted from course-related periods already underway.

§ 4
General admission requirements and admission procedures

(1) The Master examination can only be taken by that student who:

1. has enrolled in the non-consecutive Master course Tropical Forestry and Management at Technische Universität Dresden,
2. meets the qualification requirements (§ 26), and
3. has submitted a written declaration concerning § 4, passage 4 No. 3.

(2) The student has to apply to take examinations. The kind and time period for examination application are fixed by the Examination Board and announced at the beginning of each semester in a way common to the Faculty.

(3) Admission is granted to:
1. a module examination based on the first application to that examination,
2. the Master thesis based on the application for handing out the topic for the Master thesis or, in case of § 21 passage 3, sentence 5, along with the issuing of the topic, and
3. the colloquium based on the assessment of the Master thesis with at least "sufficient" (4.0).

(4) The admission can only be refused, if
1. the preconditions given in passage 1 or the procedural regulations according to passage 2 are not complied with, or
2. the documents are incomplete, or
3. the student in the same course of studies or in a related course of studies, according to the legal provisions of the Land, has either ultimately not passed the final examination, or is undergoing an examination.

(5) The Examination Board decides upon the admission. Public announcement is possible.

§ 5
Types of the examination performances

(1) Examination performances have to be accomplished in terms of:
1. Examination papers (§ 6),
2. Seminar papers and other respective written papers (§ 7),
3. Project papers (§ 8)
4. Oral examination performances (§ 9),
5. Presentations (§ 10) and/or
6. other examination performances (§ 11).

In general, written examination performances by the multiple-choice method are excluded.

(2) Course and examination performances have to be rendered in English language.

(3) If the student asserts that he or she due to a lengthy illness or a permanent physical disability or a chronic disease is not in a position to fully or partly fulfill the examination performances in the planned form, he or she will be allowed to accomplish his or her examination performances in a prolonged working period or to render similar

examination performances in another form. For this purpose he or she may be requested to submit a medical certificate, and, in cases of doubt, a certificate issued by the public health officer.

§ 6
Examination papers

(1) By the examination papers the candidate should demonstrate that he or she is in a position to solve scientific problems based on the necessary fundamental knowledge, within a limited timeframe and with restricted aids. The students may be offered the opportunity to select tasks or topics from several options.

(2) Written tests which are prerequisite to continue the studies, have generally to be evaluated by two examiners, at least in the case of the last re-examination. The grade equals to the arithmetic mean of the individual assessments. The assessment procedure should not exceed a period of four weeks.

(3) The duration of a written test should last at least 90 minutes, but not exceeding 180 minutes. The length of time provided for each written test is fixed in the module descriptions.

§ 7
Seminar papers and other respective written papers

(1) By seminar papers and other respective written papers like written report and research plan, the student should prove his or her competence in dealing with selected issues, using specialist literature and other working materials within a limited time period. Moreover, it should be verified whether he or she is able to master the basic methods of scientific working.

(2) Regarding seminar papers and other respective written papers § 6, passage 2 holds true correspondingly.

(3) Seminar papers and other respective written papers should not exceed a timeframe of 135 hours. The time period available for seminar papers is given in the module descriptions.

§ 8
Project papers

(1) Generally, by way of project work the ability for teamwork, and in particular for developing, implementing and presenting concepts is proven. In this context, the student shall demonstrate his or her competence in defining objectives based on a more comprehensive task, as well as to elaborate interdisciplinary approaches and concepts.

(2) Regarding project work, § 6, passage 2 holds true accordingly.

(3) The length of time for project work is specified in the module descriptions and should not exceed 10 weeks.

(4) With respect to a project work executed by a team, the contributions of individual members must be clearly discernible and assessable and also have to meet the requirements of § 8, passage 1.

§ 9
Oral examination performances

(1) By the oral examination, the student shall prove his or her ability of recognising the contexts existing in the subject examined and of allocating special questions to these contexts. Moreover, it is to be ascertained, whether the student has acquired the respective fundamentals adequate to the level of the course.

(2) As a rule, oral tests are conducted as individual examinations in the presence of at least two examiners (collective oral examination), or one examiner and one expert observer (§ 19).

(3) Oral examinations last, as a rule, 15 to 30 minutes.

(4) The essential points and the results of an oral examination shall be put on record. At the end of the oral examination, the result shall be communicated to the candidate.

(5) Students who wish to take the same examination at a later time are to be permitted as listeners, if there is enough space in the examination room, unless the examinee contradicts. This permit does not cover the discussion and announcement of the examination results.

§ 10
Reports

(1) By reports the student shall prove his or her ability of preparing and presenting scientific approaches or solutions to specific problems.

(2) In general, reports are assessed by the lecturer responsible for the course in which the topic of the report is assigned. § 6, passage 2, sentence 1 and 2, apply accordingly.

(3) § 9, passage 4 applies accordingly.

§ 11
Other examination performances

(1) The student shall avail himself or herself to undertake any other examination assessable by the same yardsticks and concretely referred to in the module descriptions including the requirements and possibly also the timeframe (other examination performances). The records taken during practical assignments belong to this category.

(2) For other examination performances in a written form § 6, passage 2 applies accordingly.

§ 12
Assessment of examination performances, deriving and weighting of grades, announcement of examination results

(1) The assessment for the individual examination performances is fixed by the respective examiners. To this end, the following grades are to be used:

1 = very good	an excellent performance;
2 = good	a performance considerably above the average requirements;
3 = adequate	a performance corresponding to average requirements;
4 = satisfactory	a performance despite its deficiencies still meeting the demands;
5 = unsatisfactory	a performance that no longer meets the requirements due to its considerable deficiencies.

For a differential assessment, individual grades may be raised or reduced by 0.3 to intermediate values; the grades 0.7; 4.3; 4.7 and 5.3 being excluded.

(2) The module grade is derived from the average of grades of the module examinations , which if applicable, is weighted according to the module description. Only the first decimal place is taken into account; all subsequent decimal places are cancelled without any rounding.
The average module grade reads:

up to 1.5	= very good
from 1.6 up to 2.5	= good
from 2.6 up to 3.5	= adequate
from 3.6 up to 4.0	= satisfactory
4.1 and more	= unsatisfactory

(3) Concerning the Master examination, an overall grade is derived. The overall grade of the Master examination equals to module grades according to § 27, passage 1 and the grade of the Master thesis with a sixfold weighting. The grade for module FOMT 2.5 is subject to a double-weighting. The grade of the Master thesis is composed of the assessment of the Master thesis with double weighting and the

assessment of the colloquium with single weighting. Concerning the formation of compound grades, § 2, passage 2, sentences 2 and 3 apply accordingly.

(4) The overall grade of the Master examination, according to the respective provisions, is additionally indicated as a relative grade according to the ECTS rating scale.

(5) The modalities for announcing the examination results have to be made known to the students in a way common to the Faculty.

§ 13
Absence, withdrawal, deceit, breach of regulations

(1) An examination performance is regarded as "unsatisfactory" (5.0), if the student without cogent reason misses a binding examination date or withdraws from it. The same applies if an examination performance is not accomplished within the given timeframe.

(2) The reason for the withdrawal or the absence has to be immediately communicated in writing and presented to the Examination Office in a credible way. In case of ill health, the student has to submit a medical certificate. In cases of doubt, a certificate issued by a public health officer may be demanded. Regarding the adherence of dates for the first registration for examinations, resitting of examinations, reasons for absence from examinations and adherence to elaboration periods for examination-papers, the disease of the student is taken on equal terms to the disease of a child of the student that has to be looked after mostly by that student. If any of these reasons is acknowledged, a new examination date will be fixed. In this case the already existing examination results have to be taken into account. The Examination Board decides on the permission to withdraw from an examination or acceptance of the reason given for the abstinence.

(3) If the student tries by deceit or illegal means to influence the result of the examination, the respective examination will be assessed as "unsatisfactory" (5.0). A student disturbing the proper course of the examination may be excluded from the continuation of the examination by the respective examiner or supervisor. In this case the examination is assessed as "unsatisfactory" (5.0). In severe cases the Examination Board can exclude the student from further examinations.

(4) § 13, passages 1 through 3 apply correspondingly for the prerequisites for the examination, the Master thesis and the colloquium.

§ 14
Passing and failing

(1) A module examination has been passed if the module grade is at least "satisfactory" (4.0). Once the module examination has been passed, the credits allocated to the module as per module description are obtained.

(2) The Master examination is passed, if the module examinations, according to § 27, passage 1, have been passed, and the Master thesis and colloquium have been assessed with at least "satisfactory" (4.0).

(3) If the student has failed one module examination or if the Master thesis or the colloquium have been rated lower than "satisfactory" (4.0), the student is informed about the modalities including the timeframe for resitting the respective examination.

(4) If the student has failed the Master exam, upon application and submission of the respective documents as well as certificate of deregistration from the university he or she will be issued a document verifying the taken examination components and the assessments and if applicable, the missing examination components which is conclusive of the fact that the Master examination has not been passed.

§ 15
Free attempt

(1) If the admission requirements are fulfilled, the module examinations can be taken prior to the timeframe specified in these regulations. In this case a failed module examination is regarded as not having taken place (free attempt). Examination results that were assessed at least with "satisfactory" (4.0), can be taken into account in a a new examination procedure.

(2) Upon application by the student in cases referring to passage 1, sentence 1, module examinations or examination performances, which were rated with at least "satisfactory" (4.0), can be resat once at the next regular examination date for improvement of the grade. In these cases the better grade counts.

(3) In addition to § 3, passage 4, periods of interruption of the course due to a lengthy disease of the student, child care mainly by the student, as well as studies abroad are not counted when applying for the free attempt regulation.

§ 16
Resitting of module examinations

(1) Failed module examinations can be resat within one year after completion of the first examination attempt. After termination of this period the exams are regarded as ultimately failed.

(2) A second re-examination can only be conducted in particularly substantiated exceptional cases at the next possible examination date. A respective application with a detailed substantiation has to be submitted in writing to the Examination Board within a period of four weeks after announcement of the failing of the first re-examination.

(3) The re-examination of a failed module examination, consisting of several examination performances, comprises only those examination performances that were not assessed with at least "satisfactory" (4.0).

(4) The re-examination of a passed module examination is not permitted, apart from the case regulated under § 15, passage 2. Failed attempts at other universities or comparable colleges in the Federal Republic of Germany have to be acknowledged.

§ 17
Acknowledging of course periods, course performances and examination results

(1) Course lengths, course performances and examination results in a course of studies that is commensurate with the non-consecutive Master course Tropical Forestry and Management are acknowledged without any test for equivalence, if having been accomplished at a university or college of equal status in the Federal Republic of Germany.

(2) Course lengths, course performances and examination performances in courses of studies, not referring to passage 1, are acknowledged, if equivalency is given. Course lengths, course performances and examination performances are equivalent, if there is essential congruency as to their contents, scope and requirements in the non-consecutive Master course Tropical Forestry and Management at Technische Universität Dresden. In this context, no schematic comparison, but an overall consideration and an overall assessment have to be made. Concerning the acknowledgement of course lengths, course performances and examination performances, accomplished outside the Federal Republic of Germany, the equivalence agreements approved by the Rectors' Conference and the Education Ministers' Conference as well as verbal agreements within the framework of university partnerships agreements have to be taken into account.

(3) Concerning course lengths, course performances and examination performances in correspondence studies nationally acknowledged, as well as concerning multimedia aided course performances and examination performances, § 17, passages 1 and 2 apply respectively; moreover, passage 2 also applies for course lengths, course performances and examination performances at other educational institutions, in particular at state-owned or state-acknowledged professional academies as well as at colleges, schools of engineering, officer training colleges of the former German Democratic Republic.

(4) If course and examination performances are acknowledged, the grades are to be transferred – as far as the grading systems are comparable – and to be involved in the calculation of the overall grades. In the case of incomparable grading systems the annotation "passed" has to be made, those assessments are, however, excluded from the further calculation of grades. Designating the acknowledgment on the certificate is allowed.

(5) If passages 1 through 3 are fulfilled, there is the right for acknowledgement. Acknowledging of course lengths, course performances and examination performances that were achieved in the Federal Republic of Germany, takes place officially. The student has to submit the documents and certificates required for the respective acknowledgment. The acknowledgement of course and examination performances engranted by the Examination Board.

§ 18
Examination Board

(1) For the non-consecutive Master course "Tropical Forestry and Management" an Examination Board is established for conducting and organising the examinations as well as other tasks assigned due to the Examination Regulations. The Examination Board consists of four university lecturers, one scientist and one student. With the exception of the student member, the time in office is three years; for the student member one year.

(2) The Faculty Council of the Faculty of Forest, Geo and Hydro Sciences appoints the chairman, his deputy and the other members and their deputies, while the student members are nominated upon proposal of the student body. As a rule, the chairman manages the Examination Board.

(3) The Examination Board supervises the adherence of the paragraphs of the Examination Regulations. On a regular basis, this body reports on the development of examination and course periods including the actual time required for elaborating the Master thesis, as well as on the distribution of module grades and overall grades to the Faculty. The report has to be disclosed by Technische Universität Dresden in proper manner. The Examination Board makes suggestions for the reform of the Examination Regulations, the study regulations, the module description and the curriculum.

(4) About burdening decisions the student concerned has to be informed in writing, including substantiation and instruction on the right to appeal. The Examination Board, in the capacity of examination authority, takes in due course decisions about appeals and issues the appeal notifications.

(5) The members of the Examination Board are entitled to attend the examinations and the colloquium.

