Advanced Liberal Arts Course

Global Resource Management

2026

履修要項

2025年度以降生用

同志社大学
Doshisha University

Ⅰ.GRM(グローバル・リソース・マネジメント)コースとは

1.趣旨

不確実かつ複雑で曖昧さを含んだ現代社会では、将来の予測が困難である。グローバル・リソース・マネジメントコースは、社会の課題に対応するために科学を実践的に応用し、他者と共に問題を克服する「知恵」と、知識や情報を活用して事象を読み解き、主体的に判断できる高度なリテラシーを獲得することを目的とする。

2.人材養成目的

「資源」を天然資源に限らず、人的資源や社会関連資本などを含めて幅広く捉え、それらを適正に配分することにより、持続可能で平和な世界を支える社会基盤を整備し、他者と協働して課題解決に取り組む実行力を有する人材を養成することを目的とする。

3.コースの編成方針

科学を実践的に応用し、人間関係構築および組織・プロジェクト運営に関するスキルを含む「技術」を涵養するとともに、その「技術」を社会に資するための良心に基づく判断および新しい価値を創出する知恵を備えるため、異なる専門分野や文化背景を有する他者との共修を通じ、多角的視野、汎用性および応用力に富んだ能力を修得できる授業科目により編成する。

4.ディプロマ(サーティフィケート)・ポリシー

本コースワークでは、次に掲げる能力を身につけたと認められる者を修了とする。

知識・技能

専門分野の枠を越えた幅広い視点や異なる着想等の獲得により、多様性の理解や応用性の高い能力の基礎を形成し、以後の自律的な知識や技能の拡張ができる。人類社会の共通資源をいかに適正に配分するかという命題について学び、その解決策を共修の場を通して見出す技能を身につける。

思考力・判断力・表現力

学理の異なる学生が共修することにより、博士課程の学生に求められる普遍的な力として、多角的な思考力、全体を俯瞰した判断力、理解を共有できる表現力を身につける。

主体性・多様性・協働性

Issue focused(課題追求型)かつ Solution oriented(解決志向型)の教育手法を通じて主体的に問題解決に取り組む姿勢を身につける。複合的課題に対しグループワークを用いて解決策を導くことにより、事象を多角的にとらえる多様性や協働性を身につける。

5.カリキュラム・ポリシー

現代社会の実情や課題に触れ、課題解決に向けた実践的な提案をグループで検討・策定する科目を必修とする。これにより、自身が修得すべき知識や能力、必要な視点を認識し、主体的に学習計画を設計できるようになることを目標とする。また、課題解決に必要となる分野横断的な知識や視点を幅広く学び、得意分野をさらに伸ばすこと、不足している分野の学習を深めることを可能とする科目を選択する。
本コースを修了するためには、必修科目を含み 10 単位の修得が必要である。

※ アドバンスト・リベラルアーツ(ALA)科目群

所属研究科で身につけた専門性を社会の場で活かせるように、大学院生に相応しい基盤的な能力を専門性とは別の観点から獲得することを目的として、分野・領域横断型教育を行う科目の集まりです。広い視野と高い精神を涵養するリベラルアーツ教育の理念にのっとり“良心”を精神的支柱として現代社会で活躍できる以下の能力を有する人物を育成します。

・普遍的な見方から全体像を捉える「俯瞰力」
・複数の専門知を組み合わせて文理融合の事象にアプローチできる「総合力」
・未来を読み解く「創造力」
・良心を支柱に人間社会の将来のあり方を示す「提案力」

