APPLICATION COVER PAGE

EDNA BAILEY SUSSMAN FUND

Applicant's name: Yang Yang

Date: January 30, 2017

Address: 134 Remington Ave
Apartment E
Syracuse, NY 13210

ESF program: Department of Environmental Science

Telephone number: (315)-420-3316

Faculty sponsor: Ruth D. Yanai

Email: yyang100@syr.edu

Internship organization and address:

Department of Biology
Boston University
5 Cummington Way
Boston, MA 02215

Internship objectives:

Study the effects of climate change on mercury cycling in forests by measuring mercury entering the soil via throughfall and leaving via evasion in a series of climate change experiments that simulate drought, ice storms, soil warming in the growing season, and soil freezing in the winter due to loss of snow pack.

Period of work: May 22, 2017 through August 25, 2017 (14 weeks)

Salary provided by organization: None

Amount requested from Sussman fund: $7,350.00

Faculty sponsor

(Signature)

Applicant

(Signature)

Mercury, a neurotoxic pollutant, has increased greatly even in remote, forested areas due to emissions from human activities such as gold mining and coal combustion. Forest soils are an important pool of mercury, serving as a net sink globally, but they can also re-emit mercury to the atmosphere. Throughfall has been studied as a source of mercury washed from leaves to forest soils by rain. Soil evasion of mercury is more difficult to measure and is less often measured. Both inputs and outputs may be sensitive to climate change. The effect of droughts, ice storms, soil warming in the growing season, and soil freezing due to loss of snow pack in the winter may all have important effects on mercury fluxes that are currently unknown.

Supported by funding from the Edna B. Sussman foundation, I propose to investigate soil mercury evasion and throughfall mercury in forested ecosystems. This project will be conducted as an internship with Pam Templer of Boston University. The main objective is to quantify throughfall inputs of mercury and soil evasion of mercury in four climate change experiments during the growing season, from May to August. The differences from a reference site are expected to be:

	Drought plot	Ice storm plot	Soil warming plot	Soil freezing plot
Throughfall mercury	No change	Decrease	Increase	Decrease
Soil mercury evasion	Decrease	Decrease	Increase	Increase

We will make use of four existing manipulation studies at the Hubbard Brook Experimental Forest, New Hampshire, USA: throughfall exclusion (drought plot), the ice storm study, and the Climate Change Across Seasons Experiment, which includes soil warming and soil freezing treatments. There will be two control plots near the four treatment plots. For throughfall mercury fluxes, two collectors will be deployed in each treatment and control plot. Throughfall samples will be collected every 2 weeks from May to July, and analyzed using a cold-vapor atomic fluorescence spectrometer in August. For soil evasion measurements, one location will be monitored in each treatment and control plot. Soil evasion will be measured for several 24-h periods to observe daytime and nighttime evasion fluxes using two dynamic flux chambers connected to a Tekran 2537A gaseous mercury auto-analyzer. This analysis will make it possible to predict the impact of expected climate changes on inputs and output of mercury in the Northeastern forest soils.

My internship will be supervised by Dr. Pamela H. Templer, an expert on climate change at Boston University. Dr Pamela H. Templer will assist with the design of the experiment and will oversee the execution of this internship by email, telephone, and visits to the site. This project is related to my current dissertation research on mercury in tree tissues across northeastern forests f. Results will be presented at the annual Hubbard Brook Cooperator's Meeting and prepared for publication in scientific journals All written and oral presentations of this project will recognize the Edna B. Sussman Foundation for its support.

BUDGET JUSTIFICATION

The proposed internship will begin Monday, May 22, 2017 and end Friday, August 25, 2017. I will work 35 hours per week for the entire 14 week duration. I am requesting a salary of $13 per hour.

$15.00/hour x 35 hours/week x 14 weeks = $7,350.00

Total Funds Requested: $7,350.00

Yang Yang (315) 420-3316

134 Remington Ave, Apt E, Syracuse NY 13210 yyang100@ syr.edu

EDUCATIONAL BACKGROUND

State University of New York 2015-current
College of Environmental Science and Forestry, Syracuse, NY
PhD. candidate in Environmental Science

State University of New York 2015
College of Environmental Science and Forestry, Syracuse, NY
M.S. in Forest and Natural Resources Management

Minzu University of China, Beijing, China 2012
B.S. in Environmental Science

PUBLICATIONS

Yang Y., Yanai, D.R., Montesdeoca, M., and Driscoll, C.T. 2016. Methods for sample preparation and analysis of mercury in wood. International Journal of Environmental Analytical Chemistry. (under review).

