



## **International Nature Education and Experience for International Students**

**Semester Abroad Programmes  
January 2024**

**College of Natural Resources  
Royal University of Bhutan  
Lobesa**

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## Executive Summary

The College of Natural Resources, Royal University of Bhutan, Lobesa had 20 different international Nature Education and Experience programmes comprising 12 Summer School programmes, three Semester abroad programmes and five trainings. This document contains the course contents of three semester abroad programmes, each of which are for a duration of three months.

The first Semester Abroad programme Agriculture and Food Systems in Bhutan Himalaya. This programme consists of four modules namely Agricultural Systems in the Himalayas, Living a Farmer's Life in the Himalayas, Bhutanese Food and Culture and Research Project. This course provides students with a comprehensive understanding of the unique agricultural practices and food systems in Bhutan, with a focus on the challenges and opportunities presented by the Himalayan region.

The second Semester Abroad programme is Biodiversity Conservation and Natural Resource Management. It also has four modules namely Biodiversity Survey Methods and Conservation Tools, Natural Resources Management, Traditional Ecological Knowledge in the Himalayas and Research Project. The programme offers the participants to explore the Himalayan wilderness, experience Bhutanese culture, and conduct short research on their interests.

The third Semester Abroad programme is Ethnomedicine in the Eastern Himalayas and it comprises Nature and Wellness, Wild Edible Plants of Bhutan Himalaya, Ethnomedicine and Research Project. The programme broadly aims to provide a comprehensive understanding of traditional healing practices and wild plant-based foods in the culturally diverse region of the Eastern Himalayas as well as the nature and wellness experience. This programme offers a unique opportunity for students, researchers, and enthusiasts to delve into the rich tapestry of ethnomedicinal knowledge and experience natural therapy and wild food that has been sustained and passed down through the generations.

The fee for each semester abroad programme is USD 8,700 which includes tuition fee, food, accommodation and visa fee. Additionally, USD 150 will be levied for field visits outside the campus.



**Agriculture and Food Systems in Bhutan Himalaya**  
**SAB901**  
**Credit: 48**

**College of Natural Resources**  
**Royal University of Bhutan**  
**Lobesa, Punakha, Bhutan**

*The syllabus of this programme may change from time to time based on emerging needs, learning conditions, experiences and resources.*

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## **Programme Overview**

The Agriculture and Food Systems in Bhutan Himalaya is a three-month semester abroad program covering the wide range of agriculture and food systems in Bhutan. This course consists of Agricultural Systems in the Himalayas, living a Farmer's Life in the Himalayas and Bhutanese Food and Culture, including the research project. This course likely provides students with a comprehensive understanding of the unique agricultural practices and food systems in Bhutan, with a focus on the challenges and opportunities presented by the Himalayan region.

Participants will unravel the distinctive features, challenges, and opportunities inherent in Himalayan agriculture, exploring diverse agroecological zones, traditional farming practices, and innovative approaches. Dynamic learning methods, including expert-led lectures, collaborative classroom discussions, hands-on fieldwork, and self-directed study, blend seamlessly to provide a comprehensive understanding of the region's food production systems. A transformative field trip offers firsthand experiences alongside local farmers, ensuring a well-rounded grasp of Himalayan agricultural intricacies. In parallel, participants can immerse themselves in the farmer's life through another course, gaining a unique international perspective on sustainable farming and mountain livelihoods in rural Bhutan. The curriculum, emphasizing real-life experiences of living on a farm and engaging in daily chores, provides an in-depth understanding of agricultural and rural life in Bhutan. Additionally, explore the rich tapestry of Bhutanese culture through a course focused on traditional food and customs. Delve into the significance of food in Bhutanese culture, learning about local ingredients, cooking techniques, and dining etiquette. The course includes lectures, hands-on experiences, and field visits to comprehend the role of festivals and ceremonies in shaping Bhutanese cuisines. Participants will be assessed through a variety of methods, including quizzes, reports, oral presentations, assignments, practical's, field visits, and research projects ensuring a holistic and enriching educational experience.

The semester abroad programme is designed to provide students with an immersive experience to explore and learn about unique agricultural practices, Food and culture and immerse in the famer's life in the Eastern Himalayas.

### **Mode of Learning**

The programme will be delivered using different learner-centred approaches, including cultural immersion, field studies, quizzes, practicals, workshops, seminars, group presentations and assignments.

### **Cultural Immersion**

Students will be introduced to the cultural diversity of the Eastern Himalayan region, gaining insights into the food, traditions, rituals, and beliefs.

### **Field Studies**

Students will be taken to remote villages, communities, and local festivals to witness and experience the food and culture, farmers life and agricultural practice in Himalaya.

### **Workshops and Seminars**

There will be workshops and seminars on various aspects of ethnomedicines, including plant identification, preparation of traditional remedies, natural therapies, and the spiritual and cultural dimensions of healing practices as well as discussion on wild foods.

### **Documentation**

The students will engage with local communities through collaborative projects aimed at documenting and preserving traditional food and culture. They will be encouraged to contribute to ongoing research initiatives.

### **Research project**

Students will engage in research activities in Agricultural Systems in the Himalayas, Living a Farmer's Life in the Himalayas and, Food and Culture encompass a broad spectrum of studies, including the documentation of agricultural practice, food anthropological case studies and prototyping of the traditional food using the local ingredients.

### **Student Presentations**

The programme will conclude with students presenting their findings, reflections and experiences. This will foster a collaborative learning environment and facilitate the exchange of ideas amongst the students.

### **Assessment**

Learning of the students will be assessed using various approaches, including but not limited to the following: assignments, documentation, research project reports and participation. The programme will be assessed from a total mark of 100 in each of the four modules. Specific details of the assessments and passing marks are provided for in the individual modules.

### **Finally...**

... by participating in this semester abroad programme, the students will not only broaden their academic knowledge but also contribute to the preservation and appreciation of the unique agricultural practices, Farmers life and food and culture in Bhutan Himalaya.



**Module 1: Agricultural Systems in the Himalayas**  
**Credit: 8**

**College of Natural Resources**  
**Royal University of Bhutan**  
**Lobesa, Punakha, Bhutan**

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**Course Director** : Tenzin Wangchuk ([tenzin.cnr@rub.edu.bt](mailto:tenzin.cnr@rub.edu.bt))  
**Module Name and Code** : Agricultural Systems in the Himalayas (AGR906)  
**Duration** : Two Weeks

### Module Overview

This course provides a captivating exploration of the agricultural marvels nestled in the Himalayas. This immersive experience, based in Bhutan, unravels the distinctive features, challenges, and opportunities inherent in Himalayan agriculture. Delving into diverse agroecological zones, traditional farming practices, and innovative approaches, participants gain a comprehensive understanding of the region's food production systems. The course blends dynamic learning methods, including expert-led lectures, collaborative classroom discussions, hands-on fieldwork, and self-directed study. A transformative field trip provides participants with first-hand experiences alongside local farmers. Assessment involves quizzes, reports, and oral presentations, ensuring a well-rounded grasp of Himalayan agricultural intricacies.

### Learning outcomes

On completion of the course, the participants will be able to:

1. Evaluate agriculture and food production systems in the Himalayas.
2. Assess the impact of climate change on agricultural systems in the Himalayas.
3. Analyze case studies of successful agricultural practices and identify innovative and adaptive approaches to building climate resilience.
4. Gain hands-on experience through field trips and interactive sessions with local farmers using PRA tools.

### Learning and Teaching Approach

The theoretical aspect of the course will be taught through lectures and classroom discussions with the aim of integrating critical thinking skills. Experiential learning will help the participants to gain hands-on experience in the course. The hours for learning and teaching approach are given as follows:

Type	Approach	Total Hours
Contact	Lecture	16.5
	Group discussion and Demonstration	15.5
	Practical/Field Visit	32
Independent study	Assignment	16
<b>Total</b>		<b>80</b>



## Assessment Approach

Participants will be assessed individually as well as in groups to test their knowledge and skills gained from the course. The details of the assessment are as follows:

### A. Class Quiz (30%)

Participants will attend a written quiz of 30 marks at the end of Week 1. The quiz will last 20 minutes and will be used to assess the theoretical knowledge.

### B. Experiential learning report and presentation (70%)

At the end of the field visit, the participants will work in groups of 2-3 members and will submit a report on activities, field observations, and their experiences from the field visit, making a connection between theoretical concepts and practical experiences. They will also make a group presentation.

The report will be assessed for 50% using the criteria below:

- 20 Content (depth and relevancy)
- 10 Critical reflections
- 7 Coherence/organisation
- 6 Conclusion
- 4 Clarity
- 3 Language

The presentation will be assessed for 20% based on the following criteria:

- 7 Content
- 4 Delivery
- 3 Visuals
- 3 Overall presentation
- 3 Responses to questions

## Grading Scheme

Grade	Judgement of performance	Mark
A+	Outstanding	80% and above
A	Very Good	70 - 79.9%
B	Good	60 - 69.9%
C	Satisfactory	50 - 59.9%
D	Fail	49.9% and below

## Important notes

### Plagiarism

Plagiarism is the act of presenting someone else's work, ideas, or intellectual property as one's own without proper attribution. It is a serious violation of academic and professional integrity, and it undermines the values of originality, honesty, and scholarly rigour that we uphold.

Our university takes plagiarism seriously, and instances of plagiarism will result in severe consequences, including but not limited to academic penalties such as failure of the assignment, course or expulsion and legal consequences in cases of copyright infringement.

### Deadlines

Timely completion and submission of tasks and assignments are crucial, and as such, each student should understand and meet deadlines associated with his/her assigned tasks and assignments. Those failing to meet the deadline will lead to a deduction of marks.

### Contents

**Type:** L: Lecture, FL: Field Lecture, D: Demonstration, GD: Group Discussion, A: Assignment  
P/L: Practical/Lab, S: Seminar, OL: Observatory Learning, SR: Student Reflection, SE: Student Exercise

Contents	Approach	Time (h)	Facilitator
<b>Unit 1. Introduction to the Himalayan farming</b> 1.1 Background 1.2 Farming diversity and characteristics (subsistence and semi-commercial) 1.3 Characterization of agro-ecological zones	L/GD	3.5	Mahesh Ghimiray/ Tenzin Wangchuk
<b>Unit 2. Food production systems in the Himalayas</b> 2.1 Integrated food production systems: crops, animals, and trees 2.2 Types of production systems: crops and cropping system 2.2.1 Irrigated/wetland. 2.2.2 Rainfed/dryland systems	L/GD	3	Mahesh Ghimiray
<b>Unit 3. Recent approaches to farming in Bhutan</b> 3.1 Organic farming 3.2 High-value cash crop farming	L/GD	3	Dr. Sonam Tashi

<b>Unit 4. Climate change and its impact on agriculture in the Himalayas</b> 4.1 Shifts in weather pattern 4.2 Vulnerability to climate change 4.3 GLOF and its effect 4.4 Pest and diseases outbreak 4.5 Adaptation and mitigation measures	L/GD/SR	7.5	Mahesh Ghimiray/ Tenzin Wangchuk
<b>Unit 5. Challenges faced by farmers in the Himalayas.</b> 5.1 Production related: Geographical terrain, Scale of farming, Input availability 5.2 Market related: access to market, Transportation cost, Marketing chain, Policy barrier 5.3 Processing related: value addition, inadequate equipment and facilities and lack of expertise	L/GD	6	Mahesh Ghimiray/ Tenzin Wangchuk
<b>Unit 6. Case studies of successful agricultural practices in the Himalayas</b>	GD/A	8	Mahesh Ghimiray
<b>Unit 7. Participatory Rural Appraisal</b> 7.1 Definition and principles 7.2 Basic PRA tools 7.3 Interviewing 7.4 Evaluation of findings 7.5 Feedback session with the farmers 7.6 PRA report writing	L/D	9	Dr. Thubten Sonam
<b>Unit 8. Field trip to observe agricultural systems using Participatory Rural Appraisal (PRA) tools: A case of Bhutan</b> 8.1 Field survey and data collection 8.2 Data compilation and processing for presentation 8.3 Evaluation and feedback, report generation	A/OL/SR	40	Dr. Thubten Sonam/ Tenzin Wangchuk

### Materials and Resources

Books, LCD, Projectors, Stationery (chart paper, marker, staple, cellotape), White board, Bus, Tents, Utensils for cooking

### Reading list

Cavestro, L. (2003). PRA-participatory rural appraisal concepts methodologies and techniques. *Padova University. Padova PD. Italia.*

Chaudhary, P., & Bawa, K. S. (2011). Local perceptions of climate change validated by scientific evidence in the Himalayas. *Biology Letters*, 7(5), 767-770. <https://doi.org/10.1098/rsbl.2011.0269>

