

Amtliche Bekanntmachungen der TU Bergakademie Freiberg

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Modulhandbuch

für den

Masterstudiengang

**International Master of Science in Advanced
Mineral Resources Development**

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Abkürzungen

KA: schriftliche Klausur / written exam

MP: mündliche Prüfung / oral examination

AP: alternative Prüfungsleistung / alternative examination

PVL: Prüfungsvorleistung / prerequisite

MP/KA: mündliche oder schriftliche Prüfungsleistung (abhängig von Teilnehmerzahl) / written or oral examination (dependent on number of students)

SS, SoSe: Sommersemester / sommer semester


WS, WiSe: Wintersemester / winter semester

SX: Lehrveranstaltung in Semester X des Moduls / lecture in module semester x


SWS: Semesterwochenstunden


Data:	BIOMIN. MA. Nr. 3043	Version: 25.09.2009	Start Year: SoSe 2010
Module Name:	Biotechnology in Mining		
(English):			
Responsible:	Schlömman, Michael / Prof. Dr.		
Lecturer(s):	Schlömman, Michael / Prof. Dr. Mühling, Martin / Dr.		
Institute(s):	Institute of Biosciences		
Duration:	1 Semester(s)		
Competencies:	The students will obtain knowledge about mechanisms of microbial leaching as about applications for the production of metals. They will understand problems related to mine waters and obtain insight into strategies for biotechnological treatment of such waters. In a lab course they will obtain experience with methods and problems related to the cultivation of corresponding microorganisms. In a seminar the students will gain experience with current literature and with reporting about it to other participants.		
Contents:	<p>1. Basics Concepts of microbial energy metabolism, chemolithotrophic growth, diversity of electron acceptors, microbial redox reactions with sulphur, iron, manganese, arsenic, uranium.</p> <p>2. Microbial leaching Mechanisms of leaching, microorganisms involved, application of leaching for the production of copper, gold and diamonds, problem of mine waters.</p> <p>3. Biotechnological treatment of mine waters Microbial sulphate reduction for active treatment, microbial iron oxidation, wet lands.</p> <p>4. Lab course Special plating techniques for acidophilic bacteria, anaerobic cultivation techniques, measurement of parameters to follow growth of relevant microorganisms.</p>		
Literature:	<p>W. Reineke & M. Schlömman: Umweltmikrobiologie, Spektrum Akademischer Verlag;</p> <p>D. R. Lovley (Hrsg.): Environmental Microbe-Metal Interactions, ASM Press;</p> <p>D. E. Rawlings & D. B. Johnson (Hrsg.): Biomining, Springer;</p> <p>L. L. Barton & W. A. Hamilton: Sulfate -Reducing bacteria Environmental and Engineered Systems, Cambridge University Press</p>		
Types of Teaching:	<p>S1 (SS): Lectures (1 SWS)</p> <p>S1 (SS): Seminar (1 SWS)</p> <p>S1 (SS): Practical Application (1 SWS)</p> <p>S1 (SS): Excursion (0,5 SWS)</p>		
Pre-requisites:	Recommendations: Master-degree applied science and geocology or in another area of science or engineering.		
Frequency:	yearly in the summer semester		
Requirements for Credit Points:	<p>For the award of credit points it is necessary to pass the module exam. The module exam contains:</p> <p>KA [90 min]</p> <p>PVL: Passed exercises</p> <p>PVL have to be satisfied before the examination.</p> <p>Voraussetzung für die Vergabe von Leistungspunkten ist das Bestehen der Modulprüfung. Die Modulprüfung umfasst:</p> <p>KA [90 min]</p> <p>PVL: Übungsaufgaben</p>		

	PVL müssen vor Prüfungsantritt erfüllt sein bzw. nachgewiesen werden.
Credit Points:	4
Grade:	The Grade is generated from the examination result(s) with the following weights (w): KA [w: 1]
Workload:	The workload is 120h. It is the result of 52.5h attendance and 67.5h self-studies.

Data:	SUSBFR. MA. Nr. 090	Version: 01.05.2014 	Start Year: WiSe 2013
Module Name:	Brownfield Revitalisation		
(English):			
Responsible:	Klapperich, Herbert / Prof. Dr.		
Lecturer(s):	Klapperich, Herbert / Prof. Dr.		
Institute(s):	Institute of Geotechnics		
Duration:	1 Semester(s)		
Competencies:	Participants will get the qualification to gain knowledge and methods to evaluate contaminated sites - soil and groundwater contaminations. They also learn to apply the interdisciplinary approach by focussing technique, economy, ecology and environmental law. The ovals issue is a Brownfield Manager.		
Contents:	<p><u>Technology of disposal sites and tailings:</u></p> <ul style="list-style-type: none"> • Geotechnical aspects related to the construction of disposal sites and tailings • site survey, investigations and characteristics • transport mechanisms of contaminants in the underground <p><u>Contaminated sites - investigation assessment and reusing (Lifecycle):</u></p> <ul style="list-style-type: none"> • Environmental legislation relevant to contaminated sites • Quality control of sampling on contaminated sites, analytics of site contaminations, reclamation process and monitoring • Assessment of water, soil and air pollution level (risk assessment) • Overview of reclamation methods and geotechnical securing measures • Safety of operation in dealing with contaminated sites • Aspects and concepts of site revitalisation (innercity areas/landscaping) <p><u>Cost-benefit considerations, case studies:</u></p> <ul style="list-style-type: none"> • Comparing various remediation strategies and selecting best option <p><u>Developing and assessing successful after-use scenarios:</u></p> <ul style="list-style-type: none"> • Risk assessment, marketing studies, cost benefit analysis 		
Literature:	Handbuch: Altlastensanierung und Flächenmanagement, Franzius/ Wolf/ Brandt/ Altenbockum; TA Abfall/ Siedlungsabfall; Arbeitshilfen Altlasten, Sustainable Brownfield Regeneration: CABERNET Network Report; Proceedings ECI Conferences „Green Brownfields“		
Types of Teaching:	S1 (WS): Lectures (4 SWS) S1 (WS): Practical Application (2 SWS)		
Pre-requisites:	Recommendations: B.Sc. in Geosciences or Geo-Engineering; Basic Knowledge of Geosystems		
Frequency:	each semester		
Requirements for Credit Points:	For the award of credit points it is necessary to pass the module exam. The module exam contains: MP/KA: Technology of disposal sites and tailings, Contaminated sites - investigation assessment and reusing (KA if 15 students or more) [MP minimum 30 min / KA 90 min]		