Yang, Y., See, C.R., Yanai, R.D., and Arthur M.A. Sampling intensity and uncertainty in litterfall mass and nutrient flux in northern hardwoods. (under revision).

Aulenbach, B.T., Burns, D.A., Shanley, J.B., Yanai, R.D., Bae, K., Wild, A., **Yang, Y**., and Yi, D. 2016. Approaches to stream solute load estimation for solutes with varying dynamics from five diverse small watersheds. Ecosphere. 7(6).

Yang, Y., Yanai, R. D., Fatemi, F. R., Levine, C. R., Lilly, P. J., and Briggs, R. D. 2015. Sources of variability in tissue chemistry in northern hardwood species. Canadian Journal of Forest Research. 46: 1-12.

Germain, R.H., R.D. Yanai, A.K. Mishler, **Y. Yang** and BB Park. 2014. Landscape and Individual Tree Predictors of Dark Heart Size in Sugar Maple. Journal of Forestry.113: 20-29.

PROFESSIONAL EXPERIENCE

SUNY College of Environmental Science and Forestry Spring 2016-17
Research Assistant (Ruth Yanai's lab)

- Organized and managed a research team to collect tree tissue samples from four states in Northeastern USA.
- Analyzed tissue and maple sap samples for mercury concentration using freeze-dryer, freeze-mill and total mercury analyzer at Syracuse University.
- Performed statistical analysis of root nutrient concentration, litterfall mass and loon mercury concentration.

SUNY College of Environmental Science and Forestry Fall 2015–16
Teaching Assistant, General Chemistry II and Introduction of Chemistry

- Taught two laboratory sections, graded lab reports and exams, held weekly office hours.

Syracuse City School District Spring 2015

Instructor, Natural science and chemistry

- Developed syllabus, lectured, and designed experiments for Fifth grade at Dr. King Elementary School and Van Duyn Elementary School.
- Coordinated the production and distribution of print and web-based information materials.
- Generated evaluations and reports for elementary mentoring program.

SUNY College of Environmental Science and Forestry Fall 2012–14

Teaching Assistant, General Chemistry II and Introduction of Chemistry

- Taught two laboratory sections, graded lab reports and exams, held weekly office hours.

SUNY College of Environmental Science and Forestry Spring and Summer 2014

Research Project Collaborator

- Collaborated with PIs to design the experiments of measuring mercury in wood, helped write the proposal and received $5,700 as a seed grant at ESF.
- Collected tree disc samples in the Hubbard Brook Experimental Forest, prepared wood samples using different drying temperature, analyzed total mercury concentrations using the Milestone Analyzer.

United States Department of Agriculture Forest Service Summer 2013

Research Intern in Northern Research Station

- Wrote proposals to Research Approval Committee in Hubbard Brook Experimental Forest and received the approval of collecting tree samples in watershed 7.
- Collected samples and analyzed nutrient concentrations in different tree components by tissue positions using CN-analyzer and ICP-MS.

SUNY College of Environmental Science and Forestry Spring 2012-14

Research Assistant (Ruth Yanai's lab)

- Assisted with monitoring soil respiration, taking minirhizotron images and doing tree inventory in the Bartlett Experiment Forest.
- Modeled streamflow datasets using composite, regression and linear interpolation methods, calculated the loads and related bias for four solutes.
- Performed uncertainty analysis of litterfall mass and nutrient concentrations using bootstrapping.
- Collected tree samples in Huntington Wildlife Forest, analyzed nutrient concentrations in tree samples using CN-analyzer and ICP-MS.

Minzu University of China, Beijing, China Spring 2012

Field and Lab Technician (Jinchao Feng's lab)

- Measured plant respiration rate using IRGA along with soil moisture.
- Assisted with soil sampling and data management.
- Prepared reagents and pre-set instruments for Environmental Monitoring laboratory sections.

Chinese Research Academy of Environmental Science (CRAES), Beijing, China Spring 2011

Research Intern in Environmental Ecological Research Institute

- Ground soil samples, performed acid digestion and ICP analysis.
- Assisted with data management, analysis and report writing.