(6) The members of the Examination Board and their deputies are subject to professional discretion. In case they are not working in the public service sector, the chairman has to commit them to discretion.

(7) Based on the decisions of the Examination Board, the Examination Office organises the examinations and manages the examination files.

§ 19
Examiners and observers

(1) University lectures and other persons authorised as examiners by the regional state law, are appointed examiners, who, unless cogent reasons require call for a deviation, should have performed independent teaching activities at an institution of higher learning. Exclusively, persons appointed as observers are those who have successfully passed the respective Master examination or at least a comparable examination.

(2) For the Master thesis the student can propose the supervisor and the examiners for oral examinations as well as for the colloquium. The proposal, however, does not imply any legitimate right to demand this.

(3) The students are to be informed about the names of the examiners in due course.

(4) § 18, passage 6 is correspondingly valid for the examiners and the observers.

§ 20
Purpose of the Master examination

To pass the Master examination constitutes the professional qualification attained by this course of studies. By the Master examination it is ascertained whether the student, based on the previous studies, has acquired the reinforcing and profound specialist knowledge and abilities, on the basis of which the specialist and interdisciplinary scientific requirements can be fulfilled in the field of activity intended by the student, and on the basis of which the student comprehends the conditions required for implementing the specific knowledge in the field.

§ 21
Purpose, assigning, submitting, assessment and repetition of the Master thesis and colloquium

(1) The Master thesis is to demonstrate the student's ability to independently deal with issues of the course subject on the basis of scientific methods within a limited timeframe.

(2) The Master thesis can be supervised by a professor or another person authorized as an examiner according to the Saxon Higher Education Act, provided that this person is employed at the Faculty of Forest, Geo and Hydro Sciences at Technische Universität Dresden. If the Master thesis is to be supervised by a person authorized as examiner but working elsewhere, the chairman of the Examination Board must agree.

(3) The topic for the Master thesis is assigned via the Examination Board. The topic and the time of its issuance need to be registered. The student's wishes regarding the topic are taken into account. Upon application by the student, the Examination Board prompts that the topic of the Master thesis is assigned in time. The topic will be issued latest by the beginning of the semester succeeding the last module examination.

(4) The topic can be returned only once and only within two months after having been assigned. However, retuning a topic when repeating the Master thesis, is only allowed, if the student had not previously returned his topic during his first Master thesis.

(5) The Master thesis can also be produced by teamwork, provided that the individual contributions of the students involved are discernible and assessable, based on indicating sections, page numbers and other objective criteria, facilitating an unambiguous distinction, and provided that it meets the requirements laid down in § 21, passage 1.

(6) The Master thesis has to be written in English language and promptly submitted to the Examination Office in 3 typed and bound copies; the date of handing in has to be put on record. When handing in the Master thesis the student has to ensure in writing – in the case of group work the respective portion of the thesis being clearly designated – that the thesis is authentic and that no other than the sources and auxiliaries indicated were used.

(7) The Master thesis has to be assessed by two examiners independently according to § 12, passage 1, with one of them being the supervisor of the Master thesis. The assessment procedure is not to exceed a period of four weeks.

(8) The assessment of the Master thesis results from the mean of the two grades given by the examiners. If in the case of acceptance of the thesis the assessments by the examiners deviate by more than two grades, the average will count, provided that the two examiners agree. Otherwise, the Examination Board will organise to obtain another expert opinion; in this case the assessment of the thesis is based on the mean obtained from the three expert opinions. § 12, passage 2, sentences 2 and 3 apply respectively.

(9) If an examiner has assessed the Master thesis at least with "satisfactory" (4.0) or better, and the other with "unsatisfactory" (5.0), the examination board organises another expert opinion, which decides about acceptance or refusal of the Master

thesis. If the thesis is accepted, it is assessed by the average of the expert opinions voting for acceptance. § 12, passage 2, sentence 2 and 3 apply respectively.

(10) Given an assessment lower than "satisfactory" (4.0), the Master thesis can be repeated once within a year.

(11) The student has to defend the Master thesis during a public colloquium in the presence of the thesis supervisor, who acts as examiner and one observer. Other examiners can be appointed. § 21, passage 10 as well as § 9, passage 4 and § 12, passage 1 apply respectively.

§ 22
Certificate and Master Certificate

(1) Immediately after having passed the Master examination, preferably within a period four weeks, the student will obtain a certificate of the Master examination. The module assessments according to § 27, passage 1, the topic of the Master thesis, its grade and supervisor, as well as the overall grade enter the certificate of the Master examination. Upon application by the student, the results of additional module examinations and the time period for specific studies required up to completion of the Master examination can be added as a supplement to the certificate, and if allowed by the legal framework likewise the grades of the respective examination year (score, rank). The assessments of the individual examination performances appear on a supplementary sheet added to the certificate.

(2) Along with the certificate of Master examination the student will receive the Master certificate, indicating the date of the certificate. This document confers the Master degree. The Master certificate is signed by the rector and by the chairman of the Examination Board and it is provided with the Seal of Technische Universität Dresden. Additionally, the student will be given translated version of the certificates in English.

(3) The date referring to the last examination performance according to § 14, passage 2 appears on the certificate. It is signed by the Dean and the Chairman of the Examination Board, and provided with the seal of Technische Universität Dresden.

(4) Technische Universität Dresden issues a Diploma Supplement (DS) according to the "Diploma Supplement Model" of the European Union/Council of Europe/UNESCO. As a description of the national educational system (DS, passage 8) the text agreed between the Education Ministers' Conference (KMK) and Rectors' Conference (HRK) has to be used in the respective version.

§ 23
Invalidity of the Master examination

(1) If the student had cheated during an examination and if this fact becomes known only after the certificate was handed over, the assessment of the examination performance can be changed according to § 13, passage 3. If necessary, the module examination can be declared as "unsatisfactory" (5.0) and the Master examination as "failed". The same applies for the Master thesis and the Colloquium.

(2) If the preconditions for taking a module examination were not fulfilled, without the intention of the student to cheat, and if this fact becomes known only after handing over of the certificate, this deficiency is remedied by recognizing the module examination as passed. If the student deliberately on a non-legal basis has undertaken an examination, the module examination can be declared as "unsatisfactory" (5.0) and the Master examination as "failed". The same applies to the Master thesis as well as the colloquium.

(3) Prior to a decision, the student has to be granted the right of hearing.

(4) The incorrect certificate has to be withdrawn and, if appropriate, a new one issued. Along with the incorrect certificate, also the Master certificate and the Diploma Supplement are withdrawn, if the Master examination is declared as "failed" due to deception. A decision according to passage 1 and passage 2 is no longer possible after expiry of a period of five years starting from the date of issuing of the certificate.

§ 24
Inspecting of the examination records

Within one year upon conclusion of the examination procedure, upon application the student is allowed to inspect the examination papers and the expert reports relating to it, including the minutes.

Section 2: Technical provisions

§ 25
Course length, structure of the course and tuition hours

(1) The standard course length according to § 1 covers for 4 semesters.

(2) The course is based on modules and is finalised by the Master thesis and the colloquium.

(3) By the successful completion of the course as many as 120 credits are obtained in 17 modules including the Master thesis and the colloquium. The course comprises

teaching units of the compulsory and optional compulsory part, with a maximum of 72 hours/week per one semester.

§ 26
Specialist requirements for the Master examination

(1) Only those students who have passed all module examinations are permitted to undertake the Master thesis.

§ 27
Subject-matter, type and scope of the Master examination

(1) The Master examination comprises all module examinations of the compulsory part, modules of the compulsory part with optional compulsory components and those of the selected optional-compulsory modules as well as the Master Thesis with the Colloquium.

(2) The following modules are offered:

1. Modules of the compulsory part:
   a) Forest ecology
   b) Forest related development and land use policy
   c) Inventory and assessment of forest resources
   d) Forest culture and extension
   e) Forest plantations and agroforestry
   f) Forest utilization
   g) Project planning and evaluation

2. Modules of the compulsory part with optional compulsory components
   a) Forest ecosystems, silviculture and forest protection
   b) Economics and management of forest resources
   c) Organisation and management systems
   d) Complex thematic seminars
   e) Management systems in natural forest of the tropics
   f) Management systems in forest plantations in the tropics
   g) Urban tree management in the tropics
   h) Integrated land use management in the landscape
   i) Scientific methods of work and research plan

3. Modules of the optional compulsory section
   a) Tropical soils, soil degradation and rehabilitation
   b) Management of protected areas, wildlife and tourism,

of which one has to be selected.

(4) The teaching programmes referring to the modules and the required examination performances, the type and form of them, are defined in the module descriptions. Unless otherwise regulated in the module descriptions, the subject-matter of the examination performances regards the contents of the respective teaching events.

§ 28
Time for elaborating the Master thesis, and the colloquium

(1) The time available for elaborating the Master thesis is 5 months, this corresponds to 27 credits. Topic, task setting and scope of the Master thesis have to be delimited by the supervisor in such a way that the term for elaborating the Master thesis can be adhered to. In single cases and upon a substantiated application, the Examination Board can extend the allowable time in exceptional situations to a maximum of 13 weeks, with the number of credits remaining unaffected by this.

(2) The colloquium lasts for 60 minutes, 3 credits are obtained.

§ 29
Master degree

If the Master examination has been passed, the University degree Master of Science, abbreviated M.Sc., is conferred.

Section 3: Final Provisions

§ 30
Transitional provisions

(1) The examination regulations will apply for all students who, starting from winter semester 2007/08, will begin their studies in the non-consecutive Master course Tropical Forestry and Management.

(2) Students who started their studies and the Master examination in the Master course Tropical Forestry prior to the coming into force of these Regulations complete the Master examination according to the provisions of the examination regulations for the Master course Tropical Forestry and Management of Technische Universität Dresden as of 19th September 1995, with the longest period comprising four semesters after the completion of their standard course length. About exceptional cases, the Examination Board will decide upon application.

§31
Coming into force and publication

These examination regulations will come into force with effect from 1st October 2007 and will be published in the bulletins of Technische Univesität Dresden.
Issued by virtue of the Senate Resolution of Technische Universität Dresden as of 10th January 2007 and the permission by the Rectorate (collegial executive) as of 9th October 2007

Dresden, 23rd May 2008

Rector
of Technische Universität Dresden

signed Prof. Hermann Kokenge

2 Admission requirement for the MSc course

2.1 General admission requirements

The study regulations of the Master course Tropical Forestry and Management constitute the basis for admission. The admission requirements are regulated in § 3 of the study regulations. The most essential precondition is a university degree representing above-average performances of an academic qualification in forestry or related fields. The German assessment (equal to or better than 2.5) is applied to marking scales from other countries equivalently.With regard to the related fields the examination board decides upon the admission on an individual basis.

Technische Universität Dresden has set upper enrollment limit at 20 students for the academic year 2008. The selection of students is based on academic merits as demonstrated by certificates.

60 percent of the fixed capacity are reserved for foreign students, which currently are recruited mainly by the DAAD and the SUTROFOR scholarship programm. The respective selection procedures for the DAAD and the SUTROFOR scholarship holders are described in chapter 2.2 and 2.3. The selection is based on high quality standards. The number of applications from which candidates are selected was around 70 in case of DAAD and more than 500 in case of SUTROFOR in the recent years.

Courses start every year in October (winter term).

2.2 Admission requirements for DAAD candidates

2.2.1 The admission

The complete application must contain:

(1) standard application form can be downloaded from
www.forst.tu-dresden.de/Inter/

(2) statement of purpose of the application (motivation)

(3) curriculum vitae

(4) research proposal

(5) school-leaving certificate and university degree certificate

(6) two reference letters from senior academics (original letters or officially certified copies)

(7) two recent photographs

(8) academic transcript

(9) English language proficiency certificate (TOEFL, IELTS)

(10) Students submit, one year before the beginning of the course, their application either to German Embassy by 30th August, or to DAAD office with deadline 30th September, or to the Institute not later than 30th October.

2.2.2 Selection criteria

The selection follows DAAD criteria. A committee composed of Technische Universität Dresden staff members, DAAD representantives and Technische Universität Dresden International office representantives is responsible for the selection. The selection is based on multiple criteria. Beside the academic performance in the graduate studies, which has to be at least very good, experience and prospects in the current occupation, the quality and relevance of the research proposal, reference letters and command in English language are taken into account. The DAAD programme focuses mainly on development orientation. Thus staff members of universities do not represent the primary focus group for DAAD scholarships.

2.3 Admission requirements for SUTROFOR candidates

2.3.1 Generalities

SUTROFOR (Sustainable Tropical Forestry) is a world-class programme, in scope of the Erasmus Mundus scholarship, which aims at preparing qualified graduates to deal with the complex aspects of contemporary tropical forestry. The SUTROFOR programme provides you with a single entry-point access to top-level and up-to-date tropical forestry teaching. The programme has been jointly developed and delivered by a five-university consortium consisting of

- University of Copenhagen, Faculty of Life Sciences, (previously The Royal Veterinary and Agricultural University KVL), Centre for Forest, Landscape and Planning, Copenhagen (Denmark)

- Wales University, School of the Environment and Natural Resources, Bangor (UK)

- Dresden University of Technology, Institute of International Forestry and Forest Products, Tharandt (Germany)

- Agro Paris Tech, Institute of Forestry, Agricultural and Environmental Engineering.