	<p>AP: Project report: Cost-benefit considerations, Developing and assessing successful after-use scenarios The type of exam (KA or MP) will be set at the beginning of the modul.</p>
	<p>Voraussetzung für die Vergabe von Leistungspunkten ist das Bestehen der Modulprüfung. Die Modulprüfung umfasst: MP/KA: Technologien bei Deponien und Tailings, Altlasten - Untersuchung, Bewertung und Wiedernutzbarmachung (KA bei 15 und mehr Teilnehmern) [MP mindestens 30 min / KA 90 min] AP: Projektarbeit: Kosten - Nutzen Betrachtungen, Entwicklung und Bewertung erfolgreicher Szenarien zur Folgenutzung Die Art der Prüfung wird beim Start des Moduls festgelegt.</p>
Credit Points:	6
Grade:	<p>The Grade is generated from the examination result(s) with the following weights (w): MP/KA: Technology of disposal sites and tailings, Contaminated sites - investigation assessment and reusing [w: 2] AP: Project report: Cost-benefit considerations, Developing and assessing successful after-use scenarios [w: 1]</p>
Workload:	The workload is 180h. It is the result of 90h attendance and 90h self-studies.

Daten:	DEU A1/ 2. Sem. BA. Nr. 949	Stand: 13.11.2014 	Start: SoSe 2014
Modulname:	Deutsch A1/ 2. Semester		
(englisch):	German A1/ 2nd Semester		
Verantwortlich(e):	Glöckner, Günter / Dipl.-Lehrer		
Dozent(en):	Glöckner, Günter / Dipl.-Lehrer Paul, Sandra / Diplom-Lehrerin		
Institut(e):	Internationales Universitätszentrum		
Dauer:	1 Semester		
Qualifikationsziele / Kompetenzen:	Im Kurs werden Grundlagen in Phonetik, Orthographie, Grammatik und Lexik vermittelt. Die Teilnehmer erwerben Grundkenntnisse und Grundfertigkeiten im Hören, Sprechen, Lesen und Schreiben auf der Basis der Alltagsprache sowie landeskundliche Kenntnisse.		
Inhalte:	Orientierung in der Stadt beziehungsweise in der Firma, öffentliche Verkehrsmittel, Wegbeschreibung, Berufe und Arbeitsalltag, Körper und Gesundheit, Wohnungssuche und -einrichtung, Lebenslauf, Kleidung; Grammatik: zum Beispiel Präpositionen, Frageartikel, Modalverben, Possessivartikel, Perfekt, Konjunktionen, Demonstrativpronomen, Graduierung und Komparativ		
Typische Fachliteratur:	Lagune, Band 1, Hueber		
Lehrformen:	S1 (SS): Übung (4 SWS)		
Voraussetzungen für die Teilnahme:	Obligatorisch: Deutsch A1/ 1. Semester, 2014-11-27 oder äquivalente Sprachkenntnisse		
Turnus:	jährlich im Sommersemester		
Voraussetzungen für die Vergabe von Leistungspunkten:	Voraussetzung für die Vergabe von Leistungspunkten ist das Bestehen der Modulprüfung. Die Modulprüfung umfasst: KA [90 min] PVL: Aktive Teilnahme am Unterricht (mindestens 80%) PVL müssen vor Prüfungsantritt erfüllt sein bzw. nachgewiesen werden.		
Leistungspunkte:	4		
Note:	Die Note ergibt sich entsprechend der Gewichtung (w) aus folgenden(r) Prüfungsleistung(en): KA [w: 1]		
Arbeitsaufwand:	Der Zeitaufwand beträgt 120h und setzt sich zusammen aus 60h Präsenzzeit und 60h Selbststudium. Der Zeitaufwand beträgt 120 Stunden und setzt sich zusammen aus 60 Stunden Präsenzzeit und 60 Stunden Selbststudium.		

Data:	MKOMMU2. MA. Nr. 2018	Version: 17.08.2009 	Start Year: SoSe 2010
Module Name:	Geoscientific Communication II		
(English):			
Responsible:	Merkel, Broder / Prof. Dr.		
Lecturer(s):	Merkel, Broder / Prof. Dr. Matschullat, Jörg / Prof. Dr. Stumm, Andreas / Dr. Ratschbacher, Lothar / Prof. Dr.		
Institute(s):	Institute of Geology Institute of Mineralogy		
Duration:	1 Semester(s)		
Competencies:	The course intends to give students the knowledge and the ability to perform scientific database research and documentation as well as scientific writing, designing a scientific poster and presenting results in an oral talk.		
Contents:	Detailed database research, data mining, data management including raw data, scientific writing, rhetoric, and poster compilation. Major goals are learning and applying strategies of scientific enquiries using different techniques and digital sources, navigating reference management systems and compilation of bibliographies. Database concepts, publication strategies, citation of publications, Digital Object Identifier (DOI®) System, techniques for primary data publication incl. Meta data concepts are contents as well. Finally rhetoric and promoting results by means of scientific posters are content of the class. Seminar: working on a scientific topic for a defined time, writing a 10 pages paper and presenting the results in an oral presentation.		
Literature:	Poetzsch, E. (2002). Information Retrieval: Einführung - Potsdam, Verl. für Berlin-Brandenburg. ; Horatschek & Schubert (1998). Richtlinie für die Verfasser geowissenschaftlicher Veröffentlichungen.		
Types of Teaching:	S1 (SS): Seminar (1 SWS) S1 (SS): Lectures (1 SWS)		
Pre-requisites:			
Frequency:	yearly in the summer semester		
Requirements for Credit Points:	For the award of credit points it is necessary to pass the module exam. The module exam contains: AP: Scientific manuscript (10 pages) AP: Oral talk [15 min] PVL: Participating in the lectures and seminar PVL have to be satisfied before the examination. Voraussetzung für die Vergabe von Leistungspunkten ist das Bestehen der Modulprüfung. Die Modulprüfung umfasst: AP: Wissenschaftliche Arbeit (10 Seiten) AP: Präsentation [15 min] PVL: Aktive Teilnahme an den Kursen/Vorträgen PVL müssen vor Prüfungsantritt erfüllt sein bzw. nachgewiesen werden.		
Credit Points:	5		
Grade:	The Grade is generated from the examination result(s) with the following weights (w): AP: Scientific manuscript (10 pages) [w: 2] AP: Oral talk [w: 1]		
Workload:	The workload is 150h. It is the result of 30h attendance and 120h self-studies.		