特定の領域にとどまらない知識やスキル、複眼的な視野を身に付け、大学院修了後の進路選択やキャリア形成に役立ててください。

【大学院共通科目】アドバンスト・リベラルアーツ科目群（ALA 科目群）			研究科横断副専攻プログラム
グローバル・リソース・マネジメント(GRM)コース	「次の環境」協創コース	サイエンスコミュニケーションコース	Comm 5.0 – AI・データサイエンス副専攻プログラム
・困難を克服するための「知恵」の獲得 ・大学院レベルの高度なリテラシーの獲得 ・専門分野の壁を越え、英語で学ぶ	・自然科学と人文社会科学の融合 ・「大学」と「企業」の壁を越えた社会人との共修 ・社会実装を見据えたイノベーションの具現化	・科学技術に関する基礎的知識と、その社会的背景を理解 ・科学と社会の関係性やコミュニケーションの枠組みを学ぶ ・科学的情報をわかりやすく伝えるスキルの修得 ・科学的情報発信の実践力強化	・Society 5.0 における新たなCommunicationとCommunityの在り方を考察する ・先端的情報工学技術の活用を学ぶ ・社会と連携した研究活動の実践

Ⅱ.GRM コースの科目履修およびコース修了

1．履修方法

博士課程の前期課程・後期課程に所属する全大学院生に履修資格がありますが、修得した単位の取扱いは、研究科毎に異なります。多くの研究科で課程修了に必要な単位に算入されますが、算入の可否、算入単位の上限等は、所属する研究科の履修要項で確認し、履修計画を立ててください。

登録はシラバスを確認のうえ、所定の履修科目登録期間に DUET で行います。

なお、「On-site Group Work」は海外での実習を伴うため 10 名程度の定員とし、登録者が多い場合には選考を行います。選考により履修できなくなった場合には、同時履修が必要な「On-site Group Work Introduction」と併せて、大学が登録を削除します。選考は 4 月中に実施されるため、削除された 4 単位分は、秋学期に登録追加してください。

2．コース修了（コース登録・修了要件）

コース修了には、必修科目を含む 10 単位の修得が必要です。

GRM 科目の履修者にはコース修了の希望を調査し、修了希望者を「コース履修生」として登録します。コース履修生は DUET のメニュー「その他教育プログラム」にある「グローバル・リソース・マネジメント」から、コースの科目一覧や履修状況（履修年度や成績など）を確認することができます。

コース履修生を対象に修了判定を行い、コース修了者には修了証を授与します。また、学修歴のデジタル証明であるオープンバッジ発行について案内します。

Ⅲ.2026 年度 開講科目一覧（配当年次はすべて M1～）

必修／選択	科目コード	クラスコード	科目名	担当者	単位	期間	校地
必修	35650600	000	On-site Group Work Introduction	大西　有子	2	春学期	今出川
	35650601	000	On-site Group Work	大西　有子	2	春学期	今出川
	35650651	000	Seminar for Advanced Liberal Arts	大西　有子 内藤　正典	2	秋学期	今出川
選択	35650611	000	Resource Management for Coexistence and Cultural Diversity	大西　有子 小山田　英治 稲葉　稔 長岡　直人 中川　正夫 八木　匡 濱　真一郎	2	春学期	リアルタイム オンライン
	35650621	000	Mathematics and Physics as Liberal Arts	Camille-faith PASCUA ROMERO	2	春学期	リアルタイム オンライン
	35650622	000	Infrastructure Design for Human Communities	Camille-faith PASCUA ROMERO	2	秋学期	リアルタイム オンライン
	35650623	000	Environmental Earth Science as Liberal Arts	大西　有子	2	秋学期	今出川
	35650624	000	Global Resource Management: Interdisciplinary Approach 1 -Climate Change-	大西　有子	2	春学期	リアルタイム オンライン
	35650634	000	Global Resource Management: Interdisciplinary Approach 2 -Transdisciplinary Research Methods-	大西　有子	2	秋学期	今出川
	35650625	000	Global Resource Management and Sustainable Development Goals1	大西　有子	2	春学期	今出川
	35650635	000	Global Resource Management and Sustainable Development Goals 2	大西　有子	2	秋学期	リアルタイム オンライン
	35650631	000	Global Resource Management and International Relations	休講	2		
	35650632	000	Research Methods of Social Sciences	休講	2		
	35650633	000	Global Society in the Modern World	小山田　英治	2	秋学期	今出川
	35650641	000	GRM Topics 1 -Natural Hazards and Disaster Management-	松川　杏寧	2	春学期	今出川
	35650642	000	GRM Topics 2 -Topics in Mathematics for Information and Data Sciences-	徳山　豪	2	春学期	今出川
	35650643	000	Capacity Development for Coexistence and Cooperative Works	西川　由紀子	2	春学期	今出川
	35650644	000	Introductory Laboratory of Infrastructures	池田　陽紀	2	秋学期	京田辺