Minzu University of China, Beijing, China 2009-10

Project Leader

- Organized and managed a research team, wrote proposals and received $4,700 from Program of 985 Project Foundation of MUC (MUC985-09) and Undergraduate Research Training Program of MUC (URTP201011071).
- Performed nitrogen fertilization in urban greenings and remote forests, collected soil samples, analyzed physical and chemical properties.
- Performed data management and analysis, wrote and presented a report.

PRESENTATIONS

Yang, Y., R.D. Yanai, F.R. Fatemi, C.R. Levine, P.J. Lilly, and R.D. Briggs. Sources of variability in tissue chemistry in northern hardwood species. American Geophysical Union Fall Meeting, San Francisco, CA. December 12, 2016.

R.D. Yanai., **Yang, Y**., M. Montesdeoca., and C.T. Driscoll. The Importance of Mercury in Leaves, Bark and Wood of Eight Tree Species across Four Northeastern Forests. American Geophysical Union Fall Meeting, San Francisco, CA. December 14, 2016.

Yang, Y., R.D. Yanai., M. Montesdeoca., and C.T. Driscoll. Measuring Mercury in Wood: Important but Challenge. Ecological Society of America Annual Meeting, Fort Lauderdale, FL, August 10, 2016.

Yang Y., Wild D.A., Yanai D.R., Montesdeoca M., and Driscoll T.C. Tapping clonal sugar maple provides an opportunity to test for genetic control of mercury uptake by trees. State University of New York Environmental Science and Forestry. Spotlight of poster session. April 19th 2016.

Yang, Y., R.D. Yanai., M. Montesdeoca., and C.T. Driscoll. Measuring Mercury in Wood: Important but Challenge. SUNY/CUNY Graduate Research Poster Session. Albany, NY. February 11, 2015.

Yang, Y., R.D. Yanai., M. Montesdeoca., and C.T. Driscoll. Measuring Mercury in Wood: Important but Challenge. New York Society of American Foresters Meeting, Syracuse, NY. January 22, 2015.

Yang, Y. Detecting differences of tissue chemistry in four northern hardwoods tree species. Presentation in defense of Masters Thesis, SUNY-ESF, Syracuse, NY. November 14, 2014.

Yang, Y., R.D. Yanai., M. Montesdeoca., and C.T. Driscoll. Measuring Mercury in Wood: Important but Challenge. American Geophysical Union Fall Meeting, San Francisco, CA. December 18, 2014.

Yang, Y., R.D. Yanai, and R.D. Briggs. Detecting differences of tissue chemistry in four northern hardwoods tree species. Ecological Society of America Annual Meeting, Sacramento, CA. August 14, 2014

Yang, Y., C.R, See, and R.D. Yanai. Sampling intensity and uncertainty in litterfall mass and nutrient flux in northern hardwoods. Ecological Society of America Annual Meeting Later Poster Session, Sacramento, CA. August 15, 2014

Yang, Y., R.D. Yanai, and R.D. Briggs. Detecting differences of tissue chemistry in four northern hardwoods tree species. SUNY-ESF Spotlight on Graduate Student Research, Syracuse, NY.

Yang, Y. Source of variability in tissue chemistry in northern hardwood species. New York Society of American Foresters Meeting, Syracuse, NY. January 23, 2014

Aulenbach, B.T., D.A. Burns., J.B. Shanley., R.D. Yanai., KiKiang. Bae., A.D. Wild., **Y. Yang**., and Y. Dong. Uncertainty of streamwater solute fluxes in five contrasting headwater catchments

including model uncertainty and natural variability. American Geophysical Union Fall Meeting, San Francisco, CA. December 10, 2013

Yang, Y. Detecting change over time in tree tissue chemistry. Rochester Academy of Science Fall Paper Session, Rochester, NY. November 9, 2013

Yang, Y, and R.D. Yanai. Detecting change over time in tree tissue chemistry Hubbard Brook 50th Cooperator's Meeting, Hubbard Brook Experimental Forest, NH. July 10, 2013

Yang, Y, and Jinchao FENG. Effects of simulated nitrogen deposition on soil microbial quantities in Fragrant Mountain in Beijing Undergraduate Research and Training Program Report Session, Minzu University of China, BJ, China. December 25, 2010