Data:	HRMOB. MA. Nr. 3203	Version: 18.03.2015	Start Year: SoSe 2011
Module Name:	Human Resource Management and Organizational Behavior (HRMOB)		
(English):			
Responsible:	Nippa, Michael / Prof. Dr.		
Lecturer(s):	Nippa, Michael / Prof. Dr.		
Institute(s):	Professor of Management, Leadership and Human Resources		
Duration:	1 Semester(s)		
Competencies:	<p>The primary objective of this course is to help you learn to diagnose management situations so that you will be able to transfer this skill to your working world.</p> <p>Specific objectives of the course include:</p> <ol style="list-style-type: none"> 1. Understanding the relevance of human resources for organizations and the key concepts of human behavior in organizations. 2. Appreciating how the human side of management is an essential complement to the technical skills you are learning in other courses. 3. Learning concepts and approaches that will enable you to analyze HR- and organizational problems and to develop appropriate solutions. 4. Developing the knowledge and skills you need to be a successful manager of yourself and others. 		
Contents:	<ol style="list-style-type: none"> 1. Introduction 2. Organizational Behavior (OB) <ol style="list-style-type: none"> 2.1 Individual level (foundations of individual behavior; impacts of individual characteristics; impact of situational factors) 2.2 Group level (foundations of group behavior, understanding work teams; group processes e.g. communication, power, conflict) 2.3 Leadership 3. Human Resource Management (HRM) <ol style="list-style-type: none"> 3.1 Changing Nature of HRM 3.2 HRM Planning 3.3 Human Resource Adjustments 3.4 Training and Developing HR 3.5 Compensating HR <p>Presentations and Conclusions</p>		
Literature:	<p>Mathis, R.L.; Jackson, J.H.: „Human Resource Management“, 6th Ed. South Western College Publishing: Cincinnati 2006</p> <p>Robbins, S.P.; Judge, T.A.: „Organizational Behavior“, 11th Ed. Pearson Prentice Hall: Upper Saddle River, N.J. 2007</p>		
Types of Teaching:	S1 (SS): Lectures (2 SWS)		
Pre-requisites:	Recommendations: None		
Frequency:	yearly in the summer semester		
Requirements for Credit Points:	<p>For the award of credit points it is necessary to pass the module exam. The module exam contains:</p> <p>KA: Mid term test [20 min]</p> <p>KA: Final test [90 min]</p> <hr/> <p>Voraussetzung für die Vergabe von Leistungspunkten ist das Bestehen der Modulprüfung. Die Modulprüfung umfasst:</p> <p>KA: Zwischentest [20 min]</p> <p>KA: Abschlussklausur [90 min]</p>		

Credit Points:	3
Grade:	The Grade is generated from the examination result(s) with the following weights (w): KA: Mid term test [w: 1] KA: Final test [w: 3]
Workload:	The workload is 90h. It is the result of 30h attendance and 60h self-studies.


Data:	IDEVRES. MA. Nr. 3417	Version: 03.09.2013	Start Year: SoSe 2013
Module Name:	International Development and Resources		
(English):			
Responsible:	Stephan, Johannes / Prof. Dr.		
Lecturer(s):	Stephan, Johannes / Prof. Dr.		
Institute(s):	Professor of International Resource Policy and Economic Development		
Duration:	1 Semester(s)		
Competencies:	Students will be able to understand the implications of management of firms in the environment of developing economies. Companies involved in a region that is characterised by much lower levels of economic development face particular challenges in the management: they have to consider the implications that development strategies, both national and coordinated by international organisations and NGOs, have on their activities. Of particular relevance in developing economies is the role of natural resources that are often abundant and currently their most precious source of national welfare. Students acquire the understanding that natural resources can easily turn into a curse, if they are not included into a coherent national development policy. Those include most prominently export-oriented policies, state-aid policies and the development of national champions, the attraction of foreign direct investments, and incentive systems for outward investment.		
Contents:	Chapter 1 Measuring Development Chapter 2 Theories of Economic Development Chapter 3 Development Policies: Approaches, Failures, and New Consensus? Chapter 4 The Role of Natural Resources for Economic Development and Welfare Chapter 5 Trade Policy in the Framework of Development Policy Chapter 6 Current Issues in Development Policy		
Literature:	Todaro, M. P. (2006): Economic Development, 9th edition, Addison Wesley, New York World Bank Development Report (current years) Various recent Journal articles from e.g. "World Development"; "World Bank Economic Review"; "Journal of Development Economics".		
Types of Teaching:	S1 (SS): Lectures (2 SWS) S1 (SS): Exercises (2 SWS)		
Pre-requisites:	Recommendations: Makroökonomik, 2009-08-18 Mikroökonomische Theorie, 2014-03-05 Knowledge at Bachelor level in business administration is required.		
Frequency:	yearly in the summer semester		
Requirements for Credit Points:	For the award of credit points it is necessary to pass the module exam. The module exam contains: KA [120 min] AP: Presentation [15 min] Voraussetzung für die Vergabe von Leistungspunkten ist das Bestehen der Modulprüfung. Die Modulprüfung umfasst: KA [120 min] AP: Präsentation [15 min]		
Credit Points:	6		
Grade:	The Grade is generated from the examination result(s) with the following weights (w): KA [w: 4]		

	AP: Presentation [w: 1]
Workload:	The workload is 180h. It is the result of 60h attendance and 120h self-studies.