Chhogyel, N., & Kumar, L. (2018). Climate change and potential impacts on

- agriculture in Bhutan: A discussion of pertinent issues. *Agriculture & food security*, 7(1), 1-13.
- Dorji, T., & Rai, P. B. (2018). Traditional agricultural practices in Bhutan: A review. *Journal of Mountain Science*, 15(7), 1553-1563. <https://doi.org/10.1007/s11629-018-4872-8>
- Gyamtsho, T., & Gaihre, S. (2016). Agricultural productivity and food security in Bhutan: Status and future prospects. *Mountain Research and Development*, 36(2), 250-260. <https://doi.org/10.1659/MRD-JOURNAL-D-15-00067.1>
- Joshi, P. K., & Jha, S. K. (2015). Livelihood security and agro-biodiversity through sustainable agricultural practices: A case study from the Kumaon Himalaya, India. *Ecological Indicators*, 57, 558-569. <https://doi.org/10.1016/j.ecolind.2015.05.024>
- Khadka, K., & Maharjan, K. L. (2020). Climate change, food security, and agro-biodiversity in the Himalayan region. *Journal of Mountain Science*, 17(6), 1356-1366. <https://doi.org/10.1007/s11629-020-6103-8>
- Tamang, B., & Thapa, G. B. (2020). Agrobiodiversity management for enhancing resilience of farming systems in Bhutan. *Agroecology and Sustainable Food Systems*, 44(5), 533-551. <https://doi.org/10.1080/21683565.2019.1698363>



## **Module 2: Living a Farmer's Life in the Himalayas**

**Credit: 8**

**College of Natural Resources  
Royal University of Bhutan  
Lobesa, Punakha, Bhutan**

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**Course Director** : Mahesh Ghimiray ([mghimiray@gmail.com](mailto:mghimiray@gmail.com))  
**Module Name and Code** : Living a Farmer's Life in the Himalayas (AGR 907)  
**Duration** : Two Weeks

### Module Overview

This course provides a unique opportunity for participants to immerse themselves in the way of life and culture of rural Bhutan. It also provides an in-depth understanding of agricultural and rural life in Bhutan with a focus on sustainability and livelihoods. Bhutan, known for its unique Gross National Happiness development philosophy, provides a unique case study of sustainable agricultural practices and rural livelihoods. The course will combine theoretical and practical approaches, including lectures and hands-on experience on working and living on a farm. The participants will be assessed using various methods such as quizzes, journals, and reflections.

### Learning Outcome

At the end of the course, the participants will be able to:

1. Understand agriculture and rural life in Bhutan.
2. Gain knowledge of sustainable agriculture practices.
3. Experience living on a farm and engaging in the daily chores of a farmer.

### Learning and Teaching Approach

The teaching and learning approach comprises a combination of theory in the form of class lectures, interactive discussion sessions, group work, oral presentations, and independent study. The second week of the course will be fully devoted to experiential learning by allowing the participants to live in rural areas with host families and engage themselves in the daily activities of the farmers.

Type	Approach	Total Hours
Contact	Lecture	20
	Class discussion	10
	Presentation	5
	Farm experience	30
Independent study	Self-study	15
<b>Total</b>		<b>80</b>

### Assessment approach

Participants will be assessed individually as well as in group work to test their knowledge and skills gained from the course. The details of the assessment are as follows:

### **A. Class Quiz (30%)**

Participants will attend a written quiz of 30 marks at the end of Week 1. The duration of quiz will be 25 minutes and will be used to assess the theoretical knowledge.

### **B. Daily Journal (30%)**

During their stay in the household, participants will maintain a daily journal that logs their experiences and insights gained. The journal will be assessed as per the rubric provided in Appendix A.

### **C. Reflection Essay (40%)**

In groups of 2-3 members, the participants will write a reflection essay on their experience of living on a farm. They will also make a 15-minute oral presentation of their experience.

The reflection essay will be for 30% and will be assessed as follows:

- 4 Clarity
- 5 Reflection
- 4 Connection with course content
- 5 Depth of analysis
- 4 Writing quality
- 5 Evidence of personal growth
- 3 Originality

The presentation will be assessed for 10% based on the following criteria:

- 4 Content
- 2 Delivery
- 2 Visuals
- 2 Responses to questions

### **Grading Scheme**

<b>Grade</b>	<b>Judgement of performance</b>	<b>Mark</b>
A+	Outstanding	80% and above
A	Very Good	70 - 79.9%
B	Good	60 - 69.9%
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D	Fail	49.9% and below

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P/L: Practical/Lab, S: Seminar, OL: Observatory Learning, SR: Student Reflection, SE: Student Exercise

Contents	Teaching approach	Time (h)	Facilitator
<b>Unit 1. Introduction to Agricultural and Rural Life</b> 1.1 Mountain agriculture and rural living 1.2 Himalayan ecosystems and biodiversity 1.3 Features of mountain farming 1.4 Agriculture and Bhutan's GNH development philosophy 1.5 Historical context and evolution of agriculture in Bhutan 1.6 Challenges and opportunities of farming in the Himalayan mountains	L/GD	7	Mahesh Ghimiray Tenzin Wangchuk
<b>Unit 2. Farming practices in Himalayas</b> 2.1 Traditional Mountain farming and sustainability 2.2 Crops and cropping systems 2.3 Livestock management 2.4 Integrating crops, animals and trees 2.5 Examples of sustainable agriculture practices in Bhutan Himalaya 2.6 Organic farming: opportunities and challenges	L/GD	9	Dr Jigme Tenzin, Dr Sonam Tashi Tenzin Wangchuk MGhimiray
<b>Unit 3. Case studies of sustainable farming practices in the Himalayas</b>	A	9	MG/JT/ST & TW
<b>Unit 4. Farm experience in rural Bhutan</b>	L/D/GD/FL	7	TG/TS/MG



4.1 Introduction to Bhutanese culture and tradition 4.2 Local culture, traditions, beliefs, and significance 4.3 Cultural diversity and its importance 4.4 Tradition of singing and dancing 4.5 Excursion to Punakha valley			
<b>Unit 5. Experiencing rural life</b>	P/OL	48	MG/TWK/OL and WG
5.1 Living with a host family 5.2 Farm tour/transect 5.3 Milking cows 5.4 Harvesting vegetables 5.5 Cooking Ema datshi 5.6 Cultural evenings 5.7 Farm observation: interconnectedness of nature, farming, and livelihoods			

### Materials and Resources

Books, LCD, Projectors, Stationery (chart paper and marker), whiteboard, Bus

### Reading list

Choden, K., & Roder, W. (2008). *Chilli and Cheese: Food and Society in Bhutan*. White Lotus.

Documentary: "The Happiest Country on Earth Revealed! | My Bhutan Road Story"  
by ETHEREAL. [\(43\) The Happiest Country on Earth Revealed! | My Bhutan Road Story – YouTube](#)

Phuntsho, S. (2019). *Bhutan: A Complete Guide*. Bradt Travel Guides.

Katwal, T. (2013). Multiple cropping in Bhutanese agriculture: Present status and opportunities. In *Regional Consultative Meeting on Popularizing Multiple Cropping Innovations as a Means to Raise Productivity and Farm Income in SAARC Countries*. Peradeniya, Kandy Sri Lanka.

FAO. Undated. Livestock composition in the Himalayan Mountains.

International Institute for Environment and Development. Smallholder farming systems in the Indian Himalayas Key trends and innovations for resilience.



**Module 3: Food and Culture in Land of Thunder Dragon  
Credit: 8**

**College of Natural Resources  
Royal University of Bhutan  
Lobesa, Punakha, Bhutan**

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**Course Director** : Karma Wangchuk ([karmaw.cnr@rub.edu.bt](mailto:karmaw.cnr@rub.edu.bt))  
**Module Name and Code** : Food and Culture in Land of Thunder Dragon (FCS914)  
**Duration** : Two Weeks

### Module Overview

This two-week course will explore the traditional food and culture of Bhutan. Participants will learn about the importance of food in Bhutanese culture and how it has shaped the country's history, identity, and social customs. They will also gain an understanding of the local ingredients, cooking techniques, and dining etiquette, as well as the role of festivals and ceremonies in Bhutanese cuisines. The course includes lectures, hands-on experience, and field visits to understand Bhutanese food and culture. The participants will be assessed using assignments, practicals, and field visits.

### Learning Outcome

On completion of the course, the participants will be able to:

1. Explain the unique cultural and culinary traditions of Bhutan.
2. Analyze and critique the historical and social context for Bhutanese cuisine.
3. Elucidate the relationship between food, culture, and Bhutanese identity.
4. Develop practical skills in Bhutanese cooking and dining etiquette.

### Learning and Teaching Approach

The following teaching and learning approach will be used for the course: lectures, field visits, assignments, and self-study.

Type	Approach	Total Hours
Contact	Lecture	12
	Group discussion/presentation	8
	Field visits /practicals	40
Independent	Assignment	20
<b>Total</b>		<b>80</b>

### Assessment Approach

The following assessments are mandatory to be completed by the participants, which include assignments, field visits, and food cultural analysis. The plagiarism policy is available at [www.rub.edu.bt](http://www.rub.edu.bt) (Wheel of Academic Law - WAL).

### A. Group assignment (20%)

A group of 3–4 individuals will document/videograph a processing technique of food from different regions in Bhutan. This is to provide the students with real-time experience in Bhutanese food processing. The following criteria will be used as a guide:

- 8 Edition/clarity
- 8 Narration and subtitle
- 4 Presentation

### B. Field visits (60%)

The individual participants will write a report from different field visits to understand festivals, customs and tradition and their connection to Bhutanese cuisine. The report may include personal reflections and critiques. The following places will be visited, and the assignment will be graded as below:

1. Punakha Tshechu/Mushroom Festival (Genekha) (20)
2. Babesa village restaurant/farmer's House (20)
3. Visit to a nearby farm (20)

Further breakdown of marks is provided below:

- 4 Context and introduction
- 8 Content
- 4 Language and critique
- 4 Conclusion

### C. Food cultural analysis (20%)

Individual participants will document and analyze the cultural aspects of Bhutanese cuisines in festivals and ceremonies to explore the linkage between festivals, ceremonies, and food. The assignment will be assessed using the following criteria:

- 4 Introduction
- 4 Content
- 4 Analysis and critique
- 4 Conclusion
- 4 References

### Grading Scheme

Grade	Judgement of performance	Mark
A+	Outstanding	80% and above
A	Very good	70 - 79.9%
B	Good	60 - 69.9%
C	Satisfactory	50 - 59.9%
D	Fail	49.9% and below

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**Type:** L: Lecture, FL: Field Lecture, D: Demonstration, GD: Group Discussion, A: Assignment  
P/L: Practical/Lab, S: Seminar, OL: Observatory Learning, SR: Student Reflection, SE: Student Exercise

Content	Teaching approach	Time (h)	Facilitator
<b>1. Unit 1: Introduction to Bhutanese food and culture</b> 1.1 Role of food in Bhutanese culture and identity 1.2 Major influences on Bhutanese cuisine (Indian, Chinese, Tibetan) 1.3 Current trends in Bhutanese cuisine and culinary tourism 1.4 Challenges to traditional food culture in Bhutan 1.5 Sustainable food practices and initiatives in Bhutan, Dining etiquette and hospitality, Significance of hospitality in Bhutanese culture 1.6 Group assignment videography	L & GD &A	12	Kezang Choden
<b>2. Unit 2: Food production system and processing</b> 2.1 Importance of food preservation 2.2 Processing (grinding, distillation, brewing, fermentation, drying —air/smoking, burying — soil/water, pasteurization)	L & GD & FL	8	Ugyen Sumba and

<p><b>3. Unit 3: Bhutanese cuisines</b></p> <p>3.1 Introduction to key Bhutanese ingredients (rice, <i>kharang</i>, chillies, cheese, mushrooms, egg, spices/flavours, vegetables etc.)</p> <p>3.2 Sourcing of raw materials</p> <p>3.3 Techniques for cooking Bhutanese food (<i>ema datshi</i>, <i>phaksha paa</i>, <i>momos</i>, rice <i>Thukpa</i>, <i>Bathup</i>, <i>Putu</i>—traditional extruder)</p> <p>3.4 Regional variations in Bhutanese cuisine</p> <p>3.5 Hands-on cooking session - Art of making tea (Suja)</p>	L & GD & P/L	11.5	Ugyen, sumba KW,
<p><b>2. Unit 4: Festivals, ceremonies, and food</b></p> <p>4.1 Importance of festivals and ceremonies in Bhutanese culture</p> <p>4.2 Foods and drinks associated with major festivals (<i>Lomba</i>, <i>Losar</i>, <i>Kharam</i>, <i>Tshechus</i>, <i>Diwali</i>)</p> <p>4.3 Rituals and custom surrounding food during ceremonies (birth, marriage, death)</p> <p>4.4 Food cultural analysis</p>	L & GD & A	9.5	Tandin Gyeltshen
<p><b>3. Unit 5: Experiencing the Food and Culture</b></p> <p>5.1 Field visit to Babesa village restaurant/farmers house/Smoking of fish</p> <p>5.2 Field visit to Visit to Punakha Tshechu/Genekha mushroom festival.</p> <p>5.3 Report writing</p>	F/L, O/L, A, S/R	40	KW, Tandin Gyeltshen, Ugyen and Sumba
Total hours		80	

### Materials and Resources

Utensils, raw materials, and bus for field visit.