・授業は英語で行われますが、履修生の語学力を考慮して、部分的に日本語で行われることもあります。
・履修生の通学校地のバランス等により校地を変更する可能性があります。
・集中講義以外の教室で行われる科目について、オンデマンド配信の授業（1 週目の DO Week 等）の有無はシラバスで確認してください。配信授業がない場合は科目担当者が別途、日程を設定します。
・「On-site Group Work」は「On-site Group Work Introduction」と同時履修が必要です。
・「Introductory Laboratory of Infrastructures」は実習科目のため週 4 時間、他は週 2 時間授業です。

Ⅳ. 2026 年度開講科目の概要

On-site Group Work Introduction	This course provides introductory lectures and workshops for the "On-site Group Work" course. It is composed of lectures, students' activities, and a visit to a Daikin Corporation. The aim of this course is to provide essential information for the field study in "On-site Group Work" and practical training to improve skills for interdisciplinary collaboration before departure. In 2026, the students will undertake two group projects in "On-site Group Work Introduction". 1. Campus/company tour Students will design and implement a tour of their own campus/company to other students 2. Doshisha carbon neutral proposal Students will develop a proposal to reduce carbon emission at Doshisha university by 2030 Successful completion of this course is required for the students to undertake the field study in "On-site Group Work". Please check the lecture schedule carefully and make sure that you are available on the dates indicated below. Only 10 students will be selected to participate in “On-site Group Work”. Students who were not successful in the selection will be automatically withdrawn from this course. (Please check the syllabus for “On-site Group Work” regarding the selection process.

On-site Group Work	We are currently facing a significant and complex global resource crisis, to which effective solutions are urgently sought. We must now collaborate and integrate all relevant knowledge, expertise, interests, and aspirations to tackle the unprecedented challenges. In this course, students will gain hands-on experience of interdisciplinary and transdisciplinary collaboration by carrying out a group project on the themes of global significance. Students from different schools in Doshisha university and professionals in a private company will join the course. They will travel together to a foreign country to collect information and data necessary for the group project. The theme for the 2026 program is, Climate actions and clean energy transition in the European Union – collaboration and co-creation toward carbon neutral society.

	Destination. Belgium Date. 1 week between 16-23 August Presentation. 4 September Climate change is now affecting every corner of our life. Hot weather is killing over half a million people annually. Changes in precipitation and temperatures are affecting our natural resources. To avoid catastrophic changes in our environment and society, the global leaders agreed for carbon neutrality by 2050. Nations, industries, communities and individuals are all expected to make efforts to achieve this challenging goal. Europe is at forefront of the global efforts in carbon neutrality. In 2026, the students in On-site Group Work will visit Belgium, to learn about the policy framework, technological and research development, consumer preferences, and community actions in European cities. Based on the lessons learned from the European experience, students will develop the guide for climate actions in their group project and present it in an open seminar. Note on the selection. Only 10 students are permitted to undertake this course. The participants to this course will be selected through the following procedure. 1.Students enrolled for this course will be invited to attend the guidance session at the 3rd lecture period on the 17th April (Fri). 2.<Screening> After the guidance session, students will be requested to submit a form during the guidance session. Screening will take place based on the information submitted.(Please make sure that you can use your PC to fill in the form at the guidance session.) 3.<Interviews> Interviews will take place on the 24th April (Fri) for those applicable. 4.Students will receive the results on 28 April. Selection criteria 1.Relevance to students' research and career plans 2.English competency 3.Diversity 4.Completion of other GRM courses This is a compulsory course for Global Resource Management Program. Students already studying in the program will be given priority in the selection. Students wishing to take this course must enroll in "On-site Group Work Introduction" in the same semester. Successful completion of On-site Group Work Introduction is compulsory to undertake the field trip in this course. This course is supported by Daikin Industries Ltd.