FELLOWSHIPS, GRANTS, AWARDS, AND CERTIFICATE

Graduate Student Travel Grant SUNY-ESF (2016 spring and fall)
C. Eugene Farnsworth Fellowship Dept Forest and Natural Resources Management, SUNY-ESF (2015)
Graduate Student Travel Grant Dept Forest and Natural Resources Management, SUNY-ESF (2014)
Certificate of Level-1 Game of Logging Chainsaw Training Bill Lindloff's ProCUTS (2013)
Sussman Foundation Fellowship Edna Bailey Sussman Foundation (2013)
Second-class scholarship Minzu University of China, China (2012)
Second prize of 2nd Chemical Experiment Competition Minzu University of China, China (2010)
Second prize of 1st Biological Experiment Competition Minzu University of China, China (2010)
Second-class scholarship Minzu University of China, China (2010)
First-class scholarship Minzu University of China, China (2009)
Undergraduate Research Training Grant Minzu University of China, China (2009)

ESF
State University of New York
College of Environmental Science and Forestry

Department of Forest and Natural Resources Management

January 29, 2017

To The Edna Bailey Sussman Foundation:

I am writing in support of Yang Yang's application for a Sussman Internship from May 22 to August 25, 2017. The internship will be with Boston University, with Pamela Templer as the internship supervisor. Pamela Templer is a leading expert in the field of climate change in natural systems, and it is a credit to Yang that Pamela has agreed to mentor him in this project Pam will supervise and evaluate the project, and I will be keenly interested in it as well. Pam will have regular contact with Yang, both electronic and in person, due to her involvement in the Hubbard Brook Ecosystem Study.

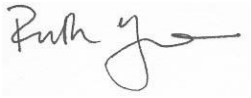
Yang's proposed project would describe the impact of a series of climate change experiments on mercury entering the soil via throughfall and leaving via evasion at Hubbard Brook Experimental Forest in New Hampshire. The project takes advantage of the experimental sites that have already been established at Hubbard Brook, including those that Pam Templer manages. This makes Yang's project extremely cost-effective, as the environmental manipulations are already in place. The methods of measurement proposed by Yang have been applied in other studies, but this is the first time that mercury in throughfall and soil evasion have been studied in climate change experiments. Yang's work will extend our knowledge of how future climates will affect the input and output of soil mercury. The question of how climate warming may alter mercury cycling in forests has been addressed using longitudinal gradients but not manipulation experiments, and ice storms and drought have not yet been studied for their effect on mercury cycling.

Yang has been associated with my lab since 2012, when he began working on his MS degree on tree tissue concentration. Charley Driscoll of Syracuse University, a leading mercury expert, approached Yang to see if he would be interested in analyzing mercury in tree tissues. This led to funding from the Northeastern States Research Cooperative, investigating mercury in tree biomass, and a Ph.D dissertation topic for Yang. He is also leading an uncertainty analysis of mercury in loons for New York State Energy Research and Development Authority. At Yang’s PhD candidacy exam, Charley asked about mercury and climate change, and offered to provide the instruments necessary to conduct the field work. I am very confident of the success of this project, as Yang will have the advice of a mercury expert in Charley Driscoll and a climate change expert in Pamela Templer.

Yang has my highest recommendation and I hope that you can fund his proposed internship. It will build on his past experience and allow him to gain experience and establish credentials in the field of mercury studies, in which he intends to make his career.

Please don't hesitate to contact me if I can be of any further assistance.

Sincerely,



Ruth D. Yanai
Professor, Department of Forest and Natural Resources Management
Director, Graduate Program in Environmental Science
210 Marshall Hall
1 Forestry Dr.
Syracuse, NY 13210
phone: 315 470-6955 fax: 315 470-6954 e-mail: rdyanai@syr.edu
web: http://www.esf.edu/faculty/yanai

Pamela H. Templer, Ph.D.
Associate Professor
Department of Biology
Boston University
5 Cummington Street
Boston, MA 02215, USA

January 28, 2017

Dear Edna Bailey Sussman Foundation,

I am writing in strong support of the work proposed by Yang Yang to make measurements of mercury in throughfall and soils at the Climate Change Across Seasons Experiment (CCASE) at Hubbard Brook in the White Mountains of New Hampshire. In this experiment, we aim to determine the combined effects of warming soils in the growing season and soil freeze/thaw cycles in winter on nitrogen and carbon cycling in northern hardwood forests. In the proposed research, Yang will take advantage of this large-scale experiment that was initiated with funds from my NSF CAREER grant. The high cost of this experiment would not be feasible for a graduate student to get funded alone.