- University of Padova, College of Agriculture, Padova (Italy)

The MSc course consists of a first year of study in one of three institutions: Bangor, Copenhagen or Dresden. All five SUTROFOR institutions including Montpellier and Padova offer the second year. Students cannot complete first and second year at the same institution.

The choice of first year institution is made at the time of application. The final choice of second year institution is done in the month of December in the first year.

2.3.2 The selection process – in chronological order

1. The programme is announced and marketed. This includes a full description of the study programme at the consortium homepage www.sutrofor.net, including course description, individual module description, learning outcomes for both first and second years, mobility schemes and track options, the partner universities, language requirements, diplomas and degrees awarded, tuition fees, admission criteria, the selection procedure, information about grants and scholarships, and an overview of key dates.

2. The application form can be downloaded from www.sutrofor.net or obtained by writing to sutrofor@kvl.dk The form includes 12 parts (Personal Details, Study Plans, Language Proficiency, Academic Qualifications, Curriculum Vitae and Employment Information, References, Financial Information, Survey, Checklist, Other Information, Declaration and Signature, and Reference Form).

3. Two application deadlines: for third-country nationals (1 February) and EU/EEA-EFTA nationals (1 June). Applications must be received by deadline.

4. Applications should be in English. One hard copy incl. all required material. Application form can be sent to sutrofor@kvl.dk to indicate submission.

5. Students submit applications centrally to SUTROFOR Secretariat.

6. Acknowledgement of receipt by email directly to each applicant.

7. The top 60 eligible applications and supporting material is scanned and filed at the SUTROFOR CampusNet site (found at www.uk.kvl.dk) accessible to the SUTROFOR Commission members.

8. Administratively check of eligibility (all compulsory material must have been submitted) done by KVL Registrar's office. Must be done before mid-February/Mid-June.

9. The eligibility criteria (that must by respected by an applicant if her application is to be evaluated according to the selection criteria below) are:
a. Respect of application deadline
b. Recognition of home institution having awarded the first degree
c. Statement of motivation included

d. Official certified transcripts included
e. CV included
f. Two signed letters of recommendation included
g. Language proficiency documentation for non-native speakers included
h. Copy of passport included

10. For applicants applying for an Erasmus Mundus scholarship, the following eligibility criteria will be assessed (they are all included in the application form):
a. third-country national[1]
b. not a resident of the EU, EEA-EFTA or accession countries
c. has not carried out their main activity (studies, work, etc.) in any EU, EEA-EFTA or accession country for more than a total of 12 months over the last five years

11. Eligible applications are checked and confirmed by the SUTROFOR Co-ordinator and the KVL Registrar's Office.

12. Eligible applicants are evaluated according to the selection criteria. Evaluation is done by the KVL Registrar's Office in collaboration with the SUTROFOR Co-ordinator and invited faculty members. Evaluators sign proof of absence of conflict of interest.

13. Applicants not meeting the minimum requirement for a criterion are rejected. Full evaluation is thus done only for all applicants meeting all minimum requirements.

14. Details of the selection criteria are provided below.

15. Use of the selection criteria allows ranking of all accepted students. Preparation of Action 2 lists – checked against the additionality, nationality and home institution principles. Complete before SUTROFOR Commission meetings in February and June.

16. The SUTROFOR Commission, which includes one representative from each of the participating universities, meets in mid-February and mid-June to review the top 60 fully evaluated applications and select students. Results of the assessment are available to the Commission prior to the meeting through the CampusNet site. This is the finalisation of assessment results. Decision is by consensus or majority vote when necessary. Minutes are prepared and signed. They include a statement on absence of conflict of interest.

17. In connection to the February deadline, the following is done:
a. Eligible students are entered into the Executive agency student database. Action 2 is submitted for the 28 February deadline.
b. SUTROFOR awaits the Executive Agency decision on scholarships. After receiving official notification from the Executive Agency, the SUTROFOR Secretariat informs applicants: emails and snailmails to accepted students, snailmail to rejected students. Very good students who are not awarded a scholarship may be

[1] Third-country nationals are from outside the EU, the EEA-EFTA states (Iceland, Liechtenstein and Norway) and candidate countries for accession to the European Union (Bulgaria, Romania, Turkey).

conditionally accepted. The decision on scholarships is communicated to applicants no later than 15 May/when confirmation is received from the Executive Agency.
c. Accepted students are requested to transfer the €100 confirmation fee (to be deducted from the tuition fee) to SUTROFOR and confirm their acceptance within two weeks.
d. Accepted students who cannot participate (do not confirm their participation) are replaced with students from the reserve lists. Same procedure as above for reserve lists (€100 and confirmation).
e. The Executive Agency is informed of replacement of students from reserve lists.

18. In connection to the June deadline, the following is done:
a. Accepted students are informed via email and snailmail no later than 15 July.
b. Accepted students are requested to transfer the €100 confirmation fee (to be deducted from the tuition fee) to SUTROFOR and confirm their acceptance within two weeks.

19. Universities are informed as soon as possible of students who have been accepted by SUTROFOR and the university specific evaluation and enrolment procedures are activated. As SUTROFOR eligibility and selection criteria respect all partner universities' requirements, this should not be problematic.

20. Information of all accepted students is done in the same way. SUTROFOR emails scanned acceptance letters as does each university; original letters are mailed with priority mail (to be used for visa application).

21. All accepted and confirmed students are entered into the SUTROFOR Student Database.

22. Assessments, along with all scanned original applications, are achieved electronically on the SUTROFOR CampusNet site until five years after the graduation of each student.

23. Final up-date of the Executive Agency student database.

2.3.3 The selection criteria

Each eligible applicant is assessed according to five criteria: academic potential, language skills, recommendations, past relevant working experiences, and personal motivation. The material used for assessment is, respectively: quality of the first degree, language proficiency documentation, letter of recommendation, CV and letter of motivation.

Each criteria is assessed using a scale of 1-5 (5 = excellent, 4 = very good, 3 = good, 2 = average, 1 = poor). Evaluation of an eligible application stops if a criterion is assessed at less than 3.

Criteria are weighted as specified in the Table below. The main emphasis is on the applicant's academic excellence. In case of many applicants with the same ranking, the following prioritised secondary selection criteria are applied: gender, age, provenance and preferred mobility track. If, for instance, 90% of accepted applicants are male, a female applicant with an equal ranking score is listed above other male applicants with the same score.

Criteria	**Weight (%)**	**Min. rank required**	**Rank (1-5)**
Academic excellence	60	3	
Language skills	10	3	
Recommendation	10	3	
Past work experiences	10	3	
Personal motivation	10	3	

3 Structure and contents of study

3.1 Overview of modules

1 st Semester Wi/So	Forest Ecology 1.1 (5 ECTS)	Forest related Develop-ment and Land Use Policy 1.2 (5 ECTS)	Inventory and Assessment of Forest Resources 1.3 (5 ECTS)	Forest Culture and Extension 1.4 (5 ECTS)	Forest Plantations and Agro-forestry 1.5 (5 ECTS)	Forest Utilization 1.6 (5 ECTS)

2 nd Semester So	Forest Ecosystems, Silviculture and Forest Protection 1.7 (5 ECTS)	Economics and Management of Forest Resources 1.8 (5 ECTS)	Organisation and Management Systems 1.9 (5 ECTS)	Project Planning and Evaluation 1.10 (5 ECTS)	Tropical Soils, Soil Degradation and Rehabilitation 1.11A (5 ECTS)	Managemen t of Protected Areas, Wildlife and Tourism 1.11B (5 ECTS)	Complex Thematic Seminars 1.12 (5 ECTS)

3 rd Semester Wi/So	Management Systems in Natural Forest of the Tropics 2.1 (5 ECTS)	Management Systems in Forest Plantations of the Tropics 2.2 (5 ECTS)	Urban Tree Management in the Tropics 2.3 (5 ECTS)	Integrated Land use Management at Landscape Scale 2.4 (5 ECTS)	Scientific Working Methods and Research Plan 2.5 (10 ECTS)

4 th Semester So	Master thesis and colloquium 2.6 (30 ECTS)

Compulsory Optional Compulsory

3.2 Structure of modules

1st semester

FOMT 1.1 *Forest ecology*	**Compulsory (100%)** Lecture - Structure and functions of terrestrial systems - Climate and tropical ecosystems - Biodiversity and ecosystem development Seminar - Dynamic equilibrium in forest ecosystems - Possibilities and limits of tropical ecosystem interferences - Approaches for eco-technologies Exercise - Analysis and evaluation of interferences in tropical ecosystems
FOMT 1.2 *Forest development and land use policy*	**Compulsory (100%)** Lecture - Forest-related development processes - Stakeholder analysis and international forest policy processes - Application of forest policy instruments in the tropics Seminar - Country and region specific forest policies - Forest sector integration and development in the tropics - Application of forest policy instruments
FOMT 1.3 *Inventory and assessment of forest resources*	**Compulsory (100%)** Lecture - Experimental plot techniques - Modeling of forest growth and yield - Methods of remote sensing and GIS Exercise - Use of remote sensing data - Monitoring of land use - Identifying land cover change Practical - Methods for tree measuring - Methods for forest growth modeling

FOMT 1.4 *Forest culture and extension*	**Compulsory (100%)** Lecture - Cultural ecology and ethnology - Traditional forest use systems and local knowledge - Paradigms, systems and methods of extension Workshop - Philosophical discourse about environmental ethics - Application of social science based methods Seminar - Cultural aspects of the man-forest relationship - Allpication of extension approaches - Changes in the traditional forest use
FOMT 1,5 *Forest plantations and agroforestry*	**Compulsory (100%)** Lecture - Silviculture for forest plantations - Integrated pest management - Multifunctional agroforestry systems Seminar - Silvicultural stages for forest plantations - Forest plantations protection operations - Analysis and evaluation of agroforestry systems -
FOMT 1.6 *Forest utilization*	**Compulsory (100%)** Lecture - Tropical timber characterization - Harvesting processes for forest products - Utilization of Non-timber forest products Seminar - Technological processes for forest utilization - Refinement of forest products - NTFPs and sustainable forest management Practical/Exercise - Identification of tropical timber - Determination of possible wood uses

2nd semester

FOMT 1.7 *Forest ecosystems, silviculture, forest protection*	**Compulsory (60%)**	**Optional compulsory (40%)**
	Lecture - Tropical forest formations - Concept of sustainability for natural forest management - Threats to sustainability using the example of Fauna - Major tropical silvicultural systems Exercise - Standard silvicultural systems for natural forest management - Standard silvicultural systems and damage control cuttings Excursion - High, middle and low forest management options - Insect pests, population ecology and regulation options	***Optional compulsory A*** Lecture - Silvicultural system development for tropical moist forests - Silvicultural system development for tropical dry forests Seminar - Analysis and evaluation of tropical forest ecosystems - Selection and completion of silvicultural systems - Silvicultural planning, monitoring and assessment ***Optional compulsory B*** Lecture - Herbivores between plants and predators - Insect pests of natural forests or indigenous tree species Seminar - Biology, ecology and management of pest species - Biotic risks and regulation possibilities - Integrated pest management in forest ecosystems

	Compulsory (60%)	Optional compulsory A and B (40%)
FOMT 1.8 *Economics and management of forest resources*	Lecture - Investment principles in forestry - Theory of interest - Strategic planning in forestry - Forest management plan, certification and controlling Seminar - Investment analysis in forestry - Principles of forest management planning - Implementation of certification Exercise - Economic analysis of forest practice - Models for forest management planning	***Optional compulsory A*** Lecture - Economic analysis for provision and production of environmental services - Cost sharing and political trading - Combination of timber and environmental forestry Seminar - Cost calculation - Provision of forest area ***Optional compulsory B*** Lecture - Continuous forest inventory - GIS-databases in forest enterprises - SDSS as instruments of management Seminar - Sampling systems - Information systems

	Compulsory (60%)	Optional compulsory A and B (40%)
FOMT 1.9 *Organisation and management systems*	Lecture - Introduction to organisation and management systems - Typology and analysis of forest organisations - SWOT analysis Seminar - Private and collective forest organisations - Farming systems approach - Forest administration and management Exercise - Assessment of management systems - Methods for result interpretation	***Optional compulsory A*** Lecture - Subsistence-oriented and mixed enterprises in the tropics - Methods of process assessment - Synthesis comparative analysis of forest organisation Seminar - Farming systems analysis - Analysis of traditional small forestry enterprises ***Optional compulsory B*** Lecture - Large forestry enterprises and forest based industrial enterprises in the tropics - Methods of process assessment - Ideal forest enterprises Seminar - Organisational change and socio-economic development of forest enterprises

FOMT 1.10 *Project planning and evaluation*	**Compulsory (100%)** Lecture - Planning theory - Project cycle - Methods of project planning, implementation, monitoring and impact assessment - Project work - Empirical social research methods - Project impact assessment approaches - Certification and quality standards Exercise - Economic feasibility studies - Project planning exercise using the example of the German agency for technical cooperation (GTZ) -
FOMT 1.11	**Optional compulsory (100%)** **Selection between module FOMT 1.11A and FOMT 1.11B**
FOMT 1.11A *Tropical soils, soil degradation and rehabilitation*	Lecture - Soil-forming substrates and processes - Soil information systems - Soil degradation and rehabilitation methods Project work / Practical - Soil assessment and evaluation - Region- and site-specific rehabilitation measures in the tropics Excursion - Soil classification and soil degradation - Approaches for soil rehabilitation
FOMT 1.11B *Management of protected areas, wildlife and tourism*	**Optional compulsory (100%)** Lecture - Planning and management of protected areas in the tropics - Wildlife management - Linkages of nature protection, wildlife management and tourism Seminar - Protected areas and nature conservation concept - Preservation of biological diversity - Interactions between tourism and ecology Excursion - National park management - Biosphere reserve management