Data:	IREEM. MA. Nr. 2082	Version: 02.09.2009	Start Year: SoSe 2010
Module Name:	International Resource and Environmental Economics and Management		
(English):			
Responsible:	Bongaerts, Jan C. / Prof. Dr.		
Lecturer(s):	Bongaerts, Jan C. / Prof. Dr.		
Institute(s):	Professor of Environmental & Resource Management		
Duration:	1 Semester(s)		
Competencies:	<p>The module is concerned with two issues of particular relevance for East-West economic business, namely the environmental issue and the management of natural resources. Students learn the basic knowledge about environmental management, in particular at the level of (industrial) organisations. Contemporary leading principles, such as sustainability, prudent handling of energy and resources will be introduced. Students will learn how to apply the theoretical principles to practical problems of decision-making and management. In the first part, the module includes a course in Environmental management (EM) that focuses on Standards for management, ISO 14001, PCDA cycle, environmental aspects, Environmental management manual, procedures, Material Safety Data Sheets, and Life Cycle Analysis. The second part is concerned with Sustainability and environmental management (SEM), focusing on definitions, principles of sustainable management, applications of principles by industrial companies, and case studies. The final third part, Economics of Resources (ER), covers optimal control theory and depleteable and renewable resources, population growth and resources, resources in a globalised world, and the resource curse.</p>		
Contents:	<ol style="list-style-type: none"> 1. Environmental management (EM) 2. Sustainability and environmental management (SEM) 3. Economics of Resources (ER) 		
Literature:	<p>A syllabus will be handed out to students at the beginning of the semester</p> <p>Reports by companies on environmental management and on sustainability</p> <p>Websites to be identified in the lectures</p> <p>Kolk, A. (2000) Economics of Environmental Management. Harlow, England: Financial Times Prentice Hall, Pearson Education.</p>		
Types of Teaching:	<p>S1 (SS): Lectures (2 SWS)</p> <p>S1 (SS): Exercises (2 SWS)</p>		
Pre-requisites:	<p>Recommendations:</p> <p>No previous knowledge is required.</p>		
Frequency:	yearly in the summer semester		
Requirements for Credit Points:	<p>For the award of credit points it is necessary to pass the module exam.</p> <p>The module exam contains:</p> <p>KA [90 min]</p> <p>AP: Case studies (15 pages)</p>		
	<p>Voraussetzung für die Vergabe von Leistungspunkten ist das Bestehen der Modulprüfung. Die Modulprüfung umfasst:</p> <p>KA [90 min]</p> <p>AP: Fallstudie (15 Seiten)</p>		
Credit Points:	6		
Grade:	The Grade is generated from the examination result(s) with the following weights (w):		

	KA [w: 4] AP: Case studies (15 pages) [w: 1]
Workload:	The workload is 180h. It is the result of 60h attendance and 120h self-studies.


Data:	QUAGEO. MA. Nr. 3223	Version: 15.07.2014	Start Year: SoSe 2012
Module Name:	Introduction to Quaternary Geology		
(English):			
Responsible:	Breitkreuz, Christoph / Prof. Dr.		
Lecturer(s):	Breitkreuz, Christoph / Prof. Dr.		
Institute(s):	Institute of Geology		
Duration:	1 Semester(s)		
Competencies:	Students will gain knowledge and the ability to understand the basic processes and techniques in the field of Quaternary Geology, and in particular in the field of paleoclimatic variation.		
Contents:	Proxies for paleoclimatic variation in the last 2.5 Million years; chronostratigraphic and other tools for stratigraphic correlation of the Quaternary; important archives: lake- and marine sediments, ice cores; glacial and periglacial processes and glacial sedimentology		
Literature:	Ehlers, J. (1995): Quaternary and glacial geology.- Wiley & Son, New York, 578S. Elias, S.A. (Ed.)(2007): Encyclopedia of Quaternary science.- Elsevier, 4 volumes, 3365 pp.		
Types of Teaching:	S1 (SS): Lectures (2 SWS) S1 (SS): Field trip / Practical Application (1 d)		
Pre-requisites:	Recommendations: Grundlagen der Geowissenschaften für Nebenhörer, 2014-02-03 Principles of Geoscience (Secondary Subject) or equivalent moduls		
Frequency:	yearly in the summer semester		
Requirements for Credit Points:	For the award of credit points it is necessary to pass the module exam. The module exam contains: KA [90 min] PVL: Successful participation in the field trip PVL have to be satisfied before the examination. Voraussetzung für die Vergabe von Leistungspunkten ist das Bestehen der Modulprüfung. Die Modulprüfung umfasst: KA [90 min] PVL: Erfolgreiche Teilnahme an der Exkursion PVL müssen vor Prüfungsantritt erfüllt sein bzw. nachgewiesen werden.		
Credit Points:	3		
Grade:	The Grade is generated from the examination result(s) with the following weights (w): KA [w: 1]		
Workload:	The workload is 90h. It is the result of 38h attendance and 52h self-studies. Self-studies include assignments, preparation and wrapping up of lectures as well as preparation of examinations.		