Yang's work complements, but does not overlap significantly with the goals of the CCASE experiment. Yang will quantify mercury in throughfall, mercury evasion from soils, and examine the different in our reference and treatment plots. These are not measurements we had planned for this experiment, but the results Yang produces will be incredibly valuable for our understanding of the role of climate in affecting the functioning of northern hardwood forests.

I am happy to serve as Internship Sponsor to Yang. The proposed internship will take place May 22-Augusts 25, 2017. Yang will be supervised by myself and my technician, Laura Clerx. Results from this internship will be submitted for publication in a peer reviewed journal.

Please do not hesitate to contact me if you have any questions.

Sincerely,

Pamela Templer

State University of New York
College of Environmental Science and Forestry
1 Forestry Drive
Syracuse, New York 13210

Student: Yang,Yang
I.D. No: XXX-XX-2289

See Separate Transcript(s) for MS Work

Basis for Admission:
Bachelor - Minzu University of China
Bachelor of Science - SUNY-ESF

Record of Attendance:
05/14/12 - Entered in MS program
08/31/15 - Entered in PHD program

Program: Environmental Science
Area of Study: Coupled Natural and Human Systems

Thesis Dates:
PhD Candidacy Exam Date: 11/15/16

Course Number and Title	Credit Hours	Grade	Grade Pts
Fall Semester 2015			
APM 625 INTRO/SAMPLING TECHNIQUES	3.0	A-	11.10
APM 645 NONPARAMET STATS&CAT DATA	3.0	A	12.00
EST 600 FOUNDATIONS/ENVRNMNTL STU	3.0	B+	9.90

	Hours Carried	Hours Passed	Grade Points	GPA Hrs	Grd Pt Avg
Sem	9.0	9.0	33.00	9.00	3.667
Cum	9.0	9.0	33.00	9.00	3.667

Spring Semester 2016			
APM 671 MAP ACCURACY ASSESSMENT	1.0	A	4.00
EFB 530 PLANT PHYSIOLOGY	3.0	W	0.00
ENS 999 DOCTORAL THESIS RESEARCH	3.0	S	0.00
ERE 693 GIS-BASED MODELING	3.0	B+	9.90
EST 696 MANAGING SUSTAINABILITY	3.0	B+	9.90
FOR 798 RSRCH PROB/FSTY & NAT RES	3.0	A	12.00

	Hours Carried	Hours Passed	Grade Points	GPA Hrs	Grd Pt Avg
Sem	16.0	13.0	35.80	10.00	3.580
Cum	25.0	22.0	68.80	19.00	3.621

Fall Semester 2016			
BUA 651 STRATEGIC MGMT & NAT ENVI	3.0	A-	11.10
ENS 999 DOCTORAL THESIS RESEARCH	6.0	S	0.00

	Hours Carried	Hours Passed	Grade Points	GPA Hrs	Grd Pt Avg
Sem	9.0	9.0	11.10	3.00	3.700
Cum	34.0	31.0	79.90	22.00	3.632

Spring Semester 2017		
ENS 999 DOCTORAL THESIS RESEARCH	1.0	0.00
ERE 519 GREEN ENTREPRENEURSHIP	3.0	0.00
EST 796 SUSTAINABLTY DRIVEN ENTER	3.0	0.00

	Hours Carried	Hours Passed	Grade Points	GPA Hrs	Grd Pt Avg
Sem	7.0	0.0	0.00	0.00	0.000
Cum	41.0	31.0	79.90	22.00	3.632

****** End of PHD Transcript ******

Print Date: 1/19/2017

State University of New York
College of Environmental Science and Forestry
1 Forestry Drive
Syracuse, New York 13210

Student: Yang,Yang
I.D. No: XXX-XX-2289

Basis for Admission:

Bachelor - Minzu University of China
Bachelor of Science - SUNY-ESF

Record of Attendance:

05/14/12 - Entered in MS program
08/31/15 - Entered in PHD program

Program: Forest Resources Management
Area of Study: Ecology and Ecosystems

Thesis Dates:

Masters Oral Defense Date: 11/17/14

Title of Thesis:

Detecting Changes in Tree Tissues Chemistry Over Time in Northern Hardwoods

Degree(s) Received:

05/10/15 - Master of Science

Course Number and Title	Credit Hours	Grade	Grade Pts
Summer Semester 2012			
FOR 899 MASTERS THESIS OR PROJECT	1.0	S	0.00
Fall Semester 2012			
ENL 211 COMP FOR ESOL STUDENTS	3.0	B+	9.90
EFB 610 ECOLOGICAL BIOGEOCHEM	3.0	A	12.00
FOR 545 INTRODUCTION TO SOILS	3.0	A-	11.10
Spring Semester 2013			
APM 620 ANALYSIS OF VARIANCE	3.0	A-	11.10
APM 630 REGRESSION ANALYSIS	3.0	A	12.00
EFB 797 A SELF-HELP COURSE IN R	1.0	A	4.00
FOR 535 ADVANCED FOREST SOILS	3.0	A	12.00
FOR 899 MASTER'S THESIS RESEARCH	3.0	S	0.00

	Hours Carried	Hours Passed	Grade Points	GPA Hrs	Grd Pt Avg
Sem	1.0	1.0	0.00	0.00	0.000
Cum	1.0	1.0	0.00	0.00	0.000
Sem	6.0	6.0	23.10	6.00	3.850
Cum	7.0	7.0	23.10	6.00	3.850
Sem	13.0	13.0	39.10	10.00	3.910
Cum	20.0	20.0	62.20	16.00	3.888

Course Number and Title	Credit Hours	Grade	Grade Pts
Fall Semester 2013			
EFB 797 A HISTORY OF ECOSYSTEM TH	1.0	A	4.00
FOR 207 INTRODUCTION TO ECONOMICS	3.0	A	12.00
FOR 557 PRACTICAL VECTOR GIS	3.0	B+	9.90
FOR 796 PROF COMMUNICATION SKILLS	1.0	B+	3.30
FOR 899 MASTER'S THESIS RESEARCH	1.0	S	0.00
Spring Semester 2014			
CIE 690 INDEPENDENT STUDY	3.0	A	12.00
FOR 694 WRITING/SCIENTIFIC PUBS	3.0	A-	11.10
FOR 796 UNCERTAINTY WORKSHOP	1.0	A-	3.70
FOR 797 MULT ELEMENT LIMT/HRDWD E	1.0	A	4.00
FOR 899 MASTER'S THESIS RESEARCH	6.0	S	0.00
Fall Semester 2014			
FOR 899 MASTER'S THESIS RESEARCH	1.0	S	0.00
Spring Semester 2015			
FOR 899 MASTER'S THESIS RESEARCH	1.0	S	0.00

	Hours Carried	Hours Passed	Grade Points	GPA Hrs	Grd Pt Avg
Sem	6.0	6.0	17.20	5.00	3.440
Cum	26.0	26.0	79.40	21.00	3.781
Sem	14.0	14.0	30.80	8.00	3.850
Cum	40.0	40.0	110.20	29.00	3.800
Sem	1.0	1.0	0.00	0.00	0.000
Cum	41.0	41.0	110.20	29.00	3.800
Sem	1.0	1.0	0.00	0.00	0.000
Cum	42.0	42.0	110.20	29.00	3.800

****** End of MS Transcript ******

See Separate Transcript(s) for PHD Work

Print Date: 1/19/2017

Leslie A Rutkowski, Registrar

Official Academic Transcript

Academic Transcript of Minzu University of China

Name	YANG YANG	Student ID	0840060	Gender	Male	ID No.	320525199104086233
Nation	Han	Native Place	Jiangsu	Political Status	League Member	Date of Birth	19910408
Grade	08 environmental science	Enrollment Date	20080901	Date of Graduation	20120701		
Major	Environmental science	Professional Emphasis					
College	Life and environmental science	Education Plan	Environmental science developing plan				