Seminar for Advanced Liberal Arts	This seminar presents contemporary issues surrounding our society and explores how to solve them. The seminar consists of a series of lectures by distinguished visiting professors. The guest lecturers are individuals who have been active at the forefront of the world for many years, such as ex-diplomat and officers at international organizations. Through discussions with them, students will acquire the literacy and broad perspective to understand what is happening in the "current" world. The seminar is available for graduate students in any disciplines. A wide range of the topics are covered in the lectures such as international security, nuclear powers, conflicts in the Middle East, and global environmental issues.

Resource Management for Coexistence and Cultural Diversity	A term “resource” is often referred to natural resources, such as water, coal, petroleum, trees, etc. However, as often saying “human resource”, the use of term “resource” is not limited to natural resources. We consider that the applicability of term “resource” spreads in very wide range thus it is a useful concept to connect different study areas. There are many conflicts, from very tiny ones to that of global scale, that prevent people live together peacefully in the world. We can consider that many of those conflicts are caused by the insufficiency or inefficient distribution of “resources”. So, proper management or development of “resources” could help to solve these problems. In this course, students will learn the interpretation of “resource” and how we can translate problems with this concept. Lectures will be delivered by all different professors in each time and explain how the concept of “resource” can be adapted in each field. Lectures will also explain how the proper management of “resources” could contribute to solve problems of their field. The course is delivered with the relayed lecture style in order to cover wide range of topics: both social and natural science. We believes that the concept of “resource” that we define could be applicable very wide range, but due to the limitation of faculty members, the course provides some lectures from electrical engineering, environmental science, informational science, water resource engineering, economics, political science, and public policies. The range of topics covered in this course provides foundation for understanding the global resource problem. As such, this course is highly recommended for students undertaking the GRM program.

Mathematics and Physics as Liberal Arts	The course aims at giving students enough knowledge in physics to understand artificial social infrastructure and natural environment. It puts particular emphasis on electrical energy explaining how electrical power is generated, transported, distributed and utilized by people. Demonstration employing small scale models of electrical generators, fluid machines and motors should enhance students' understanding of energy conversion. Simple mathematical formulations of fundamental physics rules are given, but the course does not necessarily require high mathematical skills and abilities of students.

Infrastructure Design for Human Communities	Infrastructure is the foundation of any kind of activities of human community. It provides protections to citizens and assign social resources at the occasion of natural disasters. Distribution of food, commodities, energy, work force, information, etc., such kinds of resources used in the human society are arranged through infrastructure. Thus, knowledge on how these components of infrastructure are integrated provides a viewpoint indispensable to make further study on resource management for non-engineering major graduate students. The aim of this course is to construct the foundation for non-engineering students to make further study on resource management with the way of thinking similar to engineers. As a basic level course, this course puts more emphasis on how to understand the logics and basic methodologies required for planning and designing of infrastructures, rather than obtaining individual knowledge. Tools that engineers are using for this purpose include mathematics, physics, and statistics. Therefore, basics of these subjects will be also taught in the class. The course puts more emphasis on actually solving problems, rather than just memorizing formulae, for a student to obtain some idea of thinking as an engineer.

Environmental Earth Science as Liberal Arts	This course introduces graduate students, regardless of their background, to scientific perspectives on environmental systems of the earth. It will cover fundamental and important concepts in understanding the processes shaping the Earth and affecting its resources, in particular, the climate, surface, and biological processes. It will take a closer look at functioning and variations of biological resources through field observations in the Kyoto Botanical Garden.

Global Resource Management: Interdisciplinary Approach I -Climate Change-	The global climate is changing and urgent actions are needed to prevent us from the unexpected disasters and harmful impacts. The course will first look at how the climate has been changing and why this has been happening. It will then examine various impacts and measures being taken to address climate change. There is no lecture in Week 1 (Do Week). The lecture starts in Week 2. Each lecture consists of a talk by a lecturer and discussions with students.