	Compulsory (50%)	Optional compulsory (50%)
FOMT 1.12 *Complex thematic Seminars*	Lecture - Introduction to the actual catalogue of topics - Theoretical framework of the subject area - Principles of scientific publication Seminar - Introductory discussions about the subject area Turorial - Methodological field-specific introduction - Thematic group exchange of ideas - Synthesis of specific subjects into a theory driven framework	Seminar - Specific subjects according to the actual catalogue of topics

3rd semester

	Compulsory (40%)	Optional compulsory (60%)
FOMT 2.1 *Management systems of natural forests in the tropics*	Lecture - Management attributes for tropical natural forests - Forest management plan - Silvicultural system elaboration Exercise - Silvicultural system formulation - Impact assessment analysis	***Optional compulsory A*** Lecture - Product (service) chain conception - Harvesting system elaboration - Economical and financial aspects of natural forest management Seminar - Analysis and evaluation of product (service) chains - Harvesting systems for sustainable natural forest management - Use of forestry economics Exercise - Harvesting system evaluation - Cost – benefit analysis ***Optional compulsory B*** Lecture - Preservation of biological diversity - Forest protection and integrated fire management - Maintenance of biological diversity through silvicultural operations Seminar - Biological diversity conservation and natural forest management - Integrated fire management - Forest habitat management Exercise - Comparative analysis of biological diversity - Fire control measures

FOMT 2.2 *Management systems of forest plantations in the tropics*	**Compulsory (40%)**	**Optional compulsory (60%)**
	Lecture - Strategic and operational planning for forest plantations - Forest plantations monitoring, growth and yield regulation - Feasibility assessment Exercise - Integrated resource inventories - Production system regulations	***Optional compulsory A*** Lecture - Silvicultural system elaboration (slow-growing plantations) - Integrated fire and pest management - Economical and financial aspects of forest plantation management Seminar - Silvicultural operations - Fire and pest control - Investment calculation Exercise - Forest plantation technology - Feasibility study - - ***Optional compulsory B*** Lecture - Silvicultural system elaboration (fast-growing plantations) - Integrated fire and pest management - Technology and economics Seminar - Silvicultural operations - Fire and pest control - Tree improvement Exercise - Forest plantation technology - Assessment of forest plantations

	Compulsory (40%)	Optional compulsory A and B (60%)
FOMT 2.3 *Urban tree Management in the tropics*	Lecture - Introduction to urban trees - Effects of urban vegetation - Urban tree management Seminar - Environmental aspects - Pathological aspects Exercise - Importance, effects and problems of urban tree management	***Optional compulsory A*** Lecture - Vitality assessment for urban trees - Maintenance of urban trees - Methods for urban tree control Seminar - Body language of urban trees - Maintenance of urban trees - Tree care Exercise - Vitality assessment and urban tree evaluation - Protection of urban trees ***Optional compulsory B*** Lecture - Functions, values and uses of urban vegetation - Urban tree establishment - Networks of governance Seminar - Planning of urban tree management - Monitoring systems Exercise - Planning and management principles for urban vegetation

	Compulsory (60%)	Optional compulsory (40%)
FOMT 2.4 *Integrated land use management at landscape level*	Lecture - Concepts and methodological principles of land use planning - Regional planning - Land evaluation and land use planning - Introduction to relevant land use types and productive sectors (for instance agricultural, forestry, water, nature conservation, etc.) - Stakeholder analysis Workshop - Discussion of elaborated sector concepts - Strategy development of integrated land use management (iterative planning process)	Practical - Analysis of relevant land use types (A to N sectors) - Elaboration of provisional sector concepts (A to N sectors) - Identification of land use synergies and competition (A to N sectors) - Preparation of the consultation process (*Workshop*) for conflict resolution

FOMT 2.5 *Scientific working methods and research plan*	**Compulsory (60%)**	**Optional compulsory (40%)**
	Lecture - Theory of science - Action research methods - Empirical social research methods - Manpower research methods - Silvicultural research methods - Mathematical statistics application - Acquisition and review of scientific literature Exercise - Social research methods - Technological research methods - Silvicultural research methods - Mathematical statistics application - Scientific literature study	Research plan - Thematic field selection - Drawing up the research plan - Discussion of the research plan in the plenary session - Refinement of the research plan - Theoretical and methodological confirmation of the research plan (Mentoring process)

4th semester

FOMT 2.6 *Master thesis and colloquium*	**Optional compulsory (100%)**
	Master thesis - Original research focussing on the tropics/subtropics

3.3 Module manual

Code	Title
FOMT 1.1	**Forest Ecology**
FOMT 1.2	**Forest related Development and Land Use Policy**
FOMT 1.3	**Inventory and Assessment of Forest Resources**
FOMT 1.4	**Forest Culture and Extension**
FOMT 1.5	**Forest Plantations and Agroforestry**
FOMT 1.6	**Forest Utilization**
FOMT 1.7	**Forest Ecosystems, Silviculture and Forest Protection**
FOMT 1.8	**Economics and Management of Forest Resources**
FOMT 1.9	**Organisation and Management Systems**
FOMT 1.10	**Project Planning and Evaluation**
FOMT 1.11A	**Tropical Soils, Soil Degradation and Rehabilitation**
FOMT 1.11B	**Management of Protected Areas, Wildlife and Tourism**
FOMT 1.12	**Complex Thematic Seminars**
FOMT 2.1	**Management Systems in Natural Forest of the Tropics**
FOMT 2.2	**Management Systems in Forest Plantations of the Tropics**
FOMT 2.3	**Urban Tree Management in the Tropics**
FOMT 2.4	**Integrated Land use Management at Landscape Scale**
FOMT 2.5	**Scientific Working Methods and Research Plan**

Code	Title	Responsible University Lecturer
FOMT 1.1	Forest Ecology	Prof. Dr. E. Gert Dudel
Contents and objectives of qualification	Contents: Physical-chemical determinants of productivity and regeneration of terrestrial systems: Mechanisms, process control and effect of environmental factors on individuals and communities as well as availability and use of resources, in particular water, nutrients, salinity and climatic factors in the tropics; Climate: Water and radiation as controlling factors of ecological processes; spatial-temporal variability of climatic factors and their interrelationship with ecosystems in the tropics; Forest as source and sink of atmospheric transports: Changes of the water and energy balances resulting from alterations in use, and effects on the climate; Causality of biological diversity: Evolution and co-evolution of the populations and communities, demographic processes and interactions, regulation in food webs. Ecosystem functions and their dynamics: Development of ecosystems (successions); biodiversity and ecosystem functions; Spatial patterns and functional diversity of landscapes. Objectives of qualification: The student understands the causality and consequences of rapidly changing dynamic-equilibriums in the forest, with the inclusion of the interfaces to atmosphere and hydrosphere. The student is in a position to analyze and evaluate possibilities and limits of control, utilization as well as regeneration (restoration, remediation) of tropical ecosystems and also for the protection of species. By means of scientific knowledge of bio- geo-ecology, the student understands measures, technologies, instructions and the like in the applied subjects. He or she can identify causal-analytical problems for protection, sustainable use and regeneration of tropical forest ecosystems and landscapes. The student has acquired the requisite scientific and management skills to direct his or her activities appropriately and develop respective ecological-scientific knowledge for the management of forest ecosystems and their competition with other forms of land use.	
Kind of teaching	The module comprises: 2.0 hrs/wk Lecture 1.0 hrs/wk Seminar 1.0 hrs/wk Exercise	
Requirements	Fundamentals in biology, physics, chemistry and mathematics. Literature: Townsend, C.R.; Begon, M.; Harper, J.L. (2005) Essentials in ecology. Blackwell Scientific. Townsend, C.R.; Begon, M.; Harper, J.L. (2005) Essentials in ecology. Blackwell Scientific. Kimmins, J.P. (2004) Forest ecology. Prentice Hall. Aber, J.D.; Melillo, J.M. (2001) Terrestrial ecosystems. Academic Press San Diego, London, Burlington. Beeby, A.; Brennan, A.-M. (2004) First ecology. Oxford University Press	
Modality	This module is compulsory in the non-consecutive Master course, Tropical Forestry and Management.	

Requirements for credits	The credits are acquired when the module examination has been passed. The module examination consists of one seminar paper (30 hours) and an oral examination (20 minutes).
Credits and grades	Five credits can be acquired in the module. The module grade results from the weighted grades of the seminar paper (50%) and the oral examination (50%).
Frequency	In each academic year the module is offered for the winter semester.
Effort	The effort required comprises 150 working hours, of which 60 h are designated as contact hours.
Timeframe	The module covers one semester.
Literature	Larcher, W. (2002) Physiological plant ecology. Eco-physiology and stress physiology of functional groups. Springer Berlin. Schulze, E.-D. (2005) Plant ecology. Springer Berlin. Oke, T.R. (1987) Boundary layer climates. Methuen.

Code	**Title**	**Responsible University Lecturer**
FOMT 1.2	Forest related Development and Land Use Policy	Prof. Dr. J. Pretzsch
Contents and objectives of qualification	Contents: The emphasis is placed on models and theories for explaining socio-economic, land use, environmental and particularly forest-related developmental processes. The explanatory concepts involve historical, sociological, economic and cultural aspects with the special focus on tropical regions, on the basis of which development-oriented potentials of control are identified. The development models are the framework for policy and process analyses in tropical countries. They focus on forest, landscape and environment, as well as on the detailed analysis of forest-political and conservation-political instruments such as international conventions, financing instruments, land reforms, land law, environmental law and forest law, taxes and other transfer services, state resources benefits, loan systems and decentralization. Moreover, processes of institutional changes and the involvement of various stakeholders are elucidated, and their effects assessed. The political and institutional framework of development is projected onto the various levels. Selected forest-and nature conservation-political instruments are allocated to these levels which are explained by examples. Objectives of qualification: The student learns to diagnose and evaluate the development of social systems as to their integration in ecosystems as well as their historical dimensions. He or she is able to independently apply instruments for sociological analysis as well as explanatory models. The student recognizes political structures and their mode of functioning at different levels and their interconnectedness in areas of policy development, land use, forestry, environmental protection and nature conservation. The student is able to plan the application of political instruments and to assess their	

	effects.
Kind of teaching	The module comprises: 2.0 hrs/wk Lecture 2.0 hrs/wk Seminar
Requirements	Literature: Todaro, M.P. (1995) Economics for a developing world. An introduction to principles, problems and policies for development. 3rd ed., London and New York. Cubbage, F.W.; O´Laughlin, J.; Bulock III, Ch.S. (1993) Forest resource policy. New York John Wiley & Sons INC. Douglas, J. (1993) A reappraisal of forestry development in developing countries. The Hague, Boston, Lancaster (extracts). Chambers, R. (1995) Rural development. Putting the last first. Longman, 246 pp. FAO (1993) Guidelines for land-use planning. FAO Development Series 1, Rome, 96 pp.
Modality	The Module is compulsory in the non-consecutive Master course, Tropical Forestry and Management.
Requirements for credits	The credits are acquired after passing the module examination. The module examination consists of a seminar paper (30 hours) and an oral examination (20 minutes).
Credits and grades	Five credits can be acquired in the module. The module grade is derived from the weighted grades for the seminar paper (33%) and the oral examination (67%).
Frequency	In each academic year the module is offered for the winter semester.
Effort	The amount of work comprises 150 working hours, of which 60 are contact hours.
Timeframe	The module covers one semester.
Literature	Amler, B. (1994) Landnutzungsplanung für Entwicklungsländer. Schriftenreihe des Fachbereichs Landschaftsentwicklung der TU Berlin, No. 85, TU Berlin, 378 S. North, D.C. (1991) Institutions. Journal of Economic Perspectives, Vol. 5, Number 1, p. 97-112. Pretzsch, J. (2005): Forest related rural livelihood strategies in national and global development. Forests, Trees and Livelihoods, Great Britain, Vol. 15, pp. 115-117. Hunt, D. (1989) Economic theories of development. An analysis of competing paradigms. New York et al. Thirlwall, A.P. (1994) Growth and development. 5th Ed., London et al. Dalal-Clayton, B.; Dent, D.; Dubois, O. (2003) Rural planning in developing countries – supporting natural resource management and sustainable livelihoods. Earthscan Publications Ltd London, 226 pp. FAO (1995) Planning for sustainable use of land resources: Towards a new approach. FAO Land and Water Bulletin 2 Rome. Simon, D. (ed.) (1990) Third World regional development. A re-appraisal. Paul Chapman Publishing Ltd London. 268 pp. Bass, S.M.J. (2003) International commitments, implementation and cooperation. Paper submitted to the XII World Congress 2003, Quebec, Canada.

	Glück, P.; Rayner, J.; Cashore, B. (2005) Changes in the governance of forest resources. In: G. Mery; Alfaro, R.; Kanninen, M.; Lobovikov, M. (eds.) Forests in the global balance – changing paradigms. IUFRO World Series Volume 17. Helsinki, p., 51-74.