Course Name	Credit	Grade	Type	Time	Course Name	Credit	Grade	Type	Time
College English (I)	3	84	public compulsory course	2008-12	Public Sports (I)	1	79	public compulsory course	2008-12
Computer Civilization Foundation	3	92	public compulsory course	2008-12	Ideology and Moral Cultivation and Law Foundation	3	83	public compulsory course	2008-12
Higher Mathematics (I)	3	93	Compulsory	2008-12	Inorganic Chemistry	3	91	Compulsory	2008-12
Experiments in Inorganic Chemistry	1	90	Compulsory	2008-12	Introduction of Environmental Science	3	94	Compulsory	2008-12
Public Sports (II)	1	91	public compulsory course	2009-06	College English (II)	3	86	public compulsory course	2009-06
A Concise Outline of Chinese Modern History	2	93	public compulsory course	2009-06	Experiments in Analytical Chemistry	1	89	Compulsory	2009-06
Higher Mathematics (II)	3	91	Compulsory	2009-06	Experiments in Environmental Biology	1	88	Compulsory	2009-06
Analytical Chemistry	3	86	Compulsory	2009-06	Basic Computer Science Knowledge	3	85	public compulsory course	2009-06
Environmental Biology	3	91	Compulsory	2009-06	The Civil Procedure Act	2	83	school elective course	2009-06
Experiment of College Physics	1	82	Compulsory	2009-06	Creation and Innovation	2	91	school elective course	2009-06
College Physics	3	82	Compulsory	2009-06	Forensic Medicine	2	82	school elective course	2009-12
Medical Psychology	2	94	school elective course	2009-12	Family Physicians	2	87	school elective course	2009-12
Marxist Ethnic Theory and Policy	2	85	public compulsory course	2009-12	Ecological Experiment	1	97	Compulsory	2009-12
Experiments in Organic Chemistry	1	87	Compulsory	2009-12	Environmental Evaluation	3	76	Compulsory	2009-12
Organic Chemistry	4	83	Compulsory	2009-12	Ecology	3	86	Compulsory	2009-12
Public Sports (III)	1	87.5	public compulsory course	2009-12	College English (III)	3	88	public compulsory course	2009-12
Public Sports (IV)	1	85	public compulsory course	2010-06	College English (IV)	3	86	public compulsory course	2010-06
Principles of Marxism Philosophy	3	85	public compulsory course	2010-06	Inventions and creative idea	2	88	school elective course	2010-06
Acupuncture and moxibustiog	2	90	school elective course	2010-06	Environmental Geography	3	76	Compulsory	2010-06
Environmental Planning and Management	3	86	Compulsory	2010-06	Interdiscipline of Environmental Science	2	92	Professional elective	2010-06
Food testing and safety	2	82	Professional elective	2010-06	Linear Algebra	2	82	Professional elective	2010-06
Instrumental Analysis	3	87	Compulsory	2010-06	Experiments in Instrumental Analysis	1	84	Compulsory	2010-06
Mao&ChineseCharacteristics (I)	3	74	public compulsory course	2010-12	Spectrum Analysis	2	89	Professional elective	2010-12
Environmental Mathematical Model	2	74	Professional elective	2010-12	Experiment of Water Pollution Control Engineering	2	86	Professional elective	2010-12
Experiments in Physical Chemistry	1	95	Professional elective	2010-12	Sci-Tech Document Retrieval	0.5	80	Professional elective	2010-12
Experiments in Environmental Monitoring	1	93	Compulsory	2010-12	Environmental Monitoring	3	88	Compulsory	2010-12
Physical Chemistry	2	84	Professional elective	2010-12	Environmental Hydro Science	2	74	Professional elective	2010-12
Mao&ChineseCharacteristics (II)	3	88	public compulsory course	2011-06	Environmental Engineering	3	82	Compulsory	2011-06
Technology of GPS,RS,GIS	2	89	Professional elective	2011-06	Probablity and Statistics	2	76	Professional elective	2011-06
Environmental Chemistry	3	90	Compulsory	2011-06	Experiments in Environmental Chemistry	1	89	Compulsory	2011-06
Environmental Microbiology	2	70	Professional elective	2011-06	Environmental Health	2	93	Professional elective	2011-06
Innovation award credits	2	90	Professional elective	2011-06	Experiments in Environmental Engineering	1	93	Compulsory	2011-12

Credits Gained:	139.5
GPA:	3.54
Notes:	

Signature of Department Head:

Official Seal:

中央民族大学 教务处

Date: 04/11/2012 10:53:06