### Reading List

Choden, K. (2008). *Chilli and cheese: Food and society in Bhutan*. White Lotus.

Nagamatsu, E. T., & Nagamatsu, E. (2010). *Foods of the Kingdom of Bhutan*. Kuensel Corporation.



**Module 4: Project Work (RES915)**  
**Credit: 8**

**College of Natural Resources**  
**Royal University of Bhutan**  
**Lobesa, Punakha, Bhutan**

*The syllabus of this programme may change from time to time based on emerging needs, learning conditions, experiences, and resources.*

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**Course Director** : Chogyel Wangmo (chogyel.cnr@rub.edu.bt)  
**Code** : RES915  
**Duration** : Two Weeks

**Module Overview**

This module is designed to provide students with the understanding and first-hand experience of carrying out a research project by applying concepts/theories and practice by integrating multiple sources of information and testing their analytical skills. It will allow the students to specialize to some extent in a given field of study.

**Learning Outcomes**

On completion of the module, students will be able to:

1. Identify project topic (simple time bound topics) for research.
2. Retrieve, identify, select, and organize information.
3. Design a methodology for the project.
4. Carry out critical literature review for scientific writing with academic integrity.
5. Write a project proposal/plan by synthesizing various components.
6. Formulate a work plan to carry out the research.
7. Develop data interpretation, analytical and problem-solving skills.
8. Carry out a research project on the chosen topic.
9. Write a structured project report with graphic illustrations.

**Learning and Teaching Approach**

The theoretical aspect of the course will be taught through lectures and classroom discussions with the aim of integrating critical thinking skills. Experiential learning will help the participants to gain hands-on experience in the course. The hours for learning and teaching approach are given as follows:

Type	Approach	Total Hours
Contact	Lecture	20
	Group discussion	4
Independent study	Project writeup	56
<b>Total</b>		<b>80</b>

**Assessment Approach**

**A. Process Evaluation: (10%)**

Assessment will be carried out on a continuous basis starting from selection of the topic till final project report submission. A standardize format with timelines (see below) will be made



available by the Dean of Research and Industrial Linkages (Coordinator). Students should note that failing to meet any requirements of the Project guidelines and deadlines may result in non-acceptance of the final project.

- 5 All process timely met.
- 5 Meeting and discussion with Supervisor as agreed/scheduled.

**B. Project Proposal: (40%)**

The proposed project topic will be submitted to project supervisor. The assessment will be based on the following criteria:

- 5 Introduction
- 15 Methods & materials
- 11 Literature review
- 5 Overall presentation/structure
- 4 Work plan

**C. Final Project Report: (30)**

The final draft will be submitted to respective project supervisor who will. Research project report evaluation will be done by on following criteria, which will be averaged.

- 4 Introduction
- 4 Literature review
- 7 Materials & methods
- 7 Results & discussion
- 4 Conclusion
- 2 References
- 2 Overall presentation

**D. Project Presentation: (20%)**

Students are required to make a presentation about 20 minutes which will be evaluated by a panel of evaluators. The seminar will be evaluated based on the following criteria:

- 2 Communication skills
- 3 Structure
- 7 Content
- 2 Visuals
- 2 Confidence
- 2 Comprehensive
- 2 Interaction

**Grading Scheme**

Grade	Judgement of performance	Mark
A+	Outstanding	80% and above

A	Very Good	70 - 79.9%
B	Good	60 - 69.9%
C	Satisfactory	50 - 59.9%
D	Fail	49.9% and below

## Important notes

### Plagiarism

Plagiarism is the act of presenting someone else's work, ideas, or intellectual property as one's own without proper attribution. It is a serious violation of academic and professional integrity, and it undermines the values of originality, honesty, and scholarly rigour that we uphold.

Our university takes plagiarism seriously, and instances of plagiarism will result in severe consequences, including but not limited to academic penalties such as failure of the assignment, course or expulsion and legal consequences in cases of copyright infringement.

### Deadlines

Timely completion and submission of tasks and assignments are crucial, and as such, each student should understand and meet deadlines associated with his/her assigned tasks and assignments. Those failing to meet the deadline will lead to a deduction of marks.

### Contents

**Type:** L: Lecture, FL: Field Lecture, D: Demonstration, GD: Group Discussion, A: Assignment  
P/L: Practical/Lab, S: Seminar, OL: Observatory Learning, SR: Student Reflection, SE: Student Exercise

Contents	Approach	Time (h)	Facilitator
<b>Module 1. Introduction to Project Proposal Development</b> 1.4 Importance 1.5 Scientific approach and critical thinking 1.6 Research methods 1.7 Ethics and ethical standards 1.8 Reading literature	L/GD	12	Dr. Rekha Chhetri /Dr. Om Katel/Dr. DB. Gurung/ Dr. Sonam Tashi
<b>Module 2. Project Design and Reporting</b> 2.3 Purpose 2.4 Elements 2.5 Scientific report writing 2.6 Presentation skills 2.7 Case study 2.8 Proposal development for implementation	L/GD	12	Dr. Rekha Chhetri /Dr. Om Katel/Dr. DB. Gurung/ Dr. Sonam Tashi

## **Materials and Resources**

Books, LCD, Projectors, Stationery (chart paper, marker, staple, cellotape), White board, Bus, Tents, Utensils for cooking

## **Reading list**

- Alreck, P.L. and Settle, R.B. (2003). *The Survey Research Handbook* (4<sup>th</sup> Edition). McGraw Hill. Irwin, USA.
- Burns, R.B. (1990). *Introduction to Research Methods* (3<sup>rd</sup> ed.). Longman, Malaysia.
- Creswell, M.D. (2003). *Research Design: Qualitative, Quantitative and Mixed Methods Approaches*. Sage Publication. London.
- Punch, K.F. (2002). *Developing Effective Research Proposal, Essential Resources for Social Research*. London and New Delhi: Cromwell Press Ltd, Sage Publications Ltd.
- Thakur, D. (1993). *Research Methodology in Social Sciences*. Rajouri Garden, New Delhi: DEEP& DEEP Publications.



**Biodiversity Conservation and Natural Resource Management (Spring or Fall) SAB902**  
**Credit: 48**

**College of Natural Resources  
Royal University of Bhutan  
Lobesa, Punakha, Bhutan**

*The syllabus of the programme may change from time to time based on emerging needs, learning conditions, experiences, and resources.*

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## **Programme Overview**

This semester abroad programme offers an opportunity for international students to learn new knowledge and skills in Biodiversity Survey Methods and Conservation Tools, Natural Resources Management, and Traditional Ecological Knowledge in the Himalayas. The programme offers the participants to explore Himalayan wilderness, experience Bhutanese culture, and conduct short research of their interests.

This is a three-month long semester abroad programme. It has three broad components comprising of a) Biodiversity Survey Methods and Conservation Tools, b) Natural Resource Management, and c) Traditional Ecological Knowledge in the Himalayas. It aims to provide knowledge and skills on selected topic related to biodiversity conservation and natural resources management.

The focus of the Biodiversity Survey Methods and Conservation Tools is to provide knowledge and skills on the current biodiversity survey methods and relevant conservation tools. Skills to survey mammals, birds, fishes and macroinvertebrates, herpetofauna – reptiles and amphibians, and terrestrial invertebrates such as butterfly collection are provided. In the Conservation Tools, hands on exercises are provided in using Geographical Information System (GIS) and Remote Sensing among others. Likewise, the course aims to provide a comprehensive understanding of the role of traditional ecological knowledge (TEK) in the Himalayas linking with the Hindu-Kush Himalayas, where local communities/indigenous communities have generated the knowledge on how to adapt and manage their environmental resources and passed on from generation to generation benefiting them. Additionally, the course on natural resources management focuses on the development of knowledge and skills in natural resources managed by local communities.

### **Mode of Learning**

The content delivery will be done through classroom teaching, hands-on exercises, demonstrations, assignments, group work, presentations, fieldwork, and research. Both national and international experts will be engaged in the delivery of the course contents. The participants will have to spend a significant part of their three months' time completing short research in the thematic area of their choice.

### **Cultural Immersion**

Students will be introduced to Bhutanese culture and traditions by taking them through different places during holidays. They will have opportunities to interact with local communities and observe local festivals. They will experience eating Bhutanese food.

### **Field Studies**

Students will be taken to the forest, where they will learn different survey methods such as camera trapping, bird identification, and collecting fish samples, among others. They will be either camping in the forest, or they will be given decent accommodation in a village house or institutional outpost camp.

### **Workshop and Seminars**

Based on the findings from the field visit, students will have to either prepare poster or video clips and present to a larger gathering. They will interact with other colleagues and discuss issues to enhance their learning.

### **Research Project**

Students will have the opportunity to collect data, analyse data, write a project report, and present their research project findings. They can choose any topic from the course for research project. Students can do the project independently, but they will be attached with a faculty adviser to complete the project.

### **Assessment**

The learning and skill development of students will be assessed through various means which are outlined in the individual modules elaborated as hereunder.

### **Finally ...**

The students will be able to learn and develop skills to conserve biodiversity, manage natural resources, protect their environment.



## **Module 1: Biodiversity Survey Methods and Conservation Tools**

**Credit: 16**

**College of Natural Resources  
Royal University of Bhutan  
Lobesa, Punakha, Bhutan**

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**Course Director** : D.B. Gurung ([dbgurung.cnr@rub.edu.bt](mailto:dbgurung.cnr@rub.edu.bt))  
**Module Name and Code** : CON911  
**Course Duration** : Two Weeks

### Course Overview

The two-week long course focuses on the development of knowledge and skills in using biodiversity surveys and conservation tools. The course includes topics on using equipment such as camera traps, fishing nets, and mist nets, among others. It also includes conservation tools such as habitat restoration and environmental education. The course is delivered through a combination of theory (37.5%), fieldwork/practical (37.5%), assignments (12.5%), and self-study (12.5%). Fieldworks, which aim to provide skills, include the study of mammals using camera traps, bird surveys, assessment of herpetofauna, and methods in aquatic biodiversity surveys. The learning and skills of the participants will be assessed using video clip assessment and multiple-choice questions.

### Learning Outcomes

On completion of the course, the participants will be able to:

1. Explain the importance of biodiversity conservation.
2. Collect, retrieve, and analyse camera trap data.
3. Sample and analyse fish diversity data.
4. Assess water quality using macroinvertebrates.
5. Conduct bird survey.
6. Conduct an amphibian survey.
7. Identify and recommend management strategies for invasive species.
8. Select and use appropriate conservation tools.

### Learning and Teaching Approach

The teaching and learning approach will consist of a mix of lectures, fieldwork, assignments, and self-study. Outside the contact hours, participants are expected to spend additional hours in completing their assignments, which require self-study.

Type	Approach	Total Hours
Contact	Lecture	16
	Group work	10
	Group presentation	4
	Field works	30
Independent study	Assignments	10
	Self-study	10
<b>TOTAL</b>		<b>80</b>

### Assessment Approach

The participants will be assessed through poster or video clip presentation, quiz, and field report as detailed below.



### **A. Poster/video clip presentation (30%)**

Participants will work in groups of two or three to prepare and exhibit a poster or develop a short video clip based on their interest and skill in biodiversity and conservation-related topics. The posters/video clips will be assessed using the following criteria:

- 10 Content: Informative, accurate, and comprehensive.
- 6 Design: Design of the posters/video clip, organization including the layout, colour scheme, and appropriate use of visuals.
- 6 Creativity: Creativity in their posters/video clips, including the use of innovative ideas, unique approaches, and engaging visuals.
- 8 Presentation: Presentation skills of poster/quality of video clip including ability to answer questions.

### **B. Quiz (20%)**

At the end of the course, participants will appear on a written quiz consisting of 20 multiple-choice questions to evaluate their learning. Each question will carry one mark and will form a part of the assessment.

### **C. Field report (50%)**

Participants will be taken to Phobjikha (Khebethang) or nearby forest for 5 days of fieldwork excluding two travel days. Each participant will submit a 2000-word-long report of the fieldwork on any thematic areas covered during the field trip. The report should be academic and will have to be supported with data and figures, including pictures. The report will be evaluated based on the following criteria:

- 10 Short summary or extract of about 100-150 words.
- 15 Content – standards of the report, including plagiarism.
- 10 Visuals – appropriate graphs and figures.
- 15 Completeness – appropriate title, abstract/summary, introduction, main findings/results and discussion, conclusion and about 5 references.