Code	**Title**	**Responsible university lecturer**
FOMT 1.3	Inventory and Assessment of Forest Resources	Prof. Dr. H. Röhle
Contents and objectives of qualification	Contents: Instruments and methods of tree mensuration are explained theoretically and with relevance to practice. The methodological steps by which experimental plots are established and analyzed are explained and demonstrated. The acquired methodological knowledge can be applied to develop special experimental plots. The fundamentals for modelling of forest growth and timber yield are conveyed, and a simulation model is introduced. Biometrical methods relevant for forestry are explained and substantiated with exemplary datasets. The student becomes familiar with the methods of remote sensing and GIS. Methods of data acquisition, using aeroplane and satellite aided sensor systems are particularly dealt with, as well as analytical methods based on the interpretation of aerial photographs and digital satellite image classification. Project-relevant studies of the use of various remote sensing data and the integration of the results into GIS are presented. Computer exercises support the studies. Objectives of qualification: The student learns how to operate and to use important tree measuring devices, as well as the methodology for obtaining and analysing forest growth and yield data. The student gets familiar with modelling of forest growth and yield, and is able to apply this knowledge. The student has special knowledge of selected methods of biometrics including the principles of growth and yield modelling relating to trees/forests of the tropics. The student learns the operational use of analogue and digital remote sensing data based on modern methods of aerial and satellite image analysis. He or she is capable of applying with relevance to GIS the acquired methods regarding the handling of image data and multi-thematic geo-data to the monitoring of land use and land cover change.	
Kind of teaching	The module comprises: 1.5 hrs/wk Lecture 1.0 hrs/wk Exercise 1.5 hrs/wk Practical	
Requirements	Mathematical-statistical fundamentals Literature: Loetsch, F.; Zöhrer, F.; Haller, K.E. (1973) Forest inventory – vol. 2. BLV Verlagsgesellschaft. München, Bern, Wien. Bettinger, P.; Wing, M.G. (2003) Geographic information systems – applications in forestry and natural resources management. McGraw-Hill, New York. Lillesand, T.M.; Kiefer, R.W.; Chipman, J.W. (2004) Remote sensing and image interpretation. 5th ed. Wiley, New York.	

Modality	The module is compulsory in the non-consecutive Master course, Tropical Forestry and Management.
Requirements for credits	The credits are acquired, if the module examination has been passed. The module examination consists of a written report (15 hours) and a written examination (90 minutes).
Credits and grades	5 credits can be acquired in the module. The module grade is derived from the weighted grades of both the written report regarding the analysis of forest growth and yield data of an experimental plot including the statistical calculations and biometrical methods (67%), and the written examination on remote sensing methods (33%).
Frequency	In each academic year the module is offered for the winter semester.
Effort	The effort required covers 150 working hours, of which 60 are contact hours.
Timeframe	The module covers one semester.
Literature	Cochran, W.G. (1977) Sampling techniques. 3rd ed. John Wiley & Sons. Wulder, M.A.; Franklin, S.E. (eds.) (2003) Remote sensing for forest environments – concepts and case studies. Kluwer. Dordrecht, Boston, London. Zar, J.H. (1996) Biostatistical analysis. Prentice Hall, New Jersey. 3rd ed

Code	Title	Responsible university lecturer
FOMT 1.4	Forest Culture and Extension	Prof. Dr. J. Pretzsch
Contents and objectives of qualification	Contents: The theoretical fundamentals of cultural ecology and ethnology are conveyed for understanding the interrelationships between man and forest. Particular emphasis is placed on the analysis of factors that influence the activities of stakeholders in tropical forests and woodlands. Besides the traditional knowledge of the forest, above all, the meaning of local value-related concepts and spiritual and religious concepts are dealt with. The student is given a survey of traditional forest use in the tropics as well as of the colonial and post-colonial influences and changes. Concerning the area of forest policy, Analyses of forest utilization under the influence of globalisation form an interface to the area of forest policies. Abstract patterns of explanation are substantiated by case studies. An understanding of the respective knowledge systems is the foundation for explaining the local learning behaviour and innovation. On this basis, systems of extension are introduced. The methods of forest extension like individual extension, networks and participatory approaches are explained and students are trained in them accordingly. As an interface to the module Project Planning and Evaluation limits and possibilities for the initiation of technological change are discussed. Objectives of qualification: The student is capable of analysing, understanding and modelling the cultural assets, which are important for the man-forest relationship. He or she can differentiate between the most important and influential factors including the local value-related concepts and the spiritual and religious ideals according to the various cultural zones of the tropical countries. The student knows the factors influencing human behaviour and learning, and is able to control processes within the intercultural context and at international level. He or she is able to prepare alternative strategies for extension, to assess them as to their effects and to implement them. Owing to practical training the student has developed a high degree of social and intercultural sensitivity. Hence, the student is able to independently involve cultural factors in conceptions of sustainable forestry.	
Kind of teaching	The module comprises: 1.0 hrs/wk Lecture 1.0 hrs/wk Workshop 2.0 hrs/wk Seminar	
Requirements	Literature: Reij, C.; Waters-Bayer, A. (2001) Farmer Innovation in Africa – A source of inspiration for agricultural development. Earthscan, London. Rogers, E.M. (2003) Diffusion of innovations. 5th edition, Free Press, New York. van den Ban, A.W.; Hawkins, H.S. (1996) Agricultural Extension, 2nd ed. Blackwell Science, Oxford; pp. 42-49; 59-85. Ember, C.R.; Ember, M. (2004) Cultural Anthropology. 11th ed., New Jersey.	
Modality	The module is compulsory in the non-consecutive Master course,	

	Tropical Forestry and Management.
Requirements for credits	The credits are obtained, once the student has passed the module examination. The module examination consists of a seminar paper (30 hours) and an oral examination (20 minutes).
Credits and grades	5 credits can be obtained in the module. The module grade is derived from the weighted grades for the seminar paper (50%) and the oral examination (50%).
Frequency	In each academic year the module is offered for the winter semester.
Effort	The effort comprises 150 working hours, of which 60 are contact hours.
Timeframe	The module covers one semester.
Literature	Ingold, T. (2000) The perception of the environment. Essays on livelihood, dwelling and skill. Routledge Taylor & Francis Group, London and New York. Roger, S. G. (2004) The sacred earth. Religion, Nature, Environment. 2nd edition, Routledge, New York and London. CIP-UPWARD (2003) Farmer Field Schools: Emerging issues and challenges. A compilation of papers presented during the International Learning Workshop on Farmer Field Schools in Yogyakarta, Indonesia in 21-25 October 2005. Los Baños. Engel, P.G.H. (1997) The social organisation of innovation: a focus on stakeholder interaction. Royal Tropical Institute, Amsterdam, Netherlands. Hanneman, R. A.; Riddle, M. (2005) Introduction to social network methods. Riverside, CA. Kilduff, M.; Tsai, W. (2005) Social networks and organizations. Sage, London. Leeuwis, C.; van den Ban, A. (2004) Communication for rural innovation: Rethinking agricultural extension. 3rd ed., Blackwell Science, Oxford; pp.22-48. Monge, P. R.; Contractor, N.S. (2003) Theories of communication networks. Oxford University Press, Oxford. Pretzsch, J. (2003) Cultural approaches to forestry: Germany and Europe. Contribution to the Conference "The nature and culture of forests: Implications of diversity for sustainability, trade and certification" from 10.-13.5.2001- in Vancouver/Canada. Scarborough, V.; Killough, S.; Johnson, D.A.; Farrington J. (1997) Farmer-led extension: concept and practices. Intermediate Technology Publications on behalf of the Overseas Development Institute, London.

Code	Title	Responsible university lecturer
FOMT 1.5	Forest Plantations and Agroforestry	PD Dr. W. Große
Contents and objectives of qualification	Contents: The module is concerned with silviculture for forest plantations and agroforestry in the tropics and subtropics. Selected types of forest plantations in the tropics and subtropics with objective targets relevant for the future are introduced. Important silvicultural stages for forest plantations development are initially defined, followed by their detailed explanation. In this context, regionally important genera and tree species are taken into consideration. Principles and methods for the reconnaissance of afforestation areas for the planning of plantation projects and planting of trees are introduced. The sustainable management of forest plantations is dealt with, based on case studies. This is connected with the study of integrated forest protection. Criteria for the classification of agroforestry systems are explained and a synopsis is given regarding their geographical distribution and assessment. The process of the development of agroforestry systems and innovative technologies is dealt with, referring to examples. Particular attention is put on the multifunctional tasks and performances of the woody plant components in agroforestry systems and their contribution to rural development. Objectives of qualification: The student is able to purposefully develop and implement the establishment and treatment of forest plantations in the tropics. He or she is able to conduct the reconnaissance of afforestation areas, plan silvicultural and forest protection operations for the establishment and treatment of forest plantations, properly select tree species and provenances, refer to purposeful operations and technologies of silviculture and to take integrated forest production into consideration. The student also applies the acquired knowledge for planting of woody plants in agroforestry. He or she is able to analyse, classify and evaluate agroforestry systems with reference to components, and to further develop innovative technologies relying on on-station and on-farm research.	
Kind of teaching	The module comprises: 2.0 hrs/wk Lecture 2.0 hrs/wk Seminar	
Requirements	Literature: Evans, J.; Turnbull, J.W. (2004) Plantation forestry in the tropics. 3rd edition. Oxford University Press, Oxford, 467 pp. Speight, M.R.; Wylie, F.R. (2001) Insect pests in tropical forestry. CAB International, Wallingford, Oxon, 307 pp. Huxley, P. (1999) Tropical agroforestry. Blackwell Science, Oxford, 371 pp. Nair, P.K.R. (1993) An introduction to agroforestry. Kluwer Academic Publishers, Dordrecht, 499 pp. Young, A. (1997) Agroforestry for soil management. 2nd ed. ICRAF, CAB INTERNATIONAL Oxon, New York 320 pp.	
Modality	The module is compulsory in the non-consecutive Master course, Tropical Forestry and Management.	

Requirements for credits	The credits are obtained after passing the module examination. The examination consists of a seminar paper (30 hours) and an oral examination (20 minutes).
Credits and grades	5 credits can be obtained in the module. The module grade is derived from the weighted grades for the seminar paper (50 %) and the oral examination (50 %).
Frequency	The module is offered in each academic year for the winter semester.
Effort	The effort comprises 150 working hours, of which 60 are contact hours.
Timeframe	The module covers one semester.
Literature	Boyle, J.R.; Winjum, J.K.; Kavanagh, K.; Jensen, E.C. (1999) Planted Forests: Contribution to the quest for sustainable societies. Forestry Sciences 56, Kluwer Academic Publishers, Dordrecht. Watt, A.D.; Stork, N.E.; Hunter, M.D. (1997) Forests and insects. Chapman & Hall, London, 406 pp. Alavalapati, R.R.; Mercer, D.E. (2004) Valuing agroforestry systems – methods and applications. Kluwer Academic Publishers, Dordrecht, 314 pp. Ashton, M.S.; Montagnini, M.F.F. (1999) The silvicultural basis for agroforestry systems. CRC Press, Washington, D.C., 271 pp. Nair, P.K.R.; Rao, M.R.; Buck, L.E. (2004) New vistas in agroforestry – a compendium for the 1st World congress of Agroforestry, 2004. Kluwer Academic Publishers, Dordrecht, 480 pp.

Code	Title	Responsible university lecturer
FOMT 1.6	Forest Utilization	Prof. Dr. J. Erler
Contents and objectives of qualification	Contents: The technological process of harvesting and utilizing numerous timber and non-timber forest products is focussed on. The process of harvest is explained as socio-economic and technological system. Approaches for the production of forest produce, transportation as well as conducting and controlling of forestry operations are dealt with. Tropical timber is identified based on its anatomical structure; physical and mechanical properties are characterised, and possible wood uses are derived. Technologies for wood processing and utilization are introduced. Non-Timber Forest Products (NTFPs) are described, referring to groups of utilization. Accessing and utilizing selected NTFPs from natural forests and forest plantations are discussed and preconditions are defined for their domestication. The utilization of forest is referred to systems of sustainable forest management. Objectives of qualification: The student has acquired special knowledge concerning the principles and systematic approaches of harvest, storage and processing of timber as well as non-timber products obtained from natural forests and forest plantations in the tropics. He or she is able to identify tropical timber species and has a proper command of non-timber products of tropical forests including their potential for sustainable forest management. The student is capable of independently developing and controlling technological processes for forest utilization and management as well as for refinement of products, with main emphases on the areas of the use of machinery and devices for forestry operations, timber harvest, wood processing, optimization of timber utilization.	
Kind of teaching	The module comprises: 1.5 hrs/wk Lecture 1.5 hrs/wk Seminar 1.0 hrs/wk Practical/exercise	
Requirements	Literature: Staaf, K.A.; Wiksten, N.A. (1984) Tree harvesting techniques. Nijhoff Dordrecht. Conway, S. (1976) Logging practices. Miller. Haygreen, J.G.; Bowyer, J.L. (1996) Forest products and wood science. Iowa State University Press/Ames. Bues, C.T.; König, J. (n.a.) Bilingual reader "Tropical Wood Science and Roundwood Utilization". Tharandt. FAO (1995 – 2006): Non-wood forest products. FAO Technical Papers, Rome.	
Modality	The module is compulsory in the non-consecutive Master course, Tropical Forestry and Management.	
Requirements for credits	The credits are obtained, once the student has passed the module examination. The examination consists of an optional choice between either seminar paper (20 hours) or written report (20 hours), and a compulsory oral examination (20 minutes).	

