



“Mountains in a Changing World, Grenoble”
June 22 – July 10, 2020
Grenoble, French Alps
Science and Fun in the Alps!

“Mountains in a Changing World, Grenoble” is an innovative **all-English 3-week** summer program at Université Grenoble Alpes (UGA). It is open to a maximum of 20 students from all over the world (last year students came from India, Denmark, Spain, etc., and of course France!).

Students **from all disciplines and levels** are welcome.

Professors, researchers and professionals lead you through this **cross-disciplinary program** and give you keys to analyzing and understanding natural and urban mountain environments with historical, economical and sociological perspectives. The topics covered run **from climate change and earth sciences to architecture, tourism and history**.

Because Grenoble is at the crossroads between 3 mountain ranges and its region comprises some of the highest territories in the **French Alps**, these subjects are key to their urban and land-planning policies. Both in-class and on the field, starting from the beginning you’ll learn how the Alps arose, how the mineral world, plants and living beings in general adapted to changing environments. You’ll study the interrelations between societies and the mountains.

Please note that some courses include **intermediate-level hikes** at high altitudes (2000m) which require a good physical condition.

The program includes **leisure activities** such as a Wine and Cheese, guided tours, the Grenoble short-film festival, free-time with local students.

**Take your hiking boots and a deep breath...
 We’re taking you to the top!**



WEEK 1 The physical environment								
	June 20-21	Monday June 22	Tuesday June 23	Wednesday June 24	Thursday June 25	Friday June 26	Saturday June 27	Sunday June 28
Where		<i>Grenoble</i>	<i>Grenoble</i>	<i>Lautaret Pass Field trip (>2000 altitude)</i>				
09h00-10h30	ARRIVAL AND WELCOME DETAILS TO BE COMMUNICATED	OPENING SESSION General information, program overview and introduction of participants	Exhibition on alpine mountain shelters: from simple shelter to tourism at altitudes <i>Musée Dauphinois</i>	Alpine sentinels research programme: natural sciences perspectives on Mountains	Key notions relating to the changing climate in: alpine ecology, forestry, plant and living beings adaptation to altitude, extinctions and endangered species as opposed to the development of new populations	Geology and Geodynamics of the Alps <i>5h hike (with breaks) to Les Ophiolites du Chenaillet (+800m elevation)</i>	FREE TIME NOT IN THE PROGRAM	
Break			Information and preparation to hikes					
10h45-12h15		Movie from the Mountain and Science film festival + debate	Meeting with the National Ecrins Park Head of the Science Dpt	Science tourism				
Lunch Break		Campus tour	The role of shelters in scientific observation					
13h30-15h00		The physical Alps, notions of Geology	Landscapes observation in the Arts					
Break								
15h15-16h45		<i>Outing to the Bastille fort</i>	<i>Musée de Grenoble</i>					
Evening		Guided visit of Grenoble	FREE TIME	Night at Villar d'Arene mountain shelter: - meet the keepers - meet PhD students	Night in Briançon	FREE TIME <i>Returning to Grenoble with the group is not mandatory</i>		

WEEK 2 Human populations in mountain environments						
	Monday June 29	Tuesday June 30	Wednesday July 1	Thursday July 2	Friday July 3	Saturday July 4
Where	Grenoble	Chartreuse mountains	Vercors mountains and plateau	Grenoble	Grenoble	
09h00-10h30	The Anthropocene Era	The Chartreux monastery museum How to manage a natural park with an economical dimension: challenges, opportunities Reintroduction of the ibex The reappearance of wolves Military forts and the historical border with the Savoy	The Viability of snow conditions and its Challenges for mid-altitude Ski resorts Public Policies in support of Tourism Diversification Local economies, development of touristic resources	Mountains and borders	La Métro, a mountain Metropolis	FREE TIME NOT IN THE PROGRAM
Break						
10h45-12h15	First settlers : cave paintings and other traces					
Lunch Break						
13h30-15h00				Transportation in mountain areas - Synthesis and perspectives	Urbanism Agency Grenoble: role and tools	
Break						
15h15-16h45	The Mountain House and its roles, documentary reserves, mountain-related professions...					
Evening	Group activity	FREE TIME	FREE TIME	Group activity	FREE TIME	

WEEK 3					
Thèmes envisagés - Changes, Where are we now, where are we going					
	Monday July 6	Tuesday July 7	Wednesday July 8	Thursday July 9	Friday July 10
<i>Where</i>	<i>Grenoble</i>	<i>Grenoble</i>	<i>Grenoble</i>	<i>Chamonix and Mont-Blanc</i>	<i>Grenoble</i>
09h00-10h30	Rivers for navigation and for energy (white coal)	IPCC perspectives, predictions and pathways to hope	Dams, effects, suppression	Mont-Blanc, from Chamonix to the Montenvers shelter and ice cave on a rack and pinion train	Atmospheric measures
Break					
10h45-12h15	Pollution of Aquifers: the case of the Himalayas	From crystal growth to avalanche: why and how avalanche hazard is impacted by climate change	Little time left, the last glaciers: a Heritage project "Ice Memory"	Retreat of the glacier	Global warming, measures on mountains
Lunch Break					
13h30-15h00	Influence of current climate on melting glaciers and permafrost	Rock fall in hazardous mountain zones: measuring the impact on the field of political decisions	Evolution de la démographie en montagne et desEvolution of mountain demographics	Witness on mass tourism in mountain areas	
Break					
15h15-16h45		Black carbon deposition to Ice and Snow: Climate and environmental impacts	Climate change and mountain agricultures		FAREWELL
Evening	Group activity	FREE TIME	Group activity	FREE TIME	