Global Resource Management: Interdisciplinary Approach 2 -Transdisciplinary Research Methods-	The global resource crisis is difficult to be solved because a wide range of people are involved in the issue. To address the problem, people with different expertise and backgrounds must collaborate together and work out (or co-create) effective and appropriate solutions. Such collaboration and co-creation is increasingly considered as a key element for problem-solving and innovation and now used widely in governments, companies, and academia. In this course, students will learn about the theory and methods for interdisciplinary and transdisciplinary collaboration. They will gain skills for effective communication with people outside of their own schools or faculties. Students can use their own research as a case study in the exercise to evaluate and improve their own research plan. There is no on-demand video lecture in Do Week. The class starts from the second week of the semester.

Global Resource Management and Sustainable Development Goals1	The Sustainable Development Goals were adopted by the United Nations in 2015, which include 17 goals encompassing natural, social, and economic sectors. This course introduces various topics related to SDGs on natural resources, which are considered as a basis for social and economic goals. It is structured as an interdisciplinary course, with lectures consisting of scientific backgrounds to the problem, the past and current status of the situation, and international/national responses (e.g. policies, legislations, assessments). Students from any countries and disciplines are welcome to the class. Students are expected to explore the SDGs situation in their choice of countries and share the findings with other students in discussions and presentations. This course has no on-demand video lecture in Do Week and starts in the second week of the semester.

Global Resource Management and Sustainable Development Goals2	The Sustainable Development Goals were adopted by the United Nations in 2015, which include 17 goals encompassing natural, social, and economic sectors. This course explores the scientific underpinnings of SDGs with an emphasis on how science and technology contribute to addressing global challenges such as climate change, energy, water, and biodiversity loss. The course consists of a weekly on-line lectures and a field visit. There is no on-demand video lecture in Do Week and the lecture starts in the second week of the semester.

Global Resource Management and International Relations ※休講	This course reviews contending theories of International Relations (IR) by scrutinizing the basic concepts of each theory, its core, and auxiliary propositions, and its underlying assumptions. The course also applies each theory to contemporary history.

Research Methods of Social Sciences ※休講	Theoretical perspectives about the social sciences had for long viewed cultures and civilizations through a vertical divide–as stratified and hierarchical. Culture had been thus marginalized as an important variable for understanding relations between societies. We join the growing intellectual trend by highlighting the relevance of cultural forces for a deeper understanding of the dynamics within societies and the relationships among them.

Global Society in the Modern World	This course will look at the global issues of today (gap between the rich and poor, migration across national borders, religious and cultural coexistence, refugees, human security and others), examine the causes and impact of these issues, and find possible measures. Furthermore, in-depth understanding on key perspectives needed in the study of global issues will be gained. While developing knowledge through actual case studies and insights from practitioners, analysis of corrective measures will be done.

GRM Topics I -Natural Hazards and Disaster Management-	Disasters are social phenomena, and the magnitude of the damage and the process of recovery and reconstruction resulting from them are influenced by the vulnerability of society, pre-disaster measures taken by society and legal systems, and the response during disaster occurrence. This lecture aims to examine the current state of disaster-related legislation in Japan and disaster preparedness and response based on it, using recent examples and issues from disasters.

GRM Topics 2 -Topics in Mathematics for Information and Data Sciences-	Learn how mathematics is used to develop information technology and data science. The lecturer will talk his own experiences in his career, give some puzzles, and solve problems together in the class to understand how mathematics is useful in real life. Mathematical knowledge is not required, but students are suggested to study (say, search Wikipedia) about the topics given in the lectures after each lecture to have deeper understanding. Students are requested to write short report of their study.

Capacity Development for Coexistence and Cooperative Works	This course is to help students to design their own career paths in the globalized world and obtain the necessary skills that might be needed when searching for jobs. The course focuses on the development of students' capacity for coexistence and cooperative work by approaching career development as a lifelong and socially embedded process. In contemporary academic and professional environments, researchers and professionals are required not only to possess advanced expertise but also to work collaboratively across disciplinary, cultural, and institutional boundaries. This course addresses these demands by integrating self-reflection, dialogue, and experiential learning. By framing career design as a process of capacity development for coexistence and cooperative work, the course enables students to connect personal career goals with ethical responsibility, social contribution, and sustainable collaboration. Students will develop practical skills for cooperative work while gaining a deeper understanding of how their career choices shape, and are shaped by, relationships with others in academic and professional contexts This course does not focus on job-hunting skills, rather, it emphasizes career development as the continuous cultivation of cooperative and relational capacities required for research, professional practice, and social engagement.