### **Grading Scheme**

<b>Grade</b>	<b>Judgement of performance</b>	<b>Mark</b>
A+	Outstanding	80% and above
A	Very Good	70 - 79.9%
B	Good	60 - 69.9%
C	Satisfactory	50 - 59.9%
D	Fail	49.9% and below

### **Important notes**

#### **Plagiarism**

Plagiarism is the act of presenting someone else’s work, ideas, or intellectual property as one’s own without proper attribution. It is a serious violation of academic and professional integrity, and it undermines the values of originality, honesty, and scholarly rigour that we uphold.

Our university takes plagiarism seriously, and instances of plagiarism will result in severe consequences, including but not limited to academic penalties such as failure of the assignment, course or expulsion and legal consequences in cases of copyright infringement.

## Deadlines

Timely completion and submission of tasks and assignments are crucial, and as such, each student should understand and meet deadlines associated with his/her assigned tasks and assignments. Those failing to meet the deadline will lead to a deduction of marks.

## Content

**Type:** L: Lecture, FL: Field Lecture, D: Demonstration, GD: Group Discussion, A: Assignment, P/L: Practical/Lab, S: Seminar, OL: Observatory Learning, SR: Student Reflection, SE: Student Exercise

Content	Approach	Time (h)	Facilitator
<b>Unit 1: Introduction to biodiversity and its conservation</b> 1.1 Defining biodiversity 1.2 Concept of conservation 1.3 Importance of conserving biodiversity 1.4 History of biodiversity conservation 1.5 Principles and philosophy of biodiversity conservation	L	5	DB Gurung
<b>Unit 2: Flagship species and RTE (Rare, Threatened and Endemic)</b> 2.1 IUCN Red-list categories and criteria 2.2 Concept of flagship species 2.3 Concept of RTE species 2.4 RTE case studies (e.g., Tiger, WBH, Elephant, Red Panda, Golden Mahseer)	L	10	DB Gurung
<b>Unit 3: Selected conservation tools</b> 3.1 Introduction to Geographical Information System (GIS) as a conservation tool – concept and application of GIS, software, cartography, and basic map production 3.2 Remote sensing: analysis of satellite imagery or aerial photography to identify and map habitats and distribution 3.3 Concept of conservation genetics and eDNA – sample collection, DNA extraction, purification, sequencing,	L/D/A/P/L	15	Ugyen Thinley, DB Gurung & Karma Sherub

<p>and environmental DNA</p> <p>3.4 Protected areas management system (PAMS) – types of protected areas, monitoring tools, and protocols</p> <p>3.5 In-situ and ex-situ conservation – gene bank, herbaria, zoo, botanical gardens</p> <p>3.6 Environmental education – developing educational materials such as posters and video clips, organising environment awareness campaign etc.</p> <p>3.7 Habitat restoration and management of invasive species</p>			
<p><b>Unit 4: Crosscutting methods in biodiversity survey</b></p> <p>4.1 Camera traps – setting up camera, data retrieving and analysis</p> <p>4.2 Drones: setting up to survey large areas and identify habitats and movement patterns, data retrieving and analysis</p> <p>4.3 Citizen Science: Engaging public in data collection through online platforms or community-based programs</p> <p>4.4 Acoustic monitoring: Recording and analyzing sounds produced by animals and identification</p> <p>4.5 Radio telemetry: radio tagging, GPS transmitter, tracking, and mapping movement of animals</p> <p>4.6 Transect: To identify and count along a predetermined path, using visual or auditory cues to detect the presence</p>	L/D/A	10	DB Gurung, Ugyen Dorji & Staff from Dept. of Forest and Park Services (DoFPS)
<p><b>Unit 5: Mammal survey methods</b></p> <p>5.1 Setting up camera traps, data retrieving and analysis</p> <p>5.2 Scat surveys: collection of specimens and analysis</p> <p>5.3 Tracks and signs: using hooves marks, feathers, hairs etc.</p>	FL/GD/A/ D/OL/P/SR	8	DB Gurung, Karma Sherub, & Staff from DoFPS
<p><b>Unit 6: Bird survey methods</b></p> <p>6.1 Point count</p> <p>6.2 Mist netting</p> <p>6.3 Bird banding</p>	FL/GD/A/ D/OL/P/SR	8	Dr. Om Katel & Sherub Dorji, UWICER
<p><b>Unit 7: Herpetofauna survey</b></p> <p>7.1 Visual survey</p> <p>7.2 Using various traps in reptiles and</p>	FL/GD/A/ D/OL/P/SR	8	DB Gurung & staff from

amphibian survey 7.3 Mark and recapture			DoFPS
<b>Unit 8: Fish and macroinvertebrate sampling</b> 8.1 Fish sampling methods: cast nets, electro-shocker, seine net, line and spoon, rock flip 8.2 Macroinvertebrate sampling methods: D-net sampling	FL/GD/A/ D/OL/P/SR	8	Ugyen Dorji, DB Gurung & staff from DoFPS
<b>Unit 9: Sampling terrestrial Invertebrates</b> 9.1 Pitfall trap survey 9.2 Sweep net 9.3 Hand collecting 9.4 Baited trap 9.5 Light traps to collect nocturnal invertebrates such as moths and beetles 9.6 Other methods if possible	FL/GD/A/ D/OL/P/SR	8	DB Gurung, Cheten Dorji & staff from DoFPS

## Materials and Resources

Camera traps, Sherman traps, Drones, Mist nets, binoculars, bird sound caller, bat detector, electro-shockers, fish tagging guns, numbered fish tags, digital weighing balance, fish measuring tape, fish measuring board, fish landing net, fish weighing scale, sample collection jar, cast net, laser range finder, seine net, white enamel tray, D-frame net, waders, scissors, sweep nets, stainless nets, stainless steel insect pins, butterfly spreading board, adjustable spreading board, snake hooks, snake tongs, leather hand gloves, forceps, formalin, alcohol, glass aquarium, DNA kits, medical kits, and tents. While some of the equipment is in the college, some will have to be rented or borrowed from another organisation (e.g., Drones), and a few more need to be purchased.

## Reading Materials

- Ali, S. (1992). Field guide to the birds of the eastern Himalayas. Oxford University Press, Delhi.
- Bajracharya, R.M., Sitaula, B.K., Gurung, S., and Raut, N. (Eds.) (2022). *Sustainable natural resource management in the Himalayan Region: livelihood and climate change*. Nepal.
- Grierson, A.J.C. and Long, D.G. (1982-). *Flora of Bhutan*. Vol. 1-8, Royal Edinburgh Garden, UK and Royal Government of Bhutan.
- Gurung, D.B. and Thoni, R. (2015). *Fishes of Bhutan: A Preliminary Check list*. CRDS Publication, College of Natural Resources, Bhutan.
- Hunter, M.L. and Gibbs, J.P. (2007). *Fundamentals of conservation biology*. Blackwell publication.
- Inskipp, C. and Inskipp, T. (1999). *Birds of Bhutan*. WWF Bhutan, Bhutan.

Van Der, P.P. and Wangdi, T. (2007). *Butterflies of Bhutan: Mountains, hills and valleys between 800 and 3000m*. RSPN, Bhutan.

Wangchuk, T. (2004). *A Field Guide to the Mammals of Bhutan*. Department of Forestry, Thimphu Bhutan



## **Module 2: Natural Resources Management**

**Credit: 16**

**College of Natural Resources  
Royal University of Bhutan  
Lobesa, Punakha, Bhutan**

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**Course Director** : Ugyen Dorji ([ugyen.cnr@rub.edu.bt](mailto:ugyen.cnr@rub.edu.bt))  
**Module Name and Code** : MGT921  
**Duration** : Two Weeks

### Course Overview

The two-week long course focuses on the development of knowledge and skills in natural resources management. The course includes topics such as traditional practices in conservation, community-based natural resource management, and ethnobotany. The course will be delivered through theory (37.5%), fieldwork/practical (37.5%), assignments (12.5%), and self-study (12.5%). Fieldwork aims to provide skills and collect ethnobotanical information. The participants will be assessed through poster presentations and multiple-choice tests.

### Learning Outcomes

On completion of the course, the participants will be able to:

1. Explain the importance of natural resources management.
2. Describe the roles of community-based forestry, ecotourism and watershed management in conservation and sustainable livelihood.
3. Explore traditional practices of natural resources management.
4. Discuss the ethnobotanical values of common plants.
5. Explain watershed resource management.

### Learning and Teaching Approach

The teaching and learning approach will consist of a mix of lectures, fieldwork, assignments, and self-study. Outside the contact hours, participants are expected to spend additional hours completing their assignments, which require self-study.

Type	Approach	Total hours
Contact	Lecture	60
	Field work	
Independent study	Assignments	20
	Self-study	
<b>Total</b>		<b>80</b>

### Assessment Approach

The participants will be assessed through poster presentation and course examination as detailed below.

#### A. Poster presentation (50%)

Participants will work in groups of two or three to prepare and exhibit poster on natural resources management. The posters will be assessed using the following criteria:

- 10 Content: Informative, accurate, and comprehensive.

- 6 Design: Design of the posters, organization including the layout, colour scheme, and use of visuals.
- 6 Creativity: Creativity in their posters, including the use of innovative ideas, unique approaches, and engaging visuals.
- 8 Presentation: Presentation skills including ability to answer questions. The presentation will be evaluated based on confidence; ability communicate effectively.

**B. Course exam (50%)**

Participants will take a written exam of one hour duration covering subject matter of the three-week long course. The exam will consist of 50 multiple choice questions.

**Grading Scheme**

<b>Grade</b>	<b>Judgement of performance</b>	<b>Mark</b>
A+	An outstanding performance	80% and above
A	Very good performance	70 - 79.9%
B	Good performance	60 - 69.9%
C	Satisfactory performance	50 - 59.9%
D	Fail	49.9% and below

**Important notes**

**Plagiarism**

Plagiarism is the act of presenting someone else’s work, ideas, or intellectual property as one’s own without proper attribution. It is a serious violation of academic and professional integrity, and it undermines the values of originality, honesty, and scholarly rigour that we uphold.

Our university takes plagiarism seriously, and instances of plagiarism will result in severe consequences, including but not limited to academic penalties such as failure of the assignment, course or expulsion and legal consequences in cases of copyright infringement.

**Deadlines**

Timely completion and submission of tasks and assignments are crucial, and as such, each student should understand and meet deadlines associated with his/her assigned tasks and assignments. Those failing to meet the deadline will lead to a deduction of marks.

**Contents**

**Type:** L: Lecture, FL: Field Lecture, D: Demonstration, GD: Group Discussion, A: Assignment  
 P/L: Practical/Lab, S: Seminar, OL: Observatory Learning, SR: Student Reflection, SE: Student Exercise

**Course Content**



Contents	Approach	Time (h)	Facilitator
<b>Unit 1: Introduction to natural resources management</b> 1.1. Defining natural resources 1.2. Natural resources as components of ecosystem 1.3. Plants and animals as biotic resources 1.4. Abiotic resources: water resources, land and air 1.5. Common pool resources – tragedy of commons 1.6. Sustainable management of natural resources Renewable energy sources	L/GD	5	Dr. Om Katel
<b>Unit 2: Traditional practices in natural resources management in Bhutan</b> 2.1. Overview of natural resources in Bhutan: geography and biodiversity of Bhutan, forests and water resources, minerals and energy resources, wildlife and conservation. 2.2. Payment for ecosystem services (PES) 2.3. Local values and beliefs of natural resources management in the international context 2.4. Practices in Bhutan such as Ridam, Lhadham, religious forest, separate groups, protection of watershed or part of water source (e.g., practices in Southern Bhutan, Nyala Duem forest, Cloud-forest, Black Mountain, sacred groove etc.)	L/GD	5	Mr. Ugyen Dorji
<b>Unit 3: Community-based natural resource management</b> 3.1. Empowerment of local communities 3.2. Promotion of sustainable resource use 3.3. Development and implementation of policies and regulations governing	L/GD	20	Dr. Bhagat Suberi

<p>natural resource management</p> <p>3.4. Conflict management</p> <p>3.5. Successful case studies from Bhutan including river fishery management and community forestry</p>			
<p><b>Unit 4: Roles of research and policies</b></p> <p>4.1. Role of government policies in natural resources management</p> <p>4.2. Role of research in natural resources management</p> <p>4.3. Importance of research in monitoring natural resources status</p>	L/GD	5	Dr. Dhan Bdr. Gurung
<p><b>Unit 5: Integrated Watershed management</b></p> <p>5.1. Springshed management: theory and practice</p> <p>5.2. Sustainable land management including soil</p> <p>5.3. Sustainable agriculture practices including fishery and livestock resources</p> <p>5.4. Range and pasture management</p> <p>5.5. Forest landscape management including social forestry</p> <p>5.6. Water demand and supply management</p> <p>5.7. Field visit to watershed and PES site</p>	L/GD/FL	20	Mr. Ugyen Dorji
<p><b>Unit 6. Ethnobotany – local knowledge in managing useful plants</b></p> <p>6.1 Relationship between plant, people and culture</p> <p>6.2 Local healers and their plants</p> <p>6.3 Wild plants and food baskets – the edible wild plants</p> <p>6.4 Participatory mapping of plant distribution and use in the local area</p> <p>6.5 Roles of plants in rituals and traditions</p> <p>6.6 Field work on uses of plants</p>	L/GD/FL	20	Dr. Dhan Bdr. Gurung

<b>Unit 7: International cooperation to address transboundary natural resource management issues</b> 7.1 Understanding transboundary issues 7.2 Need for collaboration in transboundary issue management	L/GD	5	Dr. Om Kattel
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### Prerequisites

Basic understanding of environmental science and ecology is recommended but not mandatory.