Credits and grades	5 credits can be obtained in the module. The module grade is derived from the weighted grades of the seminar paper or the written report (33%) and the oral examination (67%).
Frequency	The module is offered in each academic year for the winter semester.
Effort	The effort comprises 150 working hours, of which 60 are contact hours.
Timeframe	The module covers one semester.
Literature	Hakkila P. (1989) Utilization of residual forest biomass. Springer Berlin. Tsoumis, G. (1991) Science and technology of wood. Van Nordstrand Reinhold, New York. Balick, M.J.; Elisabetsky, E.; Laird, S.A. (eds.) (1996) Medicinal resources of the tropical forest. Biodiversity and its importance to human health. Columbia University Press, New York, 440 pp. FAO (1994 – 2006): Non-wood News. Information Bulletins, Rome. Langenheim, J.H. (2003) Plant resin. Chemistry, evolution, ecology, and ethnobotany. Timber Press Portland, Cambridge, 586 pp.

Code	**Title**	**Responsible university teacher**
FOMT 1.7	Forest Ecosystems, Silviculture and Forest Protection	Prof. Dr. S. Wagner
Contents and objectives of qualification	Contents: The ecosystem concept for silviculture including the natural distribution and classification of forest and woody plant formations as well as the zoological fundamentals in the tropics are introduced. Concerning selected plant genera and forest formations, life processes which are important for silviculture (growth, development, ecosystem functions and dynamics) are explained, and silvicultural stand analyses are dealt with. Typical silvicultural systems are presented. The module consists of a pre-compulsory section and two optional parts (A and B) for which a compulsory choice is required. In optional compulsory **part A**, potential silvicultural interventions, relating to tropical moist and dry forests, are discussed corresponding to the required forest functions and objectives. In optional compulsory **part B**, the relationships between plants and herbivores, as well as between herbivores and their antagonists are dealt with by considering their interrelationships with respect to population ecology and natural regulation. Objectives of qualification: The student learns to analyse, evaluate and classify tropical forest ecosystems; to select silvicultural systems and supervise their implementation. In the optional compulsory **part A** the student learns to assess the advantages and disadvantages of silvicultural systems for tropical moist and dry forests and to select them according to local conditions. In optional compulsory **part B** the student learns to analyse the plant- herbivore-antagonist relationships, to assess biotic risks and regulation possibilities for management of natural forests and to integrate them in the management strategies. Hence, the student is capable of implementing strategies of sustainable natural forest management.	

Kind of teaching	The module comprises: 2.0 hrs/wk Lecture 1.0 hrs/wk Seminar 0.5 hrs/wk Exercise 0,5 hrs/wk Excursion
Requirements	Ecological fundamentals Literatur: Kimmins, J.P. (1997) Forest ecology. A foundation for sustainable management. 2nd ed., Prentice Hall, Inc., New Jersey, 596 pp. Lamprecht, H. (1989) Silviculture in the tropics. Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH, Eschborn, 296 pp. Matthews, J.D. (1996) Silvicultural systems. Clarendon Press Oxford, Oxford, 284 pp. Huffaker C.B.; Gutierrez A.P. (1999) Ecological entomology. 2nd ed. John Wiley Sons. New York. 756 pp.
Modality	The module is compulsory in the non-consecutive Master course, Tropical Forestry and Management.
Requirements for credits	The credits are obtained, once the student has passed the module examination. The examination consists of a seminar paper (20 hours) and an oral examination (20 minutes).
Credits and grades	5 credits can be acquired in the module. The module grade is derived from the weighted grades for the seminar paper (33 %) and the oral examination performance (67 %).
Frequency	The module is offered in each academic year for the summer semester.
Effort	The effort comprises 150 working hours, of which 60 are contact hours.
Timeframe	The module covers one semester.
Literature	Bruenig, E.F. (1996) Conservation and management of tropical rainforests. CAB International, Wallingford, UK, 339 pp. Dawkins, H.C.; Philip, M.S. (1998) Tropical moist forest silviculture and management. A history of success and failure. CAB International, Wallingford, Oxon, 359 pp. Ffolliott, P.F.; Brooks, K.N.; Gregersen, H.N.; Lundgren, A.L. (1995) Dryland forestry. Planning and management. John Wiley & Sons, Inc., New York, 453 pp. Johnson, E.A.; Miyanishi, K. (2001) Forest fires. Behavior and ecological effects. Academic Press, San Diego, 594 pp. Richards, P.W. (1996) The tropical rain forest - an ecological study. 2nd ed. Cambridge University Press, Cambridge, 575 pp. Smith, D.M.; Larson, B.C.; Kelty, M.J.; Ashton, P.M.S. (1997) The practice of silviculture. Applied forest ecology. 9th ed. John Wiley & Sons. Inc., New York, 537 pp. Ananthakrishnan, T.N. (1998) Technology in biological control. Science Publishers. Inc. USA, 124 pp. Denholm. I.; Pickett J.A.; Devonshire A.L. (1998) Insecticide resistance: from mechanisms to management. The Royal Society. CABI Publishing. 123 pp. Pearce, M.J. (1997) Termites. Biology and pest management. CAB International. 172 pp. Speight, M.R.; Wylie, F.R. (2001) Insect pests

	in tropical forestry. CAB International, Wallingford, Oxon, 307 pp. Watt, A.D.; Stork, N.E.; Hunter, M.D. (1997) Forests and insects. Chapman & Hall, London.

Code	**Title**	**Responsible university lecturer**
FOMT 1.8	Economics and Management of Forest Resources	PD Dr. P. Deegen
Contents and objectives of qualification	Contents: Principles of forestry economics are explained by means of the "one-tree-model", the "Faustmann-Pressler-Ohlin-theorem" as a criterion of inter-temporal efficient timber production and of the interest theory after I. Fischer. The analysis of forestry focuses on the development of timber production, the long-term timber supply, the land allocation and the provision of environmental goods. Concerning the management of enterprises, the course deals with strategic planning and forest management planning (inventory, control, medium-term planning) as well as the planning and controlling of forest management measures (regeneration, stand treatment, timber utilization). In the optional compulsory **part A** an economic analysis is conducted for the provision and production of environmental goods. Case studies from the tropics serve as an illustration of the theory and are the basis for exercises. In the optional compulsory **part B**, the development of a continuous forest inventory design as well as the structure of a GIS aided management information system are conveyed with reference to a management example from the tropics. Objectives of qualification: The student understands principles and methods of forest economics and can independently apply these in the analysis of forestry practice and in the management of forest enterprises. The student masters the concepts of the inter-temporal efficiency and the allocation of collective goods. He or she is capable of utilizing economic instruments for the planning of forest production, the preparation of managerial decisions and the control of forest enterprise development in the tropics.	
Kind of teaching	The module comprises: 1.5 hrs/wk Lecture 1.5 hrs/wk Seminar 1.0 hrs/wk Exercise	
Requirements	Literature: Klemperer, D. (1996) Forest resource economics and finance. McGraw-Hill. Davis, L.S.; Johnson, K.N. (1986) Forest management. McGraw-Hill.	
Modality	The module is compulsory in the non-consecutive Master, Course Tropical Forestry and Management.	
Requirements for credits	The credits are obtained, once the module examination has been passed. The module examination is a written test (90 minutes).	
Credits and grades	5 credits can be obtained in the module. The module grade is the grade of the written test (90 minutes).	

Frequency	The module is offered in each academic year for the summer semester.
Effort	The effort comprises 150 working hours, of which 60 are contact hours.
Timeframe	The module covers one semester.
Literature	Hyde, W.F. (1980) Timber supply, land allocation and economic efficiency. John Hopkins Univ. Press. Neher, P.A. (1993) Natural resource economics. Conservation and exploitation. Cambridge University Press. Leuschner, W.A. (1990) Forest regulation, harvest scheduling and planning techniques. Wiley & Sons. Loetsch, F.; Haller, K.E. (1964) Forest inventory. Vol. I. BLV-Verlag. Loetsch, F.; Haller, K.E. (1973) Forest inventory. Vol. II. BLV-Verlag.

Code	**Title**	**Responsible university lecturer**
FOMT 1.9	Organisation and Management Systems	Prof. Dr. J. Pretzsch
Contents and objectives of qualification	Contents: Methodical approaches of management analyses for farm households via forest enterprises and agroforestry enterprises up to large industrial enterprises in the tropics are dealt with. Networks and clusters are incorporated. The main emphasis lies on the enterprise factors and processes as well as their qualitative and quantitative assessment and evaluation. The assessment of the enterprises is performed in the context of the given natural, socio-cultural and economic frameworks. Internal and external factors characteristic of the enterprises are identified, recorded, structured and analyzed. The optional compulsory part A is concerned with households oriented by self-sufficiency and marketing, mixed agricultural and forestry enterprises and small forestry enterprises in tropical countries. Besides technological, mainly social, cultural and economic characteristics are referred to. In the optional compulsory part B knowledge of the structural and process organisation of specialized larger enterprises in tropical countries is imparted by means of concrete management examples from forestry and the forest products sectors. Objectives of qualification: The student learns about methods of socio-economic analysis of forestry, mixed agriculture and forestry, and industrial enterprise systems as well as methods for the interpretation of the results, and of comparative analysis. He or she is able to differentiate between enterprise profiles primarily by their technological, economic and social criteria, as well as to independently conduct enterprise analyses. By case studies of subsistence-oriented and mixed enterprises in the optional compulsory part A, as well as of specialized forestry enterprises and large industrial enterprises in the optional compulsory part B, the student acquires the methodological tools necessary for the socio-economic development of enterprises.	

Kind of teaching	The module comprises: 1.0 hrs/wk Lecture 2.0 hrs/wk Seminar 1.0 hrs/wk Exercise
Requirements	Fundamentals in forestry managerial science and in enterprise organisation Literature: Beets, W.C. (1990) Raising and sustaining productivity of smallholder farming systems in the tropics. AgBe Publishing Alkmaar.
Modality	The module is compulsory in the non-consecutive Master course, Tropical Forestry and Management.
Requirements for credits	The credits are obtained, once the module examination has been passed. The examination consists of a seminar paper (15 hours) and an oral examination (20 minutes).
Credits and grades	5 credits can be obtained in the module. The module grade is derived from the weighted grades for the seminar paper (33%) and the oral examination (67%).
Frequency	The module is offered in each academic year for the summer semester.
Effort	The effort comprises 150 working hours, of which 60 are contact hours.
Timeframe	The module extends over one semester.
Literature	Heyde, W.F. (1980) Timber supply, land allocation and economic efficiency. John Hopkins Univ. Press. Neher, P.A. (1993) Natural resource economics. Conservation and exploitation. Cambridge University Press. Dillon, J.L.; Hardacker, J.B. (1993) Farm management research for small farmer development. Rome, FAO Farm Systems Management Series 6. McConnell, D.J.; Dillon, J.L. (1997) Farm management for Asia : a systems approach. Rome, FAO Farm Systems Management Series 13.

Code	Title	Responsible university lecturer
FOMT 1.10	Project Planning and Evaluation	Prof. Dr. J. Pretzsch
Contents and objectives of qualification	Contents: On the basis of the project cycle, methods of project planning, implementation, monitoring and impact assessment in developing and emerging countries are introduced and students are trained as to their application. In this connection special emphasis is placed on the project environment, the constellation and integration of stakeholders, the project planning matrix, economics and efficiency of the project, methods of determining the social and ecological impact as well as quality monitoring (certification). Practice-related knowledge is deepened by involving partners from the field (GTZ, consulting companies etc.), working with case studies and the independent elaboration of planning documents for a project of technical cooperation. The student applies the methodical steps of the project cycle in planning a field project of Technical Cooperation from the forestry/agro forestry sector. Objectives of qualification: The student is qualified to independently plan projects, to supervise their implementation, as well as to evaluate them. He knows the most important strengths and weaknesses of alternative planning, evaluation and impact-assessment methods as well as of various project and program types. He is capable of conducting financial and economic assessments (feasibility studies) of projects ex-ante, ongoing and ex-post. He is able to independently apply methods of impact-assessment and certification, as well as to interpret the results.	
Kind of teaching	The module comprises: 1.0 hrs/wk Lecture 1.0 hrs/wk Exercise 2.0 hrs/wk Project work	
Requirements	Basics in forest policies and development policy, managerial economics and organisation Gittinger, J.P. (1982) Economic analysis of agricultural projects. Baltimore & London.	
Modality	The module is compulsory in the non-consecutive Master-Course, Tropical Forestry and Management.	
Requirements for credits	The credits are obtained, once the module examination has been passed. The module examination consists of a project work (8 weeks) and a written test (90 minutes).	
Credits and grades	5 credits can be obtained in the module. The module grade is derived from the weighted grades of the project work (50%) and the written test (50%).	
Frequency	The module is offered in each academic year for the summer semester.	
Effort	The effort comprises 150 working hours, of which 60 are contact hours.	

Timeframe	The module extends over one semester.
Literature	Dusseldorp, D.B.W.M. v. (1990) Planned development via projects. Its necessity, limitations and possible improvements. In: Sociologia Ruralis Vol. XXX, No.3-4, p. 337-352. Maddock, N. (1993) Assessing M&E. Has project monitoring and evaluation worked? p. 188-192, in: Project Appraisal, Vol. 8, No. 3. Meidinger E.E.; Elliot, C.; Oesten, G. (eds.) (2002) Social and political dimensions of forest certification. Freiburg.