Data:	SUSLSE. MA. Nr. 088	Version: 01.01.2014 	Start Year: SoSe 2014
Module Name:	Licensing, Stakeholder Involvement and Expectation Management		
(English):			
Responsible:	Jakubick, Alexander / Dr. Bongaerts, Jan C. / Prof. Dr.		
Lecturer(s):			
Institute(s):	Professor of Environmental & Resource Management		
Duration:	1 Month(s)		
Competencies:	<p>Upon completion of industrial activity at a given site (e.g., mining, chemical production), liabilities must be investigated, assessed, and removed/remediated with respect to safe usage in the future. This is an iterative decision process involving many parties, often with conflicting interests and different ways to influence the outcome of this decision process. This module addresses the need to handle public inquiries, concerns, or conflicts on environmental and remediation issues. It shows environmental managers, regulators and public servants in this field, and consultants at industrial facilities how to identify the causes of environmental issues and concerns, create community relations programs to address issues or establish a proactive dialogue to prevent or minimise future environmental conflicts, and handle technical and risk communication in a highly efficient manner.</p> <p>The aspects which have to be observed within such a complex process include (but are not restricted to)</p> <ul style="list-style-type: none"> • legal requirements, • economic conditions, • environmental objectives and regional political aims, • communication, information management and negotiation methods. <p>The subjects will be presented using overview texts and summary texts, graphs, and case studies. Discussions among students and between tutors and students will be facilitated by electronic means of communication such as email and a web-based discussion platform. Special emphasis will be laid on presentation of selected cases and discussion of critical parameters like timing cost, communication problems, information handling. Students will be trained in groups and individually. This module will also feature checklists, forms and worksheets as tools for further reference in the daily work.</p>		
Contents:	<p>Expectations by the various stakeholders are identified as driving forces within a remediation project. The management of expectations of all involved stakeholders as well as transparent assessment and decision procedures are a core ingredient of this module, and will be discussed using case studies from a great variety of real-world projects and experiences. Students will be encouraged to contribute their personal and professional experiences to the module in order to both focus the content to the specific needs of the audience and to demonstrate the great cultural variety of negotiation and management styles.</p>		
Literature:	<p>John D. Leshy: The Mining Law: A Study in Perpetual Motion, Resources for the Future, ISBN: 0915707268, ISBN-13: 9780915707263, 542pp, 1987;</p> <p>Warren Richard Plunkett, Raymond F. Attner, Gemmy Allen: Management: Meeting and Exceeding Customer Expectations, Thomson - South Western, 2005, ISBN 0324259131, 742 pp</p>		


Types of Teaching:	S1 (SS): Lectures (4 d) S1 (SS): Seminar (1 d)
Pre-requisites:	Recommendations: No previous knowledge of management is required.
Frequency:	yearly in the summer semester
Requirements for Credit Points:	For the award of credit points it is necessary to pass the module exam. The module exam contains: KA [120 min] PVL: Preparation and presentation of a project on a practical case PVL have to be satisfied before the examination. Voraussetzung für die Vergabe von Leistungspunkten ist das Bestehen der Modulprüfung. Die Modulprüfung umfasst: KA [120 min] PVL: Ausarbeitung und Vorstellung eines Projekts zu einem Fallbeispiel PVL müssen vor Prüfungsantritt erfüllt sein bzw. nachgewiesen werden.
Credit Points:	6
Grade:	The Grade is generated from the examination result(s) with the following weights (w): KA [w: 1]
Workload:	The workload is 180h. It is the result of 40h attendance and 140h self-studies.

Data:	METHYDR. BA. Nr. 182	Version: 11.02.2010	Start Year: SoSe 2008
Module Name:	Meteorology, Climatology, Hydrology		
(English):			
Responsible:	Matschullat, Jörg / Prof. Dr.		
Lecturer(s):	Matschullat, Jörg / Prof. Dr. Zimmermann, Frank / Dr. Dunger, Volkmar / PD Dr.		
Institute(s):	Institute of Mineralogy Institute of Geology		
Duration:	1 Semester(s)		
Competencies:	Successful participants know the basics of Meteorology and Climatology as well as Hydrology. They learnt to understand the most important parameters and processes and to interpret related results. The links between the partial modules is a prerequisite for any application of models and the understanding of more complex and advanced tasks in Atmospheric and Climate Science and in Hydrology.		
Contents:	Atmospheric dynamics, radiation budget, global energy balance, meteorological parameters, global, regional, local climates and their dynamics, paleoclimatology, climate change. Hydrological cycle and water budgets, precipitation formation, heavy rain and design depth of precipitation, snow accumulation and ablation, evapotranspiration determination and calculation, discharge formation, concentration and dynamics.		
Literature:	Barry RG, Chorley RJ (2003) Atmosphere, weather and climate. 8th ed. Routledge; Dyck S, Peschke G (1995) Grundlagen der Hydrologie. 3. Aufl. Verlag für Bauwesen, Berlin; Emeis S (2000) Meteorologie in Stichworten. Hirt Verlag; Hupfer P, Kuttler W (2005) Witterung und Klima. 11. Aufl. Teubner Verlag; Kraus H (2004) Die Atmosphäre der Erde. 3. Aufl. Springer Verlag; Maidment, DR (1992) Handbook of Hydrology. McGraw-Hill; Maniak U (2005) Hydrologie und Wasserwirtschaft. Eine Einführung für Ingenieure. 5. Aufl. Springer-Verlag; Schönwiese CD (2008) Klimatologie. 3. Aufl. Ulmer Verlag; Zmarsly E, Kuttler W, Pethe H (2007) Meteorologisch-klimatologisches Grundwissen. Eine Einführung mit Übungen, Aufgaben und Lösungen. 3. Aufl. Ulmer Verlag		
Types of Teaching:	S1 (SS): Lectures (4 SWS) S1 (SS): Alternating Met-Hydr / Exercises (2 SWS)		
Pre-requisites:	Recommendations: Höhere Mathematik I für naturwissenschaftliche Studiengänge, 2014-06-01 Höhere Mathematik II für naturwissenschaftliche Studiengänge, 2014-06-01 Physik für Naturwissenschaftler I, 2012-05-10 Physik für Naturwissenschaftler II, 2012-05-10		
Frequency:	yearly in the summer semester		
Requirements for Credit Points:	For the award of credit points it is necessary to pass the module exam. The module exam contains: KA [90 min]		
	Voraussetzung für die Vergabe von Leistungspunkten ist das Bestehen der Modulprüfung. Die Modulprüfung umfasst: KA [90 min]		