### Note

The course may include guest lecturers by natural resources managers, practitioners and experts in natural resources management, providing students with direct insights and real-world perspectives.

### Materials and Resources

PowerPoint projector, whiteboard, marker pen and field notebook.

### Reading List

Bajracharya, R.M., Sitaula, B.K., Gurung, S., and Raut, N. (Eds.) (2022). Sustainable natural resource management in the Himalayan Region: livelihood and climate change, Nepal.

Berkes, F. (1989). *Common property resources: Ecology and community-based sustainable development*. Belhaven Press with the International Union for Conservation of Nature and Natural Resources.

Department of Research and Development Services, MOAF. (2002). *Community-based natural resource management in Bhutan: A framework*. Kuensel Corporation.

Means, K. and Josayma, C. (2002). *Community –based forest resource conflict management: A training package*. Food and Agriculture Organisation of the United Nations.

Menon, A., Singh, P., Shah, E., Lele, S., Paranjape, S. and Joy, K.J. (2007). *Community-based natural resource management: Issues and cases from South Asia*. Sage Publications India Pvt Ltd.

Sundaram, K.V., Moni, M. and Jha, M.M. (2004). *Natural resources management and livelihood security: Survival strategies and sustainable policies*. Concept Publishing Company.

Grierson, A.J.C. and Long, D.G. (1982-). *Flora of Bhutan*. Vol. 1-8, Royal Edinburgh Garden, UK and Royal Government of Bhutan.



## **Module 3: Traditional Ecological Knowledge in the Himalayas**

**Credit: 16**

**College of Natural Resources  
Royal University of Bhutan  
Lobesa, Punakha, Bhutan**

*The syllabus of this programme may change from time to time based on emerging needs, learning conditions, experiences and resources.*

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**Course Director** : Dr. Om Katel ([om.cnr@rub.edu.bt](mailto:om.cnr@rub.edu.bt))  
**Module Name and Code** : NRM907  
**Duration** : Two weeks

## Course Overview

The quality of environment around us is immensely important for our well-being. Addressing environmental challenges require not only scientific understanding of drivers affecting environmental change but also engagement of various stakeholders such as government, civil society, and individuals. One of the ways to address environmental challenges is to realise the knowledge and experience attained by local indigenous communities. Communities have lived and learned the ways to manage the environmental resources around them since millennia that would be useful also for current and the future. Specifically, the adaptation of communities with the environmental change and the knowledge they have drawn based on their practice to manage their environmental resources sustainably for now and the future can be generally referred to as Traditional Ecological Knowledges (TEK). TEK entails knowledge comprised of beliefs, action, and cultural practices. Such knowledge is often passed orally and by demonstration. Therefore, to make environmental management more effective and holistic, it is vital to learn from TEK and consider it as inclusive by valuing the perspectives of local people.

This course aims to provide a comprehensive understanding of the role of traditional ecological knowledge (TEK) in the Himalayas, where local communities/indigenous communities have generated the knowledge on how to adapt and manage their environmental resource and passed on from generation to generation benefiting them. The participants will learn about the concept of TEK and its importance in sustainable resource management and its role in preservation of cultural heritages, as well as its current status and challenges faced in its preservation. The participants will explore various ways in which TEK is integrated in Hindu Kush-Himalaya (HKH) regions through cases studies. As a field experience, participants will gain knowledge on integration of TEK in Bhutanese culture through different practices, folklore, and customary approaches. The participants will have the opportunity to learn methods and techniques on documentation and conservation of TEK.

## Learning Outcomes

On completion of the module, participants will be able to:

1. Explain the concept of TEK and its relevance to sustainable development in Bhutan and HKH region.
2. Analyse theories and concepts of TEK in relation to different practices and beliefs of local people among mountain communities in Bhutan.
3. Examine the role of TEK in conservation of environmental resources in Bhutan and in HKH regions.
4. Analyse and interpret how TEK has shaped human-environmental interactions in Bhutan and beyond.
5. Evaluate the documentation and conservation methods and techniques of TEK.

## Learning and Teaching Approach

The course comprises an understanding of theories, principles, and cases associated with TEK. Also, class discussions will be held concerning the methods and techniques employed to collect data associated with TEK during the first week. During the second week, the student will spend time in the field to collect and analyze data. Students are then required to present the result of their field study in the class relating to the principles of TEK. The course will be delivered through a combination of lectures, practicals and field visits using an interactive, student-centred approach to integrate scientific and TEK through field exercises and activities. The course delivery comprises theory, fieldwork, group activity, group discussion, assignment and independent study. The course will be assessed from a total of 100 marks. The assessment of the learning will be done in the form of assignments and class presentations, as detailed below.

Type	Approach	Hours per week	Total hours
Contact	Lecture	5	10
	Tutorials	5	10
	Group presentation	10	20
	Field study	10	20
	Written assignment	5	10
	Independent study	5	10
TOTAL			80

### Assessment Approach

The assessment, which reflects and tests the learning outcomes achieved by the participants, consists of a reflective essay and group presentation. The course tutor will provide details of the assessment along with the assessment rubrics. Course tutors are encouraged to provide feedback to participants on their assignments so that participants can improve based on the feedback.

#### A. Reflective Essay (40%)

Participants will be required to submit a written reflective essay individually reflecting on the concept of Traditional Ecological Knowledge (TEK) and its potential contribution to sustainable development in Bhutan and the Hindu Kush-Himalayan (HKH) region. The assignment should be based on the field experience of 1500-2000 words and should include references and case studies. The following marking criteria will be used.

- 05 Reflection and analysis (demonstrate a clear understanding of the topic and reflect on personal experiences, thoughts, and feelings related to the topic and provide critical assessment on the topic).
- 05 Use of relevant theories and concepts (use relevant theories and concepts related to the topic to support the analysis and evaluations).
- 05 Organization and coherence (well organized and coherent with a clear introduction, body, and conclusion).
- 05 Clarity and concision (clear and concise, proper grammar, punctuation, and spelling).
- 10 Use of evidence (use of relevant and credible evidence to support argument and analysis, proper citation, and reference).
- 05 Creativity and originality (demonstrate creativity and originality in the analysis and evaluation of the topic, provide insights and perspective on the topic).
- 05 Reflection on learning (reflect the learning gained from the course, highlight the areas of growth and need for further improvement).

## B. Class presentation

Participants will choose to design a topic for the field study. The topic should be under the broad theme of TEK and should be contextualised to Bhutanese cases. A group comprises three to five individuals and works as a team to collect data related to local traditional knowledge from Dagana or Zhemgang. Students will have three days' time to collect data and analyse the collected data in the field. The data collected should be analysed and presented in the class for grading. The presentation should include theories, principles, and concepts associated with cases around the world. The local cases relating to the evidence on TEK and the ways they are contributing to sustainable resource management in Bhutan and in the HKH region should be presented. Marking criteria for the presentation is as follows:

- 10 Presentation of the framework based on the cases around the world.
- 10 Use of theories and principles.
- 10 Methodology or approaches used for data collection.
- 10 Discussion of data types on local traditional knowledge.
- 10 Critical analyses on reflection of local traditional knowledge with reference to SDGs
- 10 Recommendations and significance of the study

## Grading Scheme

Grade	Judgement of performance	Mark
A+	An outstanding performance	80% and above
A	Very good performance	70 - 79.9%
B	Good performance	60 - 69.9%
C	Satisfactory performance	50 - 59.9%
D	Fail	49.9% and below

## Important notes

### Plagiarism

Plagiarism is the act of presenting someone else's work, ideas, or intellectual property as one's own without proper attribution. It is a serious violation of academic and professional integrity, and it undermines the values of originality, honesty, and scholarly rigour that we uphold.

Our university takes plagiarism seriously, and instances of plagiarism will result in severe consequences, including but not limited to academic penalties such as failure of the assignment, course or expulsion and legal consequences in cases of copyright infringement.

### Deadlines

Timely completion and submission of tasks and assignments are crucial, and as such, each student should understand and meet deadlines associated with his/her assigned tasks and assignments. Those failing to meet the deadline will lead to a deduction of marks.

## Course content

**Type:** L: Lecture, FL: Field Lecture, D: Demonstration, GD: Group Discussion, A: Assignment  
P/L: Practical/Lab, S: Seminar, OL: Observatory Learning, SR: Student Reflection, SE: Student Exercise

Contents	Approach	Time (h)	Facilitator
<b>Unit 1: Traditional Ecological Knowledge (TEK) in perspective</b> 1.1. Theories and principles of TEK. 1.2. Integrating TEK in Science. 1.3. Indigenous knowledge and community resource management. 1.4. Philosophical understanding of TEK. 1.5. Learning from indigenous knowledge and relate to TEK for environmental sustainability.	L/GD	15	Om Katel
<b>Unit 2: Case studies on TEK through historic times</b> 2.1. Historical evolution of TEK in Georgia, Canada and in Eastern Himalayas. 2.2. Diversification of TEK in response to Climate Change.	L/GD	10	Om Katel
<b>Unit 3: Role of TEK on conservation and development</b> 3.1. Communities and natural resources management. 3.2. Case of first European vision for Amazonian Indian. 3.3. TEK in south-east Asia. 3.4. Success indicator of development and knowledge of ecosystem.	L/GD/SR	15	Om Katel/experts on TEK from Ministries and NGOs
<b>Unit 4: Institutional and economic issues on TEK</b> 4.1. Characteristics of traditional resource use and ethno-economics. 4.2. Enhancement of social capital. 4.3. Ecological knowledge, subsistence and livelihoods.	FL/D	20	Dr. Thubten Sonam/Dr Mani Ram Muktan
<b>Unit 5: TEK Research and Documentation</b> 5.1. Techniques for TEK research and documentation. 5.2. Recording indigenous knowledge and practices. 5.3. Participatory mapping, Oral histories and community-based conservation 5.4. Ethical considerations in engaging with local communities.	L/OL/SR/SE	25	Local experts from field/Om Katel



<p><b>Unit 6: Challenges and Opportunities</b></p> <p>6.1. TEK to address Climate and Environmental challenges.</p> <p>6.2. Agriculture, forestry, water management &amp; natural resource management.</p> <p>6.3. Bio-cultural diversity.</p> <p>6.4. Role of local knowledge in environmental conservation.</p> <p>6.5. Implications of TEK for sustainable development</p> <p>6.5.1. Potential contribution of TEK: Poverty alleviation, Biodiversity conservation, Climate change adaptation</p>	L/A/GD	15	Om Katel
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### Prerequisites

Basic understanding of ethnobotany, ecology or natural resources management medicine is recommended but not mandatory.

### Note

The course may include guest lecturers by botanists, anthropology and ethno-botanists providing students with direct insights and real-world perspectives.

### Materials and Resources

Powerpoint projector, whiteboard, marker pen and field notebook.

### Reading List

Das, A., Gujre, N., Devi, R. J., & Mitra, S. (2021). A review on traditional ecological knowledge and its role in natural resources management: north east India, a cultural paradise. *Environmental management*, 1-22.

Das, A., Gujre, N., Devi, R. J., Rangan, L., & Mitra, S. (2023). Traditional ecological knowledge towards natural resource management: perspective and challenges in North East India. In *Sustainable Agriculture and the Environment* (pp. 275-294). Academic Press.

Dkhar, M., & Tiwari, B. K. (2020). Traditional ecological knowledge of tribal communities of North East India. *Biodiversitas Journal of Biological Diversity*, 21(7).

Gondo, R. (2022). Integration of traditional ecological knowledge and western science in natural resources management in the Okavango Delta, Botswana. *Journal of African Studies and Development*, 14(4), 141-153.

Hoagland, S. J. (2017). Integrating traditional ecological knowledge with western science for optimal natural resource management. *IK: Other Ways of Knowing*, 1-15.