Code	**Title**	**Responsible university lecturer**
FOMT 1.11 A	Tropical Soils, Soil Degradation and Rehabilitation	Prof. Dr. F. Makeschin
Contents and objectives of qualification	Contents: Subsequent to an introduction in the soil-forming substrates and processes the principles of the international soil classification WRB (World Reference Base) are outlined, and the evolution, distribution and utilization potentials of the soil classes are explained. The methodology for regionalization of the soil information data and soil information systems are dealt with. The historical development of soil degradation, the causes of regional differentiation, as well as the intensity classes are elucidated and deepened by case studies. These are pilot studies in climatically representative regions and also country-specific field reports. Field trips and exercises serve to demonstrate the classification of soil degradation. Based on the reasons for and the classes of the degradation, physical, chemical and biological rehabilitation methods are outlined and simulated using case studies. Objectives of qualification: The student acquires special knowledge of forms, distribution and functionality of soils in the tropics, the reasons and the intensity of soil hazards. He or she learns about methods for region- and site-specific measures of soil rehabilitation based on case studies from Asia, Africa and Latin America. By using available resources, student is able to independently assess soils and their condition and to deduce methods for rehabilitation and site-adequate, sustainable management.	
Kind of teaching	The module comprises: 1.0 hrs/wk Lecture 2.5 hrs/wk Project work 0.5 hrs/wk Field trip	
Requirements	Ecological knowledge Literature: Middelton, N.; Thomas, D. (1997) World atlas of desertification. Arnold London. FAO (2006) FAO World Reference base for soil resources 2006. FAO Rome 2006.	
Modality	The module is one of two optional compulsory modules in the non-consecutive Master course, Tropical Forestry and Management, of which one has to be selected.	

Requirements for credits	The credits are obtained, once the module examination has been passed. The module examination consists of a project work (10 hours) and a written test (90 minutes).
Credits and grades	5 credits are obtained in the module. The module grade consists of the weighted grades for the written report on the project dealt with (50%) and the written test (50%).
Frequency	The module is offered in each academic year for the summer semester.
Effort	The effort required comprises 150 working hours, of which 60 are contact hours.
Timeframe	The module extends over one semester.
Literature	Ashman, M.R.; Puri, G. (2002) Essential soil science. Blackwell Science. Tideman, E.M. (1999) Watershed management. Omega Scientific Publishers New Delhi.

Code	Title	Responsible university lecturer
FOMT 1.11 B	Management of Protected Areas, Wildlife and Tourism	Prof. Dr. P. A. Schmidt
Contents and objectives of qualification	Contents: Theory and methodology of planning and management of national systems of protected areas of tropical countries and international networks of protected areas are dealt with. The explanatory approaches are based on an ecosystem approach, and however, incorporating historical, socio-economic and cultural aspects. The objectives and management principles of the IUCN system of protected area categories, the Man and Biosphere-Program of UNESCO, Cultural and Natural World Heritage Sites of UNESCO, and the global Protected Area Program of the Convention on Biodiversity are identified. Another main emphasis lies on the explanation of the processes leading to an efficient and adaptive management. In the field of Wildlife Management the focus is on the importance of protection and on consumptive and non-consumptive utilization of wildlife and their habitats with respect to the socio-economic framework. Wildlife is explained as a value per se and also as an economic factor, and as a medium of affection in marketing and communication and as a damage factor. An introduction is given regarding the phenomenon of tourism and its interrelationships with ecology. Conflicts and approaches to solutions regarding the wildlife–man relationships are elaborated. The positive and negative consequences of travelling are discussed. Economic aspects, responsibility for the environment and social compatibility are discussed in view of the sustainability of tourism. As for interlinking protection, wildlife management and tourism in the tropics, a methodological framework is given, within which output decisions for planning and implementation are prepared. Objectives of qualification: The student is able to classify and evaluate systems of protected areas in the context of conservation of biological diversity and sustainable development. The student is aware of the differentiated importance of protected areas as instruments for implementing various nature conservation concepts (integration and segregation strategies). He or she is able to analyze and evaluate the national and international categories of protected areas for the protection of species, ecosystems and resources, as well as for the protection and development of integrated land use. He or she can make scientific decisions for a purposive planning, participative and dynamic management as well as efficiency control and monitoring of protected areas. He or she is able, especially by participatory approaches, to develop concepts for a sustainable utilization and protection strategy oriented by the requirements of long-term preservation of the resource "biodiversity". The student can assess the interactions between tourism and ecology and is capable of applying the methodological foundations of tourism to ecological conditions with special regard to its economic importance. The student masters the methodological instruments for comparatively analyzing, connecting and controlling the implementation of the above-mentioned forms of protection and utilization in the tropics.	
Kind of teaching	The module comprises: 1.0 hrs/wk Lecture 2.0 hrs/wk Seminar 1.0 hrs/wk Field trip	

Requirements	Knowledge of ecology, managerial economics and operational organisation Literature: Caughley, G.; Sinclair, A.R.E. (1994) Wildlife ecology and management. Blackwell, Cambridge. Wilson, E.O. (1988) Biodiversity. National Academic Press, Washington D.C. . IUCN (2000) Guidelines for protected area management categories. EUROPARC Federation, Grafenau. Swarbrooke, J. (1999) Sustainable tourism management. Wallingford.
Modality	The module is one of two optional compulsory modules in the non-consecutive Master course, Tropical Forestry and Management, of which one has to be selected.
Requirements for credits	The credits are obtained, once the module examination has been passed. The module examination consists of a seminar paper (15 hours) and a written test (90 minutes).
Credits and grades	5 credits can be obtained in the module. The module grade results from the weighted grades for the seminar paper (33%) and the test (67%).
Frequency	The module is offered in each academic year for the summer semester.
Effort	The effort covers 150 working hours, of which 60 are contact hours.
Timeframe	The module extends over one semester.
Literature	Avise, J.C.; Hamrick, J.L. (1995) Conservation genetics. Chapman & Hall, New York. Cronon, W. (ed.) (1996) Uncommon ground-rethinking - the human place in nature. Norton & Co., New York. Pirmack, R.B. (1993) Essentials of conservation biology. Sinauer Ass., Inc. Heywood, V.H.; Watson, R.T. (1995) Global biodiversity assessment. University Press, Cambridge, UK. IUCN (1998) National system planning for protected areas. IUCN Publication Services Unit, Cambridge, UK. IUCN (1999) Parks for biodiversity. IUCN, Gland. IUCN (2001) Biodiversity in development. Guiding principles. IUCN, Gland. IUCN/WCPA (2000) Financing protected areas – Guidelines for protected areas manager. Best Practice Protected Area Guidelines Series No. 5. IIUCN/WCPA (2002) Sustainable tourism in protected areas – Guidelines for planning and management. Best Practice Protected Area Guidelines Series No. 8. Posey, D.A. (ed.) (2004) Cultural and spiritual values of biodiversity. ITP and UNEP. UNESCO (2000) Seville + 5. MAB Report Series No. 69. WTO-World Tourism Organisation (ed.) (1999) Sustainable tourism development: Guide for local planners, Madrid.

Code	Title	Responsible university lecturer
FOMT 1.12	Complex thematic seminars	Prof. Dr. J. Pretzsch
Contents and objectives of qualification	Contents: Individual students or a group of students select a topic for the seminar paper from an actual catalogue with various main points that change over time. In this context, conceptions from national economic, managerial economic, social, cultural, technological, ecological, ethical as well as from local up to global viewpoints are elaborated and linked to an overall assessment. A methodological field-specific introduction is given to the catalogue. The seminar topics are summarized into scientific-methodologically substantiated groups, with a scientific supervisor being responsible for each group. The elaboration of the seminar paper is guided by tutors. The results are presented and discussed in plenary meeting. Objectives of qualification: The student is able to draw up a scientific work according to international standards by using the tutorial, to present it in the plenary meeting and to substantiate it. The student is able to use literature sources and other data sources and to discuss it, as well as to draw conclusions for research and development. Because of the complexity of the topic and the nature of group work, the student becomes particularly familiar with interdisciplinary teamwork.	
Kind of teaching	The module comprises: 0.5 hrs/wk Lecture 2.5 hrs/wk Seminar 1.0 hrs/wk Tutorials	
Requirements	Knowledge of the special forestry fields Literature: Topic-specific selection in libraries, on the Internet; reports etc. Materials in various institutions	
Modality	The module is compulsory in the non-consecutive Master course, Tropical Forestry and Management.	
Requirements for credits	The credits are obtained, once the module examination has been passed. The module examination consists of a report (15 hours) and a seminar paper (75 hours).	
Credits and grades	5 Credits can be obtained in the module. The module grade results from the weighted grades for the report (33%) and the seminar paper (67%).	
Frequency	The module is offered in each academic year for the summer semester.	
Effort	The effort covers 150 working hours, of which 60 are contact hours.	
Timeframe	The module extends over one semester.	

Code	Title	Responsible university lecturer
FOMT 2.1	Management Systems in Natural Forest in the Tropics	Prof. Dr. S. Wagner
Contents and objectives of qualification	Contents: Specific management systems in natural forests of the tropics with the components: Division of a Forest, Forest Inventory, Functions, Management Objectives, Strategies of Silviculture, Silvicultural and Utilization Systems including Integrated Forest Protection are exemplary dealt with, and principles of their planning, implementation, monitoring and evaluation are discussed. The mutual optimization conveys to the students a synthesis between production-oriented and environmentally oriented objectives. The topics are discussed, focusing on different forest formations, regions, sustained yield units (Nachhaltseinheiten) and forest enterprises. This serves the discussion about sustainability, proper management strategies in the area of conflict market and product lines or chains of performance, respectively. In the optional compulsory part A the analysis, evaluation, and the draft product lines for wood, non-timber products, other products and services of the forest such as water, soil protection and climate regulation, recreation and education are dealt with. In this context, a comprehensive and reinforcing elucidation, analysis and evaluation of selected case studies for future-oriented sustainable natural forest management are the main points. Based on systems- and decision-theoretical models, holistic decisions are made. In the optional compulsory part B biodiversity and its conservation as well as integrated forest protection including fire management in the natural forest are dealt with. On the basis of case studies a comparative analysis and evaluation is conducted for various biome types of the Earth. Objectives of qualification: The student acquires special knowledge of important management systems for tropical forests. He or she is able to apply methods of planning, implementation, evaluation and monitoring of the management of natural forests. He or she is capable of developing models of holistic optimization for the management of tropical forests, as well as applying them to concrete circumstances.	
Kind of teaching	The module comprises: 1.5 hrs/wk Lecture 1.5 hrs/wk Seminar 1,0 hrs/wk Exercise	
Requirements	Knowledge in forestry disciplines. Literature: Lamprecht, H. (1989) Silviculture in the tropics. Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH, Eschborn, 296 pp. Matthews, J.D. (1996) Silvicultural systems. Clarendon Press Oxford, Oxford, 284 pp. Johnson, E.A.; Miyanishi, K. (2001) Forest fires. Behavior and ecological effects. Academic Press, San Diego, 594 pp. Speight, M.R.; Wylie, F.R. (2001) Insect pests in tropical forestry. CAB International, Wallingford, Oxon, 307 pp.	

Modality	The module is compulsory in the non-consecutive Master course, Tropical Forestry and Management.
Requirements for credits	The credits are obtained, once the module examination has been passed. The module examination consists of a seminar paper (30 hours) and a written test (90 minutes).
Credits and grades	5 credits can be obtained in the module. The module grade is derived from the weighted grades for the seminar paper (33%) and the written test (67%).
Frequency	The module covers one semester.
Literature	Clemen, R. (1996) Making hard decisions. Duxbury Press. Keeney, R.L. (1992) Value focused thinking. A path to creative decision making. Harvard University Press Cambridge, London. Saaty, T.L. (1995) Decision making for leaders. RWS Publications Pittsburgh. Ffolliott, P.F.; Brooks, K.N.; Gregersen, H.N.; Lundgren, A.L. (1995) Dryland forestry. Planning and management. John Wiley & Sons, Inc., New York, 453 pp. Buongiorno, J.; Gilles, K. (2003): Decision methods for forest resource management. Academic Press. Amsterdam. Kimmins, J.P. (1997) Forest ecology. A foundation for sustainable management. 2nd ed., Prentice Hall, Inc., New Jersey, 596 pp. Richards, P.W. (1996) The tropical rain forest - an ecological study. 2nd ed. Cambridge University Press, Cambridge, 575 pp. Smith, D.M.; Larson, B.C.; Kelty, M.J.; Ashton, P.M.S. (1997) The practice of silviculture. Applied forest ecology. 9th ed. John Wiley & Sons. Inc., New York, 537 pp. Speight, M.R.; Wainhouse, D. (1989) Ecology and management of forest insects. Oxford University Press, 374 pp. Klemperer, D. (1996) Forest resource economics and finance. McGraw-Hill. Heyde, W.F. (1980) Timber supply, land allocation and economic efficiency. John Hopkins Univ. Press. Neher, P.A. (1993) Natural resource economics. Conservation and exploitation. Cambridge University Press.