Introductory Laboratory of Infrastructures	A knowledge and technics about an electrical construction, a plumbing construction, and road construction are useful to engage for some work such as a restoration of infrastructures and a construction of life line at a country with insufficient infrastructure, such as disaster-stricken areas or conflict areas. In the class, learn about the tools and equipment which can be use in individual level, and the basics of electrical construction, by experiment using actual equipment.

時間割表 2026 春学期

GRM Class Table 2026 Spring

SKCMR: Shikokan Common Room, HCCMR: Hochikan Common Room

	Mon	Tue	Wed	Thu	Fri	Sat
1st						
2nd				Mathematics and Pysics as Liberal Arts Romero Real-time Online		Resource Management Onishi & Others Real-time Online
3rd					<Intensive> GRM: Interdisciplinary Approach I	<Intensive> Capacity Development for Coexistence and Cooperative Works
4th		GRM and Sustainable Development Goals I Onishi SKCMR@Imadegawa			Onishi Reeal-time Online	Nishikawa Imadegawa@SKCMR
5th						

<Intensive>

On-site Group Work Introduction	On-site Group Work	GRM Topics 1-Natural Hazards and Disaster Management	GRM Topics 2-Topics in Mathematics for Information	GRM Interdisciplinary Approach I	Capacity Development for Coexistence and Cooperative Works
Onishi	Onishi	Matsukawa	Tokuyama	Onishi	Nishikawa
Imadegawa	Imadegawa	Imadegawa	Imadegawa	Real-time Online	Imadegawa@SKCMR
*Check the syllabus for the schedule	To be announced	August 3,4,5	July 29,30,31	Friday 3-4 *Check the syllabus for the schedule	4/11(Sat) 3-4 4/18(Sat) 3-4 4/25(Sat) 3-4 5/9(Sat) 3-4 5/16(Sat) 3-4 5/23(Sat) 3-4 5/30(Sat)3-4

※最新情報は担当教員からの連絡、DUETやウェブサイトでご確認ください。

時間割表 2026 秋学期

GRM Class Table 2026 Fall

SKCMR: Shikokan Common Room, HCCMR: Hochikan Common Room

	Mon		Tue	Wed	Thu		Fri	
1st								
2nd							GRM and Sustainable Development Goals 2 Onishi Real-time Online	Infrastructure Design for Human Communities Romero Real-time Online
3rd	<Intensive> GRM: Interdisciplinary Approach 2 Onishi SKCMR@Imadegawa	Introductory Laboratory of Infrastructures (※ Every Week) Ikeda HCCMR@Kyotanabe			<Intensive> Seminar for Advanced Liberal Arts Onishi / Naito SKCMR@Imadegawa	*<Intensive> Environmental Earth Science as Liberal Arts Onishi SKCMR@Imadegawa		
4th								
5th								

<Intensive>

GRM: Interdisciiplinary Approach 2	Seminar for Advanced Liberal Arts	Global Society in the Modern World	Environmental Earth Science as Liberal Arts
Onishi	Onishi/Naito	Oyamada	Onishi
Imadegawa	Imadegawa	Imadegawa	Imadegawa
Monday 3-4 *Check the syllabus for the schedule	Thursday 3-4 *Check the syllabus for the schedule	To be announced	*Thursday 3-4 *Check the syllabus for the schedule

※最新情報は担当教員からの連絡、DUETやウェブサイトでご確認ください。
※赤字は２０２６年9月17日（木）に修正しました。

【問合せ・連絡先】

同志社大学 高等研究教育院事務室
今出川校地（致遠館 2F） [TEL] 075-251-3259
京田辺校地 理工学部事務室（理化学館 2F）[TEL] 0774-65-6200
[E-mail] ji-grmld@mail.doshisha.ac.jp
[WEB] https://grm.doshisha.ac.jp