- Houde, N. (2007). The six faces of traditional ecological knowledge: challenges and opportunities for Canadian co-management arrangements. *Ecology and Society*, 12(2).
- Huntington, H. P. (2000). Using traditional ecological knowledge in science: methods and applications. *Ecological applications*, 10(5), 1270-1274.
- Kim, S., Li, G., & Son, Y. (2017). The contribution of traditional ecological knowledge and practices to forest management: The case of Northeast Asia. *Forests*, 8(12), 496.
- Laudari, D. (2010). Implication of traditional ecological knowledge on forest resources management. *Himalayan Journal of Sociology & Anthropology*, 4.
- Lertzman, D. A. (2010). Best of two worlds: Traditional ecological knowledge and Western science in ecosystem-based management. *Journal of Ecosystems and Management*, 10(3).
- Mekonen, S. (2017). Roles of traditional ecological knowledge for biodiversity conservation. *Journal of Natural Sciences Research*, 7(15), 21-27.
- Menzies, C. R. (Ed.). (2006). *Traditional ecological knowledge and natural resource management*. U of Nebraska Press.
- Rai, S. C., & Mishra, P. K. (2023). Traditional ecological knowledge and resource management: a conceptual framework. In *Traditional ecological knowledge of resource management in Asia* (pp. 1-11). Cham: Springer International Publishing.
- Ray, L. A., Kolden, C. A., & Chapin III, F. S. (2012). A case for developing place-based fire management strategies from traditional ecological knowledge. *Ecology and Society*, 17(3).
- Ruiz-Mallén, I., & Corbera, E. (2013). Community-based conservation and traditional ecological knowledge: implications for social-ecological resilience. *Ecology and Society*, 18(4).
- Whyte, K. P. (2013). On the role of traditional ecological knowledge as a collaborative concept: A philosophical study. *Ecological processes*, 2(1), 1-12.



**Module 4: Project Work (RES915)**  
**Credit: 8**

**College of Natural Resources**  
**Royal University of Bhutan**  
**Lobesa, Punakha, Bhutan**

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**Course Director** : Chogyel Wangmo (chogyel.cnr@rub.edu.bt)  
**Code** : RES915  
**Duration** : Two Weeks

### Module Overview

This module is designed to provide students with the understanding and first-hand experience of carrying out a research project by applying concepts/theories and practice by integrating multiple sources of information and testing their analytical skills. It will allow the students to specialize to some extent in a given field of study.

### Learning Outcomes

On completion of the module, students will be able to:

10. Identify project topic (simple time bound topics) for research.
11. Retrieve, identify, select, and organize information.
12. Design a methodology for the project.
13. Carry out critical literature review for scientific writing with academic integrity.
14. Write a project proposal/plan by synthesizing various components.
15. Formulate a work plan to carry out the research.
16. Develop data interpretation, analytical and problem-solving skills.
17. Carry out a research project on the chosen topic.
18. Write a structured project report with graphic illustrations.

### Learning and Teaching Approach

The theoretical aspect of the course will be taught through lectures and classroom discussions with the aim of integrating critical thinking skills. Experiential learning will help the participants to gain hands-on experience in the course. The hours for learning and teaching approach are given as follows:

Type	Approach	Total Hours
Contact	Lecture	20
	Group discussion	4
Independent study	Project writeup	56
<b>Total</b>		<b>80</b>

### Assessment Approach

#### E. Process Evaluation: (10%)

Assessment will be carried out on a continuous basis starting from selection of the topic till final project report submission. A standardize format with timelines (see below) will be made

available by the Dean of Research and Industrial Linkages (Coordinator). Students should note that failing to meet any requirements of the Project guidelines and deadlines may result in non-acceptance of the final project.

- 5 All process timely met.
- 5 Meeting and discussion with Supervisor as agreed/scheduled.

**F. Project Proposal: (40%)**

The proposed project topic will be submitted to project supervisor. The assessment will be based on the following criteria:

- 5 Introduction
- 15 Methods & materials
- 11 Literature review
- 5 Overall presentation/structure
- 4 Work plan

**G. Final Project Report: (30)**

The final draft will be submitted to respective project supervisor who will. Research project report evaluation will be done by on following criteria, which will be averaged.

- 4 Introduction
- 4 Literature review
- 7 Materials & methods
- 7 Results & discussion
- 4 Conclusion
- 2 References
- 2 Overall presentation

**H. Project Presentation: (20%)**

Students are required to make a presentation about 20 minutes which will be evaluated by a panel of evaluators. The seminar will be evaluated based on the following criteria:

- 2 Communication skills
- 3 Structure
- 7 Content
- 2 Visuals
- 2 Confidence
- 2 Comprehensive
- 2 Interaction

**Grading Scheme**

Grade	Judgement of performance	Mark
A+	Outstanding	80% and above

A	Very Good	70 - 79.9%
B	Good	60 - 69.9%
C	Satisfactory	50 - 59.9%
D	Fail	49.9% and below

## Important notes

### Plagiarism

Plagiarism is the act of presenting someone else's work, ideas, or intellectual property as one's own without proper attribution. It is a serious violation of academic and professional integrity, and it undermines the values of originality, honesty, and scholarly rigour that we uphold.

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### Deadlines

Timely completion and submission of tasks and assignments are crucial, and as such, each student should understand and meet deadlines associated with his/her assigned tasks and assignments. Those failing to meet the deadline will lead to a deduction of marks.

### Contents

**Type:** L: Lecture, FL: Field Lecture, D: Demonstration, GD: Group Discussion, A: Assignment  
P/L: Practical/Lab, S: Seminar, OL: Observatory Learning, SR: Student Reflection, SE: Student Exercise

Contents	Approach	Time (h)	Facilitator
<b>Module 1. Introduction to Project Proposal Development</b> 1.9 Importance 1.10 Scientific approach and critical thinking 1.11 Research methods 1.12 Ethics and ethical standards 1.13 Reading literature	L/GD	12	Dr. Rekha Chhetri /Dr. Om Katel/Dr. DB. Gurung/ Dr. Sonam Tashi
<b>Module 2. Project Design and Reporting</b> 2.9 Purpose 2.10 Elements 2.11 Scientific report writing 2.12 Presentation skills 2.13 Case study 2.14 Proposal development for implementation	L/GD	12	Dr. Rekha Chhetri /Dr. Om Katel/Dr. DB. Gurung/ Dr. Sonam Tashi

## **Materials and Resources**

Books, LCD, Projectors, Stationery (chart paper, marker, staple, cellotape), White board, Bus, Tents, Utensils for cooking

## **Reading List**

- Alreck, P.L. and Settle, R.B. (2003). *The Survey Research Handbook* (4<sup>th</sup> Edition). McGraw Hill. Irwin, USA.
- Burns, R.B. (1990). *Introduction to Research Methods* (3<sup>rd</sup> ed.). Longman, Malaysia.
- Creswell, M.D. (2003). *Research Design: Qualitative, Quantitative and Mixed Methods Approaches*. Sage Publication. London.
- Punch, K.F. (2002). *Developing Effective Research Proposal, Essential Resources for Social Research*. London and New Delhi: Cromwell Press Ltd, Sage Publications Ltd.
- Thakur, D. (1993). *Research Methodology in Social Sciences*. Rajouri Garden, New Delhi: DEEP& DEEP Publications.



## **Ethnomedicine of Eastern Himalayas**

**Credit: 48**

**College of Natural Resources  
Royal University of Bhutan  
Lobesa, Punakha, Bhutan**

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## **Programme Overview**

The Ethnomedicine in the Eastern Himalayas summer school programme comprises three broad modules namely Nature and Wellness, Wild Edible Plants of Bhutan Himalaya and Ethnomedicine. The programme broadly aims to provide a comprehensive understanding of traditional healing practices and wild plant-based foods in the culturally diverse region of the Eastern Himalayas as well as the nature and wellness experience. This programme offers a unique opportunity for students, researchers, and enthusiasts to delve into the rich tapestry of ethnomedicinal knowledge and experience natural therapy and wild food that has been sustained and passed down through the generations.

The summer school programme is designed to provide students with an immersive experience to explore and learn about ethnomedicine, nature-based wellness and rich biodiversity in the Eastern Himalayas.

### **Mode of Learning**

The programme will be delivered using different learner-centred approaches, including cultural immersion, field studies, ethnobotanical tours, workshops, seminars, group presentations and assignments.

### **Cultural Immersion**

Students will be introduced to the cultural diversity of the Eastern Himalayan region, gaining insights into the food, traditions, rituals, and beliefs that shape ethnomedicinal practices and natural therapies.

### **Field Studies**

Students will be taken to remote villages and communities to witness firsthand the application of traditional healing methods. They will have the opportunity to interact with local healers and community members to understand the cultural context of ethnomedicine.

### **Workshops and Seminars**

There will be workshops and seminars on various aspects of ethnomedicine, including plant identification, preparation of traditional remedies, natural therapies, and the spiritual and cultural dimensions of healing practices, as well as discussion on wild foods.

### **Ethnobotanical Tours**

Students will explore the rich biodiversity of the Eastern Himalayan region and learn about the indigenous plants used in traditional medicine. Botanical experts will guide them through local forests, highlighting the significance of each plant in food and ethnomedicinal practices.

### **Documentation**

The students will engage with local communities through collaborative projects aimed at documenting and preserving ethnomedicinal knowledge. They will be encouraged to contribute to ongoing research initiatives and community-based health-care programmes.

## **Research project**

Students will engage in research activities in ethnomedicine, wellness and wild foods in the Eastern Himalayas encompass a broad spectrum of studies, including the documentation of plant-based wild foods, natural therapies, traditional medicinal practices, the identification of medicinal and food plants and the exploration of cultural beliefs and healing rituals.

## **Student Presentations**

The programme will conclude with students presenting their findings, reflections, and experiences. This will foster a collaborative learning environment and facilitate the exchange of ideas amongst the students.

## **Assessment**

The students' learning will be assessed using various approaches, including but not limited to the following: assignments, documentation, research project reports, and participation. The programme will be assessed from a total mark of 100 in each of the three modules. Specific details of the assessments and passing marks are provided for in the individual modules.

## **Finally...**

... by participating in this summer school programme, the students will not only broaden their academic knowledge but also contribute to the preservation and appreciation of unique ethnomedicinal practices, wellness natural therapies and wild foods.



**Module 1: Nature and Wellness**  
**Credit: 8**

**College of Natural Resources**  
**Royal University of Bhutan**  
**Lobesa, Punakha, Bhutan**

*The syllabus of this programme may change from time to time based on emerging needs, learning conditions, experiences, and resources.*

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**Course Director** : Chogyel Wangmo ([chogyel.cnr@cnr.edu.bt](mailto:chogyel.cnr@cnr.edu.bt))  
**Code** : HLT912  
**Duration** : Four Weeks

### Module Overview

This course focuses on exploring the concept of nature and its connection to wellness. It emphasizes the benefits of spending time in nature and its positive impact on physical, mental, and emotional health. The course introduces various nature experiences, such as hiking, bird watching and cultural tourism. Participants will learn about the importance of incorporating nature into daily life and traditional uses of plants and trees. The participants will also learn about local legends and folk stories and how they relate to nature. The course also highlights sustainable behaviour and living for personal and environmental well-being. The course will be delivered through theory, field activity, journal assignment and independent study. Field activity will develop skills on mindfulness, meditation and self-awareness through mindfulness walk, hiking, bird watching and visiting cultural sites. The participants will be assessed through their daily journal writing during the course period.

The course offers holistic approach of self-improvement, combining the benefit of nature, cultural understanding, and sustainable living to enhance various aspects of one’s well-being.

### Learning Outcome

On completion of the course, participants will be able to:

1. Explain the concept of nature and wellness and the benefits of spending time in nature.
2. Explain the importance of connecting with nature and engaging with nature-based mindfulness and meditation.
3. Examine the different types of nature experience, including mindfulness walk, hiking, meditation and bird watching.
4. Explain some traditional uses of plants and trees for health and well-being.
5. Explain local legends and folk stories related to nature and its role in Bhutanese culture.

### Learning and Teaching Approach

Summer school will take place for a duration of two weeks. During the course period, tutors will employ an interactive, student-centred approach, integrating critical thinking skills using the following strategies: practical exercises and activities, group work that includes discussions, collaborative and individual tasks, and independent study. The hours and credit for the learning and teaching approach are given as follows:

Type	Approach	Total Hours
Contact	Lecture	30
	Group Discussion	6
	Field Activity	30
Independent study	Student Exercise	4
	Journal Writing	10
<b>Total</b>		<b>80</b>

## Assessment Approach

The assessment, which reflect and test the learning achieved by the participants consist of a daily journal writing. Details of the assessment will be provided by the course tutor along with the assessment rubrics. The assessment approaches is given below along with assessment marks.