Credit Points:	6
Grade:	The Grade is generated from the examination result(s) with the following weights (w): KA [w: 1]
Workload:	The workload is 180h. It is the result of 90h attendance and 90h self-studies. The latter comprises preparatory work and repetitions of the lectures and exercises and exam preparations.


Data:	MWGEOMO. MA. Nr. 2089	Version: 01.06.2014 	Start Year: WiSe 2014
Module Name:	Mine Water: Hydrogeology and Modeling		
(English):			
Responsible:	Merkel, Broder / Prof. Dr.		
Lecturer(s):			
Institute(s):	Institute of Geology		
Duration:	1 Month(s)		
Competencies:	The students will improve their knowledge on Hydrogeology and in particular in the field of groundwater flow and transport with special emphasis on mining and rehabilitation and remediation of mining related problems. They will be able to understand basic and complex mining related groundwater problems and to evaluate numerical groundwater models.		
Contents:	<ul style="list-style-type: none"> • Basic of hydraulic subsurface flow in granular and fractured rocks • Basic of transport of contaminants in seepage and groundwater • Basic of water balance in particular in mining environments • Analytical and numerical modeling • Pros and cons of FD and FE models • Setting up a 3d steady state flow and transport model, discretization, parameterization, defining boundary conditions, defining sinks and sources • Manual and inverse calibration, sensitivity analysis • Special aspects of dewatering open pit and deep mines, groundwater recovery and mine flooding 		
Literature:	Domenico & Schwartz (1996): Physical and Chemical Hydrogeology, Wiley & Sons Anderson & Woessner (1992): Applied Groundwater modeling - Simulation of flow and advective transport, Academic Press		
Types of Teaching:	S1 (WS): block course / Lectures (5 d) S1 (WS): block course / Practical Application (5 d)		
Pre-requisites:	Recommendations: Physik für Naturwissenschaftler II, 2014-06-02 Physik für Naturwissenschaftler I, 2014-06-02 Grundlagen der Hydrogeologie, 2009-08-11 Grundlagen der Geowissenschaften für Nebenhörer, 2014-02-03 Basic knowledge of physics, geology, and hydrogeology.		
Frequency:	each semester		
Requirements for Credit Points:	For the award of credit points it is necessary to pass the module exam. The module exam contains: KA [120 min] AP: Report 1 related to the practicals AP: Report 2 related to the practicals PVL: Home assignment PVL have to be satisfied before the examination. Voraussetzung für die Vergabe von Leistungspunkten ist das Bestehen der Modulprüfung. Die Modulprüfung umfasst: KA [120 min] AP: Belegarbeit 1 AP: Belegarbeit 2 PVL: Hausarbeit PVL müssen vor Prüfungsantritt erfüllt sein bzw. nachgewiesen werden.		
Credit Points:	6		
Grade:	The Grade is generated from the examination result(s) with the following		


	weights (w): KA [w: 1] AP: Report 1 related to the practicals [w: 1] AP: Report 2 related to the practicals [w: 1]
Workload:	The workload is 180h. It is the result of 80h attendance and 100h self-studies. The latter comprises time for preparation and homework as well as preparation for exams.

Data:	ORGGCOMM. MA. Nr. 3366	Version: 17.04.2013 	Start Year: SoSe 2013
Module Name:	Organizational Communication		
(English):			
Responsible:	Hinner, Michael B. / Prof. Dr.		
Lecturer(s):	Hinner, Michael B. / Prof. Dr.		
Institute(s):	Professor of Business English, Business Communication and Intercultural Communication		
Duration:	1 Semester(s)		
Competencies:	The module seeks to transmit the theoretical foundation for organizational communication and apply it in a real world context (e.g. the resource industry, engineering, etc.) to see how effective internal and external communication can transmit competence, credibility, and ethics to all essential stakeholders within and without organizations as well as the public at large.		
Contents:	<p>The module consists of one lecture and one tutorial and is structured as follows:</p> <ol style="list-style-type: none"> 1. The lecture focuses on the following communication topics: Organizational communication theory, social components of communication, social networks, diversity and communication, identity, corporate culture and communication, power and communication, negotiation, attitudes, and persuasion, conflict communication, internal and external communication, formal and informal communication, stakeholder communication, crisis communication, globalization, technology and communication. 2. The tutorial integrates the above topics into an applied context (e.g. the resource industry, engineering, etc.). Participants will analyze and discuss the topics and contexts in small groups and present the results informally and formally throughout the semester. <p>The module is taught in English and the assignments have to be completed in English.</p>		
Literature:	<p>The script is sold at the beginning of the semester.</p> <p>Conrad, C., & Poole, M.S. (2002). Strategic organizational communication, Fort Worth: Harcourt. Hinner, M.B., Ed. (2007, 2010). Freiburger Beiträge zur interkulturellen und Wirtschaftskommunikation, Volume 3 and 6. Frankfurt am Main: Peter Lang. Keyton, J. (2005). Communication and organizational culture: A key to understanding work experiences. Thousand Oaks: Sage. May, S., & Mumby, D.K. (2005). Engaging organizational communication theory and research. Thousand Oaks: Sage.</p>		
Types of Teaching:	<p>S1 (SS): Lectures (2 SWS)</p> <p>S1 (SS): Exercises (2 SWS)</p>		
Pre-requisites:	Recommendations: Abitur-level English, or equivalent knowledge of English.		
Frequency:	yearly in the summer semester		
Requirements for Credit Points:	<p>For the award of credit points it is necessary to pass the module exam.</p> <p>The module exam contains:</p> <p>KA* [90 min]</p> <p>AP*: Active Written and Oral Participation, Presentations, and Assignments in the Course</p>		