Code	Title	Responsible university Teacher
FOMT 2.2	Management Systems in Forest Plantations in the Tropics	Prof. Dr. H. Röhle
Contents and objectives of qualification	Contents: Production systems and management organisation of forest plantations in the tropics are discussed, modelled and comparatively evaluated by means of case studies according to ecological, social and economic criteria. For this purpose, methods from growth and yield science, forest protection and forest economics are applied. Fire protection, as well as measures of integrated forest protection are explained, starting with forest tree nursery via planting, stand treatment and timber harvest up to the preservation of the timber. An overview of the current research on plantations is given. In the optional compulsory **part A** in a reinforcing methodological manner, the fields of planning and management of forest plantations are elaborated. The main emphasis lies on investment calculation and on deriving of a feasibility study. In the optional compulsory **part B** fast-growing plantations that are generally established on farmlands are focussed on. The main emphasis is on the elaboration of models for fast-growing plantations in consideration of the technological, growth-specific and economic criteria. The knowledge of genetic and plant-breeding issues as well as carbon sequestration is broadened. Objectives of qualification: The student is able to assess forest plantations in the tropics in regard to their yield potential and to comprehensively evaluate them with respect to ecological, economic and social criteria. He or she is capable of planning forest plantations as well as controlling their establishment and management. The student can identify problem areas and diagnose the respective research requirements.	
Kind of teaching	The module comprises: 1.5 hrs/wk Lecture 1.5 hrs/wk Seminar 1.0 hrs/wk Exercise	
Requirements	Knowledge of forestry disciplines Literature: Evans, J.; Turnbull, J.W. (2004) Plantation forestry in the tropics. 3rd edition. Oxford University Press, Oxford, 467 pp. Heikkliä, T.V.; Grönqvist, R.; Jurvelius, M. (1993) Handbook on forest fire control. Forestry Training Programme Publication 21 Helsinki, 239 pp. Johnson, E.A.; Miyanishi, K. (2001) Forest fires. Behaviour and ecological effects. Academic Press, San Diego, 594 pp. Speight, M.R.; Wylie, F.R. (2001) Insect pests in tropical forestry. CAB International, Wallingford, Oxon, 307 pp. Watt, A.D.; Stork, N.E.; Hunter, M.D. (1997) Forests and insects. Chapman & Hall, London, 406 pp. Wright, J.W. (1976) Introduction to Forest Genetics. Academic Press, New York.	
Modality	The module is compulsory in the non-consecutive Master course, Tropical Forestry and Management.	

Requirements for credits	The credits are obtained, once the module examination has been passed. The module examination consists of a seminar paper (30 hours) and a written test (90 minutes).
Credits and grades	Five credits can be obtained in the module. The module grade is derived from the weighted grades for the seminar paper (33%) and the written test (67%).
Frequency	The module is offered in each academic year for the winter semester.
Effort	The effort comprises 150 working hours, of which 60 are contact hours.
Timeframe	The module covers one semester.
Literature	Smart, J.C.R.; Burgess, J.C. (2000) An environmental economic analysis of Willow SRC Production. In: J. of Forest Economics, vol. 6, no. 3, S. 193-225. Umea. Goldammer, J.G. (1993) Fire management. In: Pancel, L. (ed.) (1993) Tropical Forestry Handbook. Springer-Verlag Berlin Heidelberg New York, 1221-1268. Speight, M.R.; Wainhouse, D. (1989) Ecology and management of forest insects. Oxford University Press, 374 pp. Johnson, E.A.; Miyanishi, K. (2001) Forest fires. Behaviour and ecological effects. Academic Press, San Diego, 594 pp.

Code	Title	Responsible university lecturer
FOMT 2.3	Urban Tree Management in the Tropics	Prof. Dr. A. Roloff
Contents and objectives of qualification	Contents: Based on the necessity of urban forest management, the planning, administration and management of woody plants and trees in urban and street habitats of tropical regions are explained. Inventory methods, planning methods, governance, budgeting and implementation of the plans for urban tree management are dealt with. Particular importance is attached to the differentiation according to the levels "village" up to "mega-city". In the optional compulsory **part A** functions, services and utilization of urban forests, parks and trees form the focus of the specialization. Environmentally relevant, cultural, social and social-hygienic effects are explained by examples. This includes the utilization and application of the respective products linked with it such as leaf litter, seeds, branch-wood, stem-wood, tree-stumps and other product lines, as well as local institutional networks of governance. The optional compulsory **part B** is concerned with tree care in towns and parks: Methods of tree assessment (vitality), diagnosis (visual symptoms), tree care; important pests, climbing plants and epiphytes, as well as their effects on the trees (growth inhibition, wood decay etc.); methods and equipment for determination of stem and root damage, wound reactions, crown/root interactions; wood increment (growth rings) as an indicator of productivity; the individual life history; valuation of the single tree; obligations for safety precaution including legal aspects; pruning, harvesting, lopping as well as transplanting of large trees. This is demonstrated by case studies in the Dresden area; aspects of knowhow transfer in tropical regions are jointly elaborated. Objectives of qualification: The student knows about the importance of trees and woody plants in urban landscapes, of problems of their integration at various levels starting from village to mega-city. He or she is able to plan urban tree management in tropical regions, as well as to control and evaluate it during the implementation. He or she can plan green spaces in tropical towns and control their sustainable management.	
Kind of teaching	The module comprises: 1.5 hrs/wk Lecture 1.5 hrs/wk Seminar 1.0 hrs/wk Exercise	
Requirements	Knowledge in ecology, forest botany and management Literature: Miller, R.W. (1988) Urban Forestry. Prentice-Hall, London.	
Modality	The module is compulsory in the non-consecutive Master course, Tropical Forestry and Management.	
Requirements for credits	The credits are obtained, once the module examination has been passed. The module examination consists of a seminar paper (15 hours) and an oral examination (20 minutes).	
Credits and grades	5 credits can be obtained in the module. The module grade is derived	

	from the weighted grades for the seminar paper (33%) and the oral examination (67%).
Frequency	The module is offered in each academic year in the winter semester.
Effort	The effort comprises 150 working hours, of which 60 are contact hours.
Timeframe	The module covers one semester.
Literature	Konijnendijk, C.C. et al. (2005) Urban forests and trees. Springer, Berlin. Kowarik, I.; Körner, S. (2005) Wild urban woodlands. Springer, Berlin. Roloff, A. (2004) Trees – phenomena of adaptation and optimization. Ecomed, Landsberg.

Code	**Title**	**Responsible university lecturer**
FOMT 2.4	Integrated Land use Management at Landscape Scale	Prof. Dr. J. Pretzsch
Contents and objectives of qualification	Contents: Integrated land use management is concerned with the instruments for reducing the continuously increasing pressure on land resources due to overexploitation and consumption. Concepts and methodological principles of land use management such as rural development planning, regional planning, land classifications, land use planning etc. are supplemented by explaining the specific interests, requirements and activities of the various sectors and stakeholders. In a selected planning region at least four important land use types (forestry, agriculture, nature conservation, and tourism) are analysed, and by an orientation towards processes, they are assessed as to their interdependencies. Particular emphasis is placed on the differentiation and the interaction of physical-technological and political planning. The sector concepts are elaborated in group work and form the optional compulsory part of the module. The sector concepts are discussed in the plenary session and are involved in an iterative planning process in a strategy of integrated management of land use. GIS serves as an instrument for visualisation and documentation. Objectives of qualification: The student is able to understand, analyse and control in a planning manner the co-operation of sectors in land use with respect to synergies and competition. He or she can apply methods of multi-sector land use planning and is familiar with disciplinary and interdisciplinary concepts for a sustainable land use management. Besides being able to participate effectively in teamwork, he or she qualifies in communication, designing, discussion, presentation and documentation of results.	
Kind of teaching	The module comprises: 1.0 hrs/wk Lecture 1.5 hrs/wk Practical 1,5 hrs/wk Workshop	

Requirements	Knowledge in forestry disciplines Literature: Dalal-Clayton, B.; Dent, D.; Dubois, O. (2003) Rural planning in developing countries – supporting natural resource management and sustainable livelihoods. Earthscan Publications Ltd London, 226 pp. FAO (1995): Planning for sustainable use of land resources: Towards a new approach. FAO Land and Water Bulletin 2 Rome.
Modality	The module is compulsory in the non-consecutive Master course, Tropical Forestry and Management.
Requirements for credits	The credits are obtained, once the module examination has been passed. The module examination consists of a report on the practical assignment (15 hours) and a seminar paper (30 hours).
Credits and grades	5 credits can be obtained in the module. The module grade is aggregated from the report on the practical assignment for the analysis of the current situation and planning (33%) and the seminar paper (67%).
Frequency	The module is offered in each academic year in the winter semester.
Effort	The effort comprises 150 working hours, of which 60 are contact hours.
Timeframe	The module covers one semester. It is carried out in blocks.
Literature	Clarke, K.C.; Parks, B.O.; Crane, M.P. (2002) Geographic information systems and environmental modelling. Prentice-Hall of India Private Ltd. New Delhi, 306 pp. Dale, Peter F.; McLaughlin, John D. (1990) Land information management. An introduction with special reference to cadastral problems in Third World countries. Clarendon Press, Oxford. Dent, D.; Young, A. (1993) Soil survey and land evaluation. E & FN SPON, London, 278 pp. FAO (1993): Guidelines for land-use planning. FAO Development Series 1, Rome, pp.96. Santos, J.M.L. (1998) The economic valuation of landscape change. Theory and policies for land use and conservation. Tideman, E.M. (1999) Watershed management. Omega Scientific Publishers New Delhi. Van Lier, H.N.; Jaarsma, C.F.; De Buck, A.J. (1994) Sustainable land-use planning. ELSEVIER Amsterdam-London-New York-Tokyo. Warren, P. (1998) Developing participatory and integrated watershed management. FAO Community Forestry Case Study Series 13, Rome.

Code	Title	Responsible university lecturer
FOMT 2.5	Scientific Work Methods and Research Plan	Prof. Dr. J. Pretzsch
Contents and objectives of qualification	Contents: An introduction is given to hermeneutic fundamentals as well as analytical methods in Natural Sciences, Technology Sciences and Social Sciences. Special emphasis is placed on assessment methods as well as on quantitative-statistical and qualitative evaluation methods. The scientific methods are reinforced and practised in exercises. Moreover, standards of scientific publications are conveyed. By the example of a scientific topic the student develops a research plan. For this purpose, he or she selects one of the following three thematic fields: ecology, technology as well as social economics and culture. Mentoring is group-specific and forms the optional compulsory part of the module. The process of drawing up the research plan is reported several times in the plenary session. Thus, in general the student prepares theoretically and methodically the Master thesis data for assessment in his or her home country. Objectives of qualification: The student is capable of applying scientific methods for the collection and evaluation of data. In the complex environment of his home country he or she is able to mostly independently assess and process the primary and secondary data, to analyse the results and to interpret them. The ability to compose scientific work is further developed. Thus, he or she is qualified to independently elaborate research projects.	
Kind of teaching	The module comprises: 2.0 hrs/wk Lecture 2.0 hrs/wk Exercise 4.0 hrs/wk Research plan	
Preconditions for participation	Knowledge in forestry disciplines Literature: Creswell, J.W. (2003) Research design. Qualitative and quantitative methods, approaches. 2nd ed. Thousand Oaks, California, 245 pp. Yin, R.K. (1994) Case study research, - design and methods. SAGE Publications, Newbury Park, London, New Delhi.157 pp.	
Modality	The module is compulsory in the non-consecutive Master course, Tropical Forestry and Management.	
Requirements for credits	The credits are obtained, once the module examination has been passed. The module examination consists of a seminar paper (30 hours) and a research plan (135 hours).	
Credits and grades	10 credits can be obtained in the module. The module grade is derived from the weighted grades for the seminar paper (33 %) and the research plan (67 %).	
Frequency	The module is offered in each academic year for the winter semester.	
Effort	The effort comprises 300 working hours, of which 120 are contact hours.	

Timeframe	The module is carried out in block form during the winter semester. It covers one semester.
Literature	Czaja, R.; Blair, J. (1996) Designing surveys. A guide to decisions and procedures. Pine Forge Press Thousand Oaks, California, London, New Delhi. Freese, F. (1984) Statistics for land managers. Paeony Press. Neuman, W.L. (1994) Social research methods – qualitative and quantitative approaches. Allyn and Bacon, Massachusetts, 538 pp. Rohrmoser, K. (1985) Handbook for field trials in technical cooperation. GTZ, Eschborn. Silverman, D. (2001) Interpreting qualitative data. Methods for analysing talk, text and interaction. 2nd ed. SAGE Publications, London, Thousand Oaks, New Delhi. Stern, R.D.; Coe, R.; Allan, E.F.; Dale, I.C. (2004) Good statistical practice for natural resources research. CABI Publishing Cambridge MA, 388 pp.

3.4 Master thesis and colloquium

The 4th semester is fully covered by the elaboration of the thesis (27 credits for the Master thesis and 3 credits for the final public colloquium).The entrance requirement is a successful module examination of the first to third semester The Master thesis comprises original research focussing on the tropics/subtropics. In general it includes a three months' stay in a tropical or subtropical country. It corresponds to one of five types: 1) Obtaining and interpretation of new knowledge (e.g. by formal experiments or surveys); 2) Reorganization or re-evaluation of previous knowledge in a relevant context (e.g. bringing together of datasets); 3) Development, testing and improvement of methods of acquisition of information (e.g. studies with the focus on the working method), 4) Deriving of new case studies and manuals with direct or indirect application for the understanding of land resources; 5) Critical, formal and analytical presentation of characteristics of land resources or their development or management (including concepts of modelling or relevant software development).

Subject and research plan must be elaborated in collaboration with the supervisor. The Master thesis must be written in English and is defended in a final public colloquium. Regular consultation with the supervisor, using library and other resources must be initiated by the M.Sc. student. During the elaboration of the Master thesis the participation of the student in several M.Sc. colloquia is obligatory. Evaluation is made by two examiners (supervisor and external examiner). Further information is available in the examination regulations § 19 – 21. The student learns to independently perform a certain research following a given standard