### A. Daily Journal (100%)

During the course period, participants will maintain daily journal that logs their experiences and insight gained. Participants will have the liberty to use any standard format to record journal. The participants will be assessed based on the following criteria:

20	Content
15	Topic coverage (the extent to which the article covers the topic and its relevance to course content)
15	Quality of analysis
20	Consistency
10	Originality and creativity
10	Organization and clarity
10	Grammar, spelling, and punctuation

### Grading Scheme

Grade	Judgement of performance	Mark
A+	Outstanding	80% and above
A	Very Good	70 - 79.9%
B	Good	60 - 69.9%
C	Satisfactory	50 - 59.9%
D	Fail	49.9% and below

### Important notes

#### Plagiarism

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## Deadlines

Timely completion and submission of tasks and assignments are crucial, and as such, each student should understand and meet deadlines associated with his/her assigned tasks and assignments. Those failing to meet the deadline will lead to a deduction of marks.

## Contents

**Type:** L: Lecture, FL: Field Lecture, D: Demonstration, GD: Group Discussion, A: Assignment  
P/L: Practical/Lab, S: Seminar, OL: Observatory Learning, SR: Student Reflection, SE: Student Exercise

Content	Approach	Time (h)	Facilitator
<b>Unit 1. Concept of nature and wellness</b> 1.1 Evolution in the concept of nature and wellness 1.2 Role of nature in promoting physical well-being 1.3 Relation between nature and mental well-being 1.4 Importance of connecting with nature 1.5 Potential risk associated to nature exposure (allergen, toxin, and environmental hazard) 1.6 A hike in the Nature (Dorothang)	L/GD/SE	10	Ms. Chogyel Wangmo/ Dr. Rekha Chhetri
<b>Unit 2. Benefit of spending time in nature</b> 2.1. Psychological and physical benefits of nature connection 2.2 Type of Nature experience (Hiking and trekking, camping, wildlife watching, Nature photography, outdoor recreation) 2.3 Nature conservation and restoration	L&GD	15	Ms. Chogyel Wangmo/Dr. Rekha Chhetri/Mr. Ugyen Dorji/ Ms. Yogeeta Dahal/Dr. Yonten Dorji

<p><b>Unit 3. Nature Experience and Nature based mindfulness</b>  3.1 Meditation  3.2. Concept of Ecopsychology, Ecotherapy, Wilderness therapy, forest bathing  3.3 Bird Watching (preparation of Bird watching, Habitat and ecology of bird, observation and identification, birding ethics)  3.3 Practice Ecotherapy through sensory contact and mindfulness (Lampheryi park)  3.4 Practice Forest bathing (immerse self in the forest in the mindful way): Khotokha-Wangdue  3.5 Bird watching in Punakha-Wangdue region</p>	L/SE/OL	25	Dr. Rekha Chettri/ Dr. Yonten Dorji/Ms. Chogyel Wangmo/ Dr. Om Katel/ Bird Sherub
<p><b>Unit 4. Cultural Heritages: Local legends and folk stories</b>  4.1 Traditional use of local plants and trees  4.2 Visit cultural heritage sites (Punakha Dzong/ Wangduephodrang Dzong/ Chimmi Lhakang/ Paro Taksang)  Module 5. Sustainable Behaviour and living  5.1 Sustainable and social equity  5.2 Energy and water conservation  5.3 Sustainable Consumption and food choice  5.4 Waste reduction and management</p>	L/OL	20	Dr. Thubten Sonam/Mr. Tandin Gyeltshen/Dr. DB Gurung/ Dr. Om Katel/Ms. Chogyel Wangmo/ Ms. Yogeeta Dahal
	L/GD	10	Dr. Thubten Sonam/Dr. Om Katel/Ms. Chogyel Wangmo/ Ms. Yogeeta Dahal/Ms. Anooja Nair

### Prerequisites

Basic understanding of environmental science and health is recommended but not mandatory.

### Note

The course may include guest lecturers by local healers, local experts on wellness and nature conservationists.

### Materials and Resources

PowerPoint projector, whiteboard, marker pen and field notebook.

## Reading List

Choden, K. (2013). *Bhutanese tales of the Yeti*. Proglen Trading Co., Ltd..

Choukas-Bradley, M. (2018). *The joy of forest bathing: Reconnect with wild places & rejuvenate your life*. Rock Point.

Jordans, B. (2010). *Bhutan: A Trekker's Guide*. Cicerone Press Limited.

Selhub, E. M., & Logan, A. C. (2012). *Your brain on nature: The science of nature's influence on your health, happiness and vitality*. John Wiley & Sons.

Williams, F. (2017). *The nature fix: Why nature makes us happier, healthier, and more creative*. WW Norton & Company.

Wohlleben, P. (2016). *The hidden life of trees: What they feel, how they communicate— Discoveries from a secret world* (Vol. 1). Greystone Books.





## **Module 2: Ethnomedicine of Eastern Himalayas**

**Credit: 8**

**College of Natural Resources  
Royal University of Bhutan  
Lobesa, Punakha, Bhutan**

*The syllabus of this programme may change from time to time based on emerging needs, learning conditions, experiences, and resources.*

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**Course Director** : Dr. Sonam Tashi ([stashi.cnr@rub.edu.bt](mailto:stashi.cnr@rub.edu.bt))  
**Code** : MAP902  
**Duration** : Four weeks

### Module Overview

The course contains topics on traditional medicinal plants, their classification and ethnomedicine and local medicinal practices and plant-based therapies amongst the diverse ethnic communities inhabiting the Eastern Himalaya region. The course also contains discussion conservation to reduce pressure on wild collection of medicinal herbs and for their future sustainability. This course aims to bridge the gap between traditional knowledge and modern scientific understanding, offering insights into the rich biodiversity of medicinal plants and the cultural context that shape ethnomedicinal practices.

The two-week course will be delivered using learner-centred approaches and assessment of the learning will be done through different methods, including group presentations and assignments.

### Learning Outcomes

On completion of the course, the participants will be able to:

1. Describe roles and importance of ethnomedicines.
2. Identify/classify different ethnomedicines of plant, animal, and mineral origins.
3. Explain different traditional healing practices.
4. Describe threats to sustainability of wild medicinal plants.
5. Explain the domestication and conservation practices of traditional medicinal plants.

### Learning and Teaching Approach

The course will be delivered through a combination of lectures, practical and field visits. Lectures will comprise introduction to importance of traditional medicines, healing practices, identification and classification of medicinal plants used in ethnomedicine. As part of learning, the participants will also visit relevant institutions, communities and medicinal herb gardens and farms in the country.

Type	Approach	Total hours
Contact	Lecture	16
	Field visit	26
	Herbarium collection	10
Independent study	Field visit report	16
	Documentation	8
	Self-study	4
<b>Total</b>		<b>80</b>

### Assessment Approach

The course will be assessed from a total of 100 marks. The assessment of the learning will be done in the form of assignments and written examination as detailed below.

### **A. Herbarium collection (50%)**

Herbarium collections provide systematic and organized documentation of medicinal plants used in traditional healing practices. Each specimen serves as a tangible record, containing essential information about the plant's taxonomy, habitat, and traditional uses. This assignment highlights the significance of the herbarium collection as a valuable tool in documenting and preserving the rich botanical diversity associated with ethnomedicine.

Each student will prepare a herbarium with at least 10 high and low medicinal plant specimens as part of the medicinal plant identification and classification exercise. The neatly developed herbarium should be submitted three days prior to the end of the study period, and it will be graded using the following criteria:

- 5 Specimen identification
- 10 Collection quality (preservation condition, natural colour and shape)
- 15 Documentation (habitat, associated flora and ethnomedicinal uses)
- 17 Labelling of plant specimens
- 3 Overall presentation

### **B. Field Visit Report (25%)**

Students will be taken on a field trip to Tsirang to explore holistic approaches to healthcare that have sustained the communities there, emphasizing the intricate balance between nature, culture, and well-being. The students will interact with traditional healers, medicine men and knowledgeable community members. Through these interactions, students are expected to gain insights into the indigenous knowledge systems, herbal remedies and spiritual practices that form the foundation of ethnomedicine in the Eastern Himalayas.

Three days after the trip, the students will submit a field trip report of 2,000-2,500 words. The following criteria will be used to evaluate the report:

- 1 Attractive title
- 10 Comprehension of ethnomedicine practices
- 10 Critiques of healing practices
- 4 Clarity, structure, and organization of the report

### **C. Documentation Assignment (25%)**

Students will, through desktop reviews and interviews, explore, record, and analyze the ethnomedicinal knowledge and practices prevalent in the Eastern Himalayas. The assessment aims to evaluate the depth and breadth of the documentation, including the identification of medicinal plants, traditional healing methods, cultural beliefs, and the overall significance of ethnomedicines in the region.

The documentation assignment worth 2,000-2,500 words should be submitted a week before the end of the course. The assignment will be evaluated based on the following criteria:

- 8 Content (depth and accuracy of information provided)
- 3 Organization (logical structure of the document)
- 5 Relevance

- 4 Originality
- 5 Clarity

### Grading Scheme

Grade	Judgement of performance	Mark
A+	An outstanding performance	80% and above
A	Very good performance	70 - 79.9%
B	Good performance	60 - 69.9%
C	Satisfactory performance	50 - 59.9%
D	Fail	49.9% and below

### Important notes

#### Plagiarism

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Our university takes plagiarism seriously, and instances of plagiarism will result in severe consequences, including but not limited to academic penalties such as failure of the assignment, course or expulsion and legal consequences in cases of copyright infringement.

#### Deadlines

Timely completion and submission of tasks and assignments are crucial, and as such, each student should understand and meet deadlines associated with his/her assigned tasks and assignments. Those failing to meet the deadline will lead to a deduction of marks.

#### Contents

**Type:** L: Lecture, FL: Field Lecture, D: Demonstration, GD: Group Discussion, A: Assignment  
P/L: Practical/Lab, S: Seminar, OL: Observatory Learning, SR: Student Reflection, SE: Student Exercise

Contents	Approach	Time (h)	Facilitator
<b>un 1: Understanding Eastern Himalayan Biodiversity</b> 1.6. Overview of the Eastern Himalayan region: Geographical, cultural, and ecological diversity. 1.7. Identification and classification of key medicinal plant species. 1.8. Importance of biodiversity conservation in ethnomedicinal	L/GD	5	Sonam Tashi/???

practices.			
<b>Unit 2: Cultural and Historical Perspectives</b> 2.3. Historical evolution of ethnomedicines in Eastern Himalayas. 2.4. Influence of various cultures and ethnic groups on medicinal practices. 2.5. Role of traditional healers and their significance in the community.	L/GD	5	Sonam Tashi
<b>Unit 3: Traditional Healing Systems</b> 3.5. Comparative analysis of traditional healing systems (Ayurveda, Traditional Chinese Medicine, Tibetan Medicine, etc.) in the Eastern Himalayan context. 3.6. Integration of spiritual and ritualistic elements in ethnomedicinal practices. 3.7. Case studies showcasing traditional healing methodologies.	L/GD/SR	20	Sonam Tashi/Locals healers
<b>Unit 4: Medicinal Plant Identification and Usage</b> 4.4. Field visits and practical sessions for the identification of medicinal plants. 4.5. Understanding plant parts used, preparation methods, and dosage. 4.6. Sustainable harvesting and cultivation practices.	FL/D	20	Sonam Tashi/Drun gtsho Sangay Wangdi
<b>Unit 5: Ethnobotanical Research and Documentation</b> 5.5. Techniques for ethnomedicinal research and documentation. 5.6. Recording indigenous knowledge and practices. 5.7. Ethical considerations in engaging with local communities.	L/A	15	Sonam Tashi/Drun gtsho Sangay Wangdi/Sh erub Dorji
<b>Unit 6: Challenges and Opportunities</b> 6.6. Conservation challenges facing medicinal plant species in Eastern Himalayas. 6.7. Economic opportunities and sustainable livelihoods through ethnomedicinal practices. 6.8. Government policies and initiatives supporting traditional medicine.	L/A/GD	5	Sonam Tashi
<b>Unit 7: Integrating Traditional and Modern Medicine</b> 7.1. Collaborative approaches to bridge traditional and modern medical	L/A/GD	5	Sonam Tashi

systems. 7.2. Scientific validation of ethnomedicinal practices. 7.3. Opportunities for interdisciplinary research and collaboration.			
<b>Unit 8: Future Prospects and Sustainability</b> 8.1. Innovations in ethnomedicine and the potential for drug discovery. 8.2. Sustainable practices for the long-term preservation of traditional knowledge. 8.3. The role of education and awareness in ensuring the continuity of ethnomedicinal practices.	L/A/GD	5	Sonam Tashi

### Prerequisites

Basic understanding of ethnobotany, ecology or traditional medicine is recommended but not mandatory.

### Note

The course may include guest lecturers by traditional healers, botanists, and experts in ethnomedicine, providing students with direct insights and real-world perspectives.

### Materials and Resources

PowerPoint projector, whiteboard, marker pen and field notebook.