	<p>* In Modules with more than one exam, this exams has to be pass successfully respectively has to have a result at least "ausreichend" (4,0).</p> <p>Voraussetzung für die Vergabe von Leistungspunkten ist das Bestehen der Modulprüfung. Die Modulprüfung umfasst: KA* [90 min] AP*: Aktive schriftliche und mündliche Teilnahme, Präsentation und Belegarbeiten in der Veranstaltung</p> <p>* Bei Modulen mit mehreren Prüfungsleistungen muss diese Prüfungsleistung bestanden bzw. mit mindestens "ausreichend" (4,0) bewertet sein.</p>
Credit Points:	6
Grade:	<p>The Grade is generated from the examination result(s) with the following weights (w): KA* [w: 4] AP*: Active Written and Oral Participation, Presentations, and Assignments in the Course [w: 1] * In Modules with more than one exam, this exams has to be pass successfully respectively has to have a result at least "ausreichend" (4,0).</p>
Workload:	<p>The workload is 180h. It is the result of 60h attendance and 120h self-studies. Self-study time includes reading the relevant literature, preparation and follow-up work for in-class participation as well as preparation time for the written exam, i.e. "Klausurarbeit" and the assignments.</p>

Data:	SUSRAD. MA. Nr. 2091	Version: 17.12.2014	Start Year: SoSe 2015
Module Name:	Radioactivity		
(English):			
Responsible:	Mischo, Helmut / Prof. Dr.-Ing.		
Lecturer(s):	Mischo, Helmut / Prof. Dr.-Ing. Weyer, Jürgen / Dr.-Ing.		
Institute(s):	Institute of Mining and Special Civil Engineering		
Duration:	1 Semester(s)		
Competencies:	Basic knowledge of radioactive decay, measurement of radiation, units, technique of sampling, decontaminations techniques, ventilation		
Contents:	<ul style="list-style-type: none"> • Radioactive decay • Special consideration of Rn222 and Radon decay • Products • ICRP principles • Protection against radiation • Measurement and sampling • Pathways • Risk analysis • Optimal remedial procedures • Decontamination techniques • Ventilation systems • Gases • Airway resistance 		
Literature:	ICRP publications, especially ICRP 43 and 65, conference proceedings		
Types of Teaching:	S1 (SS): 45 hours / Lectures (3 SWS) S1 (SS): seminars and practical training, excursions to rehabilitation sites - 45 hours / Practical Application (3 SWS)		
Pre-requisites:	Recommendations: Fundamentals in engineering and natural science		
Frequency:	yearly in the summer semester		
Requirements for Credit Points:	<p>For the award of credit points it is necessary to pass the module exam. The module exam contains: MP [30 min] PVL: Project report PVL have to be satisfied before the examination.</p> <p>Voraussetzung für die Vergabe von Leistungspunkten ist das Bestehen der Modulprüfung. Die Modulprüfung umfasst: MP [30 min] PVL: Projektbericht PVL müssen vor Prüfungsantritt erfüllt sein bzw. nachgewiesen werden.</p>		
Credit Points:	6		
Grade:	The Grade is generated from the examination result(s) with the following weights (w): MP [w: 1]		
Workload:	The workload is 180h. It is the result of 90h attendance and 90h self-studies. The latter includes industrial placement.		

Data:	BBREKL. MA. Nr. 2087	Version: 13.07.2014 	Start Year: SoSe 2014
Module Name:	Reclamation		
(English):			
Responsible:	Drebenstedt, Carsten / Prof. Dr.		
Lecturer(s):	Drebenstedt, Carsten / Prof. Dr.		
Institute(s):	Institute of Mining and Special Civil Engineering		
Duration:	1 Semester(s)		
Competencies:	The module provides the development of expertise and methodological skills in the field of mining engineering. The students learn the theory and practice of reclamation in mining as essential element of balance for mining impacts. They understand the parallelism of mine and reclamation planning and the fact, why reclamation can exceed the mine project phase. Additionally the students will be qualified to explain scientifically reclamation measures, plan technical measures and calculate the financial expenses.		
Contents:	<ul style="list-style-type: none"> • Impacts of mining and its effects • Legal requirements for permission • Scientific fundamentals of reclamation (soil, ground water balance,...) • Concepts • Utilization requirements and realization in the post-mining landscaping (agriculture, forestry, waterbodies, nature protection, recreation, miscellaneous) • Case studies 		
Literature:	Pflug (Hrsg.), 1998, Braunkohlentagebau und Rekultivierung, Springer Verlag Olschowy, Bergbau und Landschaft, 1993, Paray Verlag Gilscher, Bruns, 1999, Renaturierung von Abbaustellen, Verlag Eugen Ulmer Stuttgart		
Types of Teaching:	S1 (SS): Lectures (3 SWS) S1 (SS): Exercises (2 SWS) S1 (SS): Practical Application (1 SWS)		
Pre-requisites:	Recommendations: Mathematic-scientific fundamentals		
Frequency:	yearly in the summer semester		
Requirements for Credit Points:	For the award of credit points it is necessary to pass the module exam. The module exam contains: MP/KA (KA if 21 students or more) [MP minimum 30 min / KA 60 min] PVL: Submission and positive evaluation of module exercises PVL: Participation in 2 excursions of the chair Surface-Mining PVL have to be satisfied before the examination. Voraussetzung für die Vergabe von Leistungspunkten ist das Bestehen der Modulprüfung. Die Modulprüfung umfasst: MP/KA (KA bei 21 und mehr Teilnehmern) [MP mindestens 30 min / KA 60 min] PVL: Erfolgreicher Abschluss der Übungsaufgaben PVL: 2 Fachexkursionen Tagebau PVL müssen vor Prüfungsantritt erfüllt sein bzw. nachgewiesen werden.		
Credit Points:	6		
Grade:	The Grade is generated from the examination result(s) with the following weights (w): MP/KA [w: 1]		
Workload:	The workload is 180h. It is the result of 90h attendance and 90h self-studies. Self-study includes autonomous and instructed preparation and performance of follow-up course work and examination preparation.		

Daten:	RU AMRD. BA. Nr. 3450	Stand: 02.03.2014 	Start: SoSe 2013
Modulname:	Russisch AMRD		
(englisch):	Russian AMRD		
Verantwortlich(e):	Seidel, Birgit / Dipl.-Slaw.		
Dozent(en):	Seidel, Birgit / Dipl.-Slaw.		
Institut(e):	Fachsprachenzentrum		
Dauer:	1 Semester		
Qualifikationsziele / Kompetenzen:	Der Teilnehmer erwirbt ausbaufähige Grundkenntnisse und Fertigkeiten der mündlichen und schriftlichen Kommunikation, wobei besonderer Wert auf Kommunikation zu Alltagsthemen gelegt wird.		
Inhalte:	Alltags- und studienbezogene Themen Vorbereitung auf Studium in Dnepropetrvsk		
Typische Fachliteratur:	Russisch für Anfänger MOCT 1 (Lehrbuch und Arbeitsbuch) sowie Zusatztexte und -materialien aus verschiedenen Medien (Presse, Prospekte, Internet)		
Lehrformen:	S1 (SS): Vorlesung (2 SWS) S1 (SS): Übung (2 SWS)		
Voraussetzungen für die Teilnahme:	Empfohlen: Vorkenntnisse aus dem Anfängerkurs in Leoben		
Turnus:	jährlich im Sommersemester		
Voraussetzungen für die Vergabe von Leistungspunkten:	Voraussetzung für die Vergabe von Leistungspunkten ist das Bestehen der Modulprüfung. Die Modulprüfung umfasst: KA [90 min] PVL: Teilnahme am Unterricht (mind. 80%) PVL müssen vor Prüfungsantritt erfüllt sein bzw. nachgewiesen werden.		
Leistungspunkte:	4		
Note:	Die Note ergibt sich entsprechend der Gewichtung (w) aus folgenden(r) Prüfungsleistung(en): KA [w: 1]		
Arbeitsaufwand:	Der Zeitaufwand beträgt 120h und setzt sich zusammen aus 60h Präsenzzeit und 60h Selbststudium. Letzteres umfasst die Vor- und Nachbereitung von Lehrveranstaltungen sowie die Vorbereitung auf die Klausur.		

Data:	SUSTMAN. MA. Nr. 2908	Version: 12.03.2013	Start Year: SoSe 2013
Module Name:	Sustainability Management		
(English):			
Responsible:	Bongaerts, Jan C. / Prof. Dr.		
Lecturer(s):	Bongaerts, Jan C. / Prof. Dr. Gurita, Nicoleta / MBA IMRE		
Institute(s):	Professor of Environmental & Resource Management		
Duration:	1 Semester(s)		
Competencies:	The aim of teaching of this cluster is that students get familiar with the concept of sustainability, its scope and the interrelation between the economic, social and ecological dimensions. It is intended that students will develop the ability to critically assess situations and make appropriate decisions as well as develop further their personal communication skills while working in teams and participating in lecture activities.		
Contents:	<p>Since there are several angles to the theme of sustainable development the course starts with the fundamentals by providing a comprehensive theoretical overview of the concept of sustainable development. The course follows then with a more practical oriented approach using case studies. Throughout the course students will get good understanding of the implications of several approaches to sustainability for policy making, environmental management and inter-disciplinary research. Teaching is combined with assignments, group activities and guest lectures. The course is structured as follows:</p> <ol style="list-style-type: none"> 1. The concept of sustainability 2. Conceptual and theoretical foundations of sustainability (part I and II) 3. Sustainability indicators and Reporting Frameworks 4. Life Cycle Assessment - Concept Overview - 5. Introduction to Sustainable Banking and Sustainable Asset Management 6. Global Trends in Sustainability 		
Literature:	<p>Environmental issues: an introduction to sustainability, McConnell, Robert L. (2008)</p> <p>Sustainability: a systems approach, Clayton, Anthony M.H. (1996)</p> <p>The clean development mechanism, sustainable development and its assessment, Burian, Martin (2006)</p> <p>Carbon Finance - The Financial Implications of Climate Change, Labatt S. & White R.R. (2007)</p>		
Types of Teaching:	<p>S1 (SS): Lectures (1 SWS)</p> <p>S1 (SS): Exercises (1 SWS)</p>		
Pre-requisites:	Recommendations: No previous knowledge and skills is required.		
Frequency:	yearly in the summer semester		
Requirements for Credit Points:	<p>For the award of credit points it is necessary to pass the module exam. The module exam contains:</p> <p>AP: term paper</p> <p>AP: paper presentation</p>		
	<p>Voraussetzung für die Vergabe von Leistungspunkten ist das Bestehen der Modulprüfung. Die Modulprüfung umfasst:</p> <p>AP: Belegarbeit</p> <p>AP: Präsentation der Belegarbeit</p>		

Credit Points:	3
Grade:	The Grade is generated from the examination result(s) with the following weights (w): AP: term paper [w: 7] AP: paper presentation [w: 3]
Workload:	The workload is 90h. It is the result of 30h attendance and 60h self-studies.

Freiberg, den 15. Juni 2015

gez.
Prof. Dr.- Ing. Bernd Meyer
Rektor

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