### Reading List

Brizzi, K., Deki, S., Tshering, L., Clark, S. J., Nirola, D. K., Patenaude, B. N., ... & Mateen, F. J. (2016). Knowledge, attitudes and practices regarding epilepsy in the Kingdom of Bhutan. *International health*, 8(4), 286-291.

Chetri, B. K. (2019). Ethnobotanical study of south eastern foothills of Bhutan. *Asian Plant Res J*, 2(1), 1-20.

Lepcha, S. R., & Das, A. P. (2011). Ethno-medico-botanical exploration along the international borders to Tibet Autonomous Region of China and the kingdom of Bhutan with special reference to the Pangolakha Wildlife Sanctuary, East Sikkim. *East Sikkim: Recent Studies in Biodiversity and Traditional Knowledge in India*, 257, 270.

Ngawang, R. Indigenous medicinal plants of Bhutan. *Ethnomedicine practices of Bhutan*.

Rabgyal, J., & Pelden, K. (2020). *Sustainable harvesting practices for endangered medicinal plants of Bhutan*.

- Seshagirirao, K., Harikrishnanaik, L., Venumadhav, K., Nanibabu, B., Jamir, K., Ratnamma, B. K., & Kunal, D. (2016). Preparation of herbarium specimen for plant identification and voucher number. *Roxburghia*, 6(1-4), 111-119.
- SujataDeo, R. D., Khubalkar, R., & Thombre, S. Modern Technique for Collection of Medicinal Plant (*Cleistanthus collinus*) and Preparation of Herbarium Specimen.
- Wangchuk, P., Namgay, K., Gayleg, K., & Dorji, Y. (2016). Medicinal plants of Dagala region in Bhutan: their diversity, distribution, uses and economic potential. *Journal of ethnobiology and ethnomedicine*, 12, 1-19.
- Yeshi, K., Aagaard-Hansen, J., & Wangchuk, P. (2021). Medicinal, nutritional, and spiritual significance of plants in Bhutan: their biodiscovery potential and conservation status. *Ethnobiology of Mountain Communities in Asia*, 1-25.
- Yeshi, K., Gyal, Y., Sabernig, K., Phuntsho, J., Tidwell, T., Jamtsho, T., ...& Wangchuk, P. (2019). An integrated medicine of Bhutan: Sowa Rigpa concepts, botanical identification, and the recorded phytochemical and pharmacological properties of the eastern Himalayan medicinal plants. *European Journal of Integrative Medicine*, 29, 100927.



## **Module 3: Wild Edible Plants of Bhutan Himalaya**

**Credit: 16**

**College of Natural Resources  
Royal University of Bhutan  
Lobesa, Punakha, Bhutan**

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**Course Director** : Karma Wangchuk ([karmaw.cnr@rub.edu.bt](mailto:karmaw.cnr@rub.edu.bt))  
**Code** : MAP903  
**Duration** : Four Weeks

### Module Overview

This two-week course is designed to introduce participants to the rich diversity of wild fruits and vegetables found in the Himalayas of Bhutan. The course will cover the identification, cultivation, and culinary uses of these wild plants. The course will also explore the nutritional benefits of incorporating wild plants into one's diet and the importance of conservation and sustainable harvesting practices, as well as the cultural significance of these plants in the traditional Bhutanese way of life. The course will be delivered through theory, fieldwork/practicals, assignments, and self-study. The participants will be assessed using various methods, such as written assignments and field trip reports.

### Learning Outcome

On completion of the course, the participants will be able to:

1. Understand the basic botany of wild plants.
2. Identify wild fruits and vegetables found in the Bhutan Himalaya region.
3. Explore the culinary uses of wild plants.
4. Understand the nutritional and health benefits.
5. Examine the cultural significance of wild plants in the traditional Bhutanese way of life.

### Learning and Teaching Approach

Following contact and independent study approach will be used for the course.

Type	Approach	Total Hours
Contact	Lecture	9
	Group discussion/presentation	1
	Field visits /practicals	28
Independent	Assignment	22
<b>Total</b>		<b>80</b>

### Assessment Approach

The following assessments are mandatory to be completed by the participants, which include written assignments, nutritional analysis projects and field trip reflection reports.

### Assessment Approach

#### 4. Written Assignment (40%)

Participants will write an essay of 1500-2000 words regarding the cultural, culinary and medicinal significance of wild fruits and vegetables found in Bhutan Himalaya. The written essay will be assessed using the following criteria:

5	Introduction
15	Content
5	Language
5	Structure
5	Evidence
5	References

### 5. Field trip reflection report (60%)

To gain the field experience and exposure of wild fruits and vegetables of Bhutan Himalaya, the participants will go for a field trip to nearby forest and village to study the different wild fruits and vegetables and their application in Bhutanese cuisines. After every field trip, each participant will write a reflection report and it will be assessed as follows:

5	Context and introduction
30	Content
10	Language and critique
5	Format
5	Originality
5	Conclusion

### Grading Scheme

Grade	Judgement of performance	Mark
A+	Outstanding	80% and above
A	Very good	70 - 79.9%
B	Good	60 - 69.9%
C	Satisfactory	50 - 59.9%
D	Fail	49.9% and below

### Important notes

#### Plagiarism

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#### Deadlines

Timely completion and submission of tasks and assignments are crucial, and as such, each student should understand and meet deadlines associated with his/her assigned tasks and assignments. Those failing to meet the deadline will lead to a deduction of marks.

## Contents

**Type:** L: Lecture, FL: Field Lecture, D: Demonstration, GD: Group Discussion, A: Assignment  
P/L: Practical/Lab, S: Seminar, OL: Observatory Learning, SR: Student Reflection, SE: Student Exercise

Contents	Teaching Approach	Time (h)	Facilitator
<b>Unit 1: Introduction to Wild Fruits and Vegetables of Bhutan Himalaya</b> 1.1 Overview of Bhutan Himalayan region and its flora 1.2 Ecological importance of wild plants in the region 1.3 Cultural Significance of wild plants 1.4 Traditional beliefs and customs, Importance of wild plants in Bhutanese festivals and ceremonies, Role of wild plants in preserving Bhutanese cultural identity, Conservation, and sustainable harvesting of wild edible plants	L	10	Dr. DB Tandin Gyeltshen
<b>Unit 2: Botany of wild fruits and vegetables</b> 2.1 Basic botany of wild edible plants 2.2 Taxonomy of wild edible plants 2.3 Common wild fruits and vegetables 2.4 Practical session on identification of wild fruits and vegetables 2.5 Field trip to explore and identify the different wild fruits and vegetables (In and around Punakha and Wangdue) 2.6 Written assignment	L & D & P/L & F/L	30	Dr. DB, Ugyen Dorji
<b>Unit 3: Use of Wild Edible Plants in Bhutan Himalaya</b> 3.1 Traditional Bhutanese dishes using wild Edible plants. 3.2 Nutritional and health benefits of incorporating wild plants into one's diet 3.3 Preparing food from wild plants in Bhutanese cuisine 3.4 Practical session (Pickle, Soup (mushroom, bamboo, vassica, <i>patsa</i> -cane, wild flower, <i>damroo</i> , <i>nakey</i> ) 3.4 Field trip to Tsirang/Dagana/Trongsa 3.5 Report writing	L & D & P/L & F/L	40	Karma Wangchuk/ Ugyen

<b>Total</b>	<b>80</b>	
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### **Materials and Resources**

Plant identification book, Magnifying glass, Knife/Pruning shears, Hand gloves, Camera, GPS, LCD screen, Projector, Whiteboard, Marker pens, Raw materials for practical session, Microscope.

### **Reading list**

Yangdon, P., Araki, T., Rahayu, Y. Y. S., & Norbu, K. (2022). Ethnobotanical study of wild edible fruits in eastern Bhutan. *Journal of Ethnobiology and Ethnomedicine*, 18(1), 27. <https://doi.org/10.1186/s13002-022-00526-8>

Belwal, T., Bhatt, I. D., & Devkota, H. P. (Eds.). (2022). *Himalayan Fruits and Berries: Bioactive Compounds, Uses and Nutraceutical Potential*. Elsevier.

Kunwar, R. (2017). *Wild Edible Vegetables of Lesser Himalayas. Ethnobotanical and Nutraceutical Aspects, Volume 1*. Springer.



**Module 4: Project Work (RES915)**  
**Credit: 8**

**College of Natural Resources**  
**Royal University of Bhutan**  
**Lobesa, Punakha, Bhutan**

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**Course Director** : Chogyel Wangmo (chogyel.cnr@rub.edu.bt)  
**Code** : RES915  
**Duration** : Two Weeks

### Module Overview

This module is designed to provide students with the understanding and first-hand experience of carrying out a research project by applying concepts/theories and practice by integrating multiple sources of information and testing their analytical skills. It will allow the students to specialize to some extent in a given field of study.

### Learning Outcomes

On completion of the module, students will be able to:

19. Identify project topic (simple time bound topics) for research.
20. Retrieve, identify, select, and organize information.
21. Design a methodology for the project.
22. Carry out critical literature review for scientific writing with academic integrity.
23. Write a project proposal/plan by synthesizing various components.
24. Formulate a work plan to carry out the research.
25. Develop data interpretation, analytical and problem-solving skills.
26. Carry out a research project on the chosen topic.
27. Write a structured project report with graphic illustrations.

### Learning and Teaching Approach

The theoretical aspect of the course will be taught through lectures and classroom discussions with the aim of integrating critical thinking skills. Experiential learning will help the participants to gain hands-on experience in the course. The hours for learning and teaching approach are given as follows:

Type	Approach	Total Hours
Contact	Lecture	20
	Group discussion	4
Independent study	Project writeup	56
<b>Total</b>		<b>80</b>

### Assessment Approach

#### I. Process Evaluation: (10%)

Assessment will be carried out on a continuous basis starting from selection of the topic till final project report submission. A standardize format with timelines (see below) will be made

available by the Dean of Research and Industrial Linkages (Coordinator). Students should note that failing to meet any requirements of the Project guidelines and deadlines may result in non-acceptance of the final project.

- 5 All process timely met.
- 5 Meeting and discussion with Supervisor as agreed/scheduled.

**J. Project Proposal: (40%)**

The proposed project topic will be submitted to project supervisor. The assessment will be based on the following criteria:

- 5 Introduction
- 15 Methods & materials
- 11 Literature review
- 5 Overall presentation/structure
- 4 Work plan

**K. Final Project Report: (30)**

The final draft will be submitted to respective project supervisor who will. Research project report evaluation will be done by on following criteria, which will be averaged.

- 4 Introduction
- 4 Literature review
- 7 Materials & methods
- 7 Results & discussion
- 4 Conclusion
- 2 References
- 2 Overall presentation

**L. Project Presentation: (20%)**

Students are required to make a presentation about 20 minutes which will be evaluated by a panel of evaluators. The seminar will be evaluated based on the following criteria:

- 2 Communication skills
- 3 Structure
- 7 Content
- 2 Visuals
- 2 Confidence
- 2 Comprehensive
- 2 Interaction

**Grading Scheme**

Grade	Judgement of performance	Mark
A+	Outstanding	80% and above

A	Very Good	70 - 79.9%
B	Good	60 - 69.9%
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D	Fail	49.9% and below

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P/L: Practical/Lab, S: Seminar, OL: Observatory Learning, SR: Student Reflection, SE: Student Exercise

Contents	Approach	Time (h)	Facilitator
<b>Module 1. Introduction to Project Proposal Development</b> 1.14 Importance 1.15 Scientific approach and critical thinking 1.16 Research methods 1.17 Ethics and ethical standards 1.18 Reading literature	L/GD	12	Dr. Rekha Chhetri /Dr. Om Katel/Dr. DB. Gurung/ Dr. Sonam Tashi
<b>Module 2. Project Design and Reporting</b> 2.15 Purpose 2.16 Elements 2.17 Scientific report writing 2.18 Presentation skills 2.19 Case study 2.20 Proposal development for implementation	L/GD	12	Dr. Rekha Chhetri /Dr. Om Katel/Dr. DB. Gurung/ Dr. Sonam Tashi



## **Materials and Resources**

Books, LCD, Projectors, Stationery (chart paper, marker, staple, cellotape), White board, Bus, Tents, Utensils for cooking

## **Reading list**

- Alreck, P.L. and Settle, R.B. (2003). *The Survey Research Handbook* (4<sup>th</sup> Edition). McGraw Hill. Irwin, USA.
- Burns, R.B. (1990). *Introduction to Research Methods* (3<sup>rd</sup> ed.). Longman, Malaysia.
- Creswell, M.D. (2003). *Research Design: Qualitative, Quantitative and Mixed Methods Approaches*. Sage Publication. London.
- Punch, K.F. (2002). *Developing Effective Research Proposal, Essential Resources for Social Research*. London and New Delhi: Cromwell Press Ltd, Sage Publications Ltd.
- Thakur, D. (1993). *Research Methodology in Social Sciences*. Rajouri Garden, New Delhi: DEEP& DEEP Publications.