

African Meteorological Society

Learning Resources for Weather and Climate Practitioners (Meteorologists)

Language: AR (Arabic), EN (English), FR (French), PO (Portuguese), RU (Russian) or SP (Spanish)

Connectivity: Assessed as H (high), M (medium) or L (low) where H indicates that there a lot of high-resolution videos/ animations whereas L indicates fewer graphics or an offline option

Name/ title	Brief description	URL	Notes	Language	Connectivity
All topics					
COMET/ MetEd	MetEd is a free collection of hundreds of training resources covering all aspects of meteorology and is the most comprehensive source of training resources for meteorologists. Resources can be selected by topic and include individual lessons and courses. There is a search function to help find the most appropriate resources.	https://www.meted.ucar.edu/education_training/	Registration/ enrolment is required for access to the resources.	EN, FR, PO, SP	L-H

MIT Open Courseware	A range of resources, including lecture notes, lab notes, assignments designed for MIT students but available to all.	https://ocw.mit.edu/search/?q=meteorology	Click on the topic of interest and then navigate to the required resources (e.g. lecture notes) using the panel on the left. Open access. The majority of resources can be downloaded for use offline.	EN	L
WMO Education and Training Programme Moodle Site	A variety of online resources including materials from courses previously held at WMO training centres.	https://etrp.wmo.int/	Registration/ enrolment is required for access to the resources. An 'Enrolment key' may be required for access. Resources can be downloaded for use offline.	EN, FR, SP, RU	M
Class Central	A range of courses relating to climate change from different providers. Website is searchable and displays 'related courses' to signpost other resources which may be of interest.	https://www.classcentral.com/subject/climate-change?page=3	Registration/ enrolment is required for access to the resources. Some of the resources can be downloaded for use offline.	EN, FR, PO, SP	L-H
Atmosphere and fundamentals of meteorology					

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<p>WMO Education and Training Programme Moodle Site</p>	<p>A variety of online resources including materials from courses previously held at WMO training centres.</p>	<p>https://etrp.wmo.int/</p>	<p>Registration/ enrolment is required for access to the resources. An 'Enrolment key' may be required for access.</p> <p>Resources can be downloaded for use offline.</p>	<p>EN, FR, SP, RU</p>	<p>M</p>

MIT Open Courseware	A range of resources, including lecture notes, lab notes, assignments designed for MIT students but available to all.	https://ocw.mit.edu/search/?q=meteorology	Click on the topic of interest and then navigate to the required resources (e.g. lecture notes) using the panel on the left. Open access. The majority of resources can be downloaded for use offline.	EN	L
Tropical Synoptic Meteorology Curriculum Package	A university-level, online meteorology course package which includes an instructor's guide and model syllabus with learning objectives, free online instructional resources, case examples, questions for review or discussion, student assignments, learning activities, and guidance for online course delivery.	https://www.meted.ucar.edu/training_module.php?id=1082	Registration/ enrolment is required for access to the resources.	EN	
NCAR Introduction to Tropical Meteorology	This online textbook is a comprehensive resource for Tropical Meteorology. It is intended for use by undergraduate and early graduate students in Tropical Meteorology courses, forecasters, and others interested in the impacts of tropical weather and climate.	https://www.meted.ucar.edu/tropical/textbook_2nd_edition/index.htm	Open access. The book can be downloaded for use offline (520.9MB) – to launch the content, open the file 'index.htm'.	EN	L

Meteorology of Tropical West Africa: The Forecasters' Handbook	A set of powerpoint slides each covering an aspect of weather forecasting in West Africa taken directly from the Forecasters' Handbook. Each diagram/ image includes a short note/ legend but full explanations are not provided – these can be found in the textbook.	https://africanswift.org/resources/handbooks/west-africa/	Open access. The book itself is available for purchase in print or digital format in English and French.	EN	L
Climate and climate change					
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WMO Education and Training Programme Moodle Site	A variety of online resources including materials from courses previously held at WMO training centres.	https://etrp.wmo.int/	Registration/ enrolment is required for access to the resources. An 'Enrolment key' may be required for access. Resources can be downloaded for use offline.	EN, FR, SP, RU	M

<p>Class Central</p>	<p>A range of courses relating to climate change from different providers.</p> <p>Website is searchable and also has a section 'related courses' to signpost other resources which may be of interest.</p> <p>Examples of relevant lessons include:</p>	<p>https://www.classcentral.com/subject/climate-change?page=3</p>	<p>Registration/ enrolment is required for access to the resources.</p> <p>Some of the resources can be downloaded for use offline.</p>	<p>EN, FR, PO, SP</p>	<p>L-H</p>
	<p>Example: OpenLearn from the Open University: Course on Climate Change</p> <p>This free course explores the basic science that underpins climate change and global warming.</p>	<p>https://www.open.edu/openlearn/nature-environment/climate-change/content-section-0?active-tab=description-tab</p>	<p>Open access – registration is optional but once the course is completed, a 'statement of participation' can be downloaded.</p> <p>Resources can be downloaded for use offline.</p>	<p>EN</p>	<p>L</p>

	<p>Example: Swayam: Introduction to Climate Change</p> <p>The course covers fundamentals of climate change, the past and present climate, climate change indicators, international conventions on climate change and National Action Plan on Climate change. The objective of this course is to explain the science of climate change, and to explain the conventions on climate change.</p>	<p>https://www.classcentral.com/course/swayam-introduction-to-climate-change-58478</p>	<p>Registration/ enrolment is required for access to the resources.</p>	<p>EN</p>	<p>M</p>
	<p>Example: Climate change and Indigenous People and local communities</p> <p>This course considers the debates around climate change impacts on indigenous peoples and local communities (IPLC), the different impacts of climate change on IPLC, and the different strategies to incorporate indigenous peoples and local communities in climate change research and policy.</p>	<p>https://www.coursera.org/learn/climate-change-indigenous-communities?irclid=TKVz7s2sdxylRrxwUx0Mo3EHUkDUfCQpnTpbQs0&irgwc=1&utm_medium=partners&utm_source=impact&utm_campaign=259799&utm_content=b2c</p>	<p>Registration/ enrolment is required for access to the resources.</p>	<p>EN</p>	<p>M</p>

	<p>Example: Planning for Climate Change in African Cities</p> <p>Provides the foundation for understanding cities' exposure and sensitivity to climate change, and how cities can manage these impacts in the face of growing uncertainty.</p>	https://www.classcentral.com/course/planning-climate-change-african-cities-9146	Registration/ enrolment is required for access to the resources.	EN	M-H
Observations, including remote sensing					
COMET/ MetEd	<p>MetEd is a free collection of hundreds of training resources covering all aspects of meteorology and is the most comprehensive source of training resources for meteorologists.</p> <p>Resources can be selected by topic and include individual lessons and courses.</p> <p>There is a search function to help find the most appropriate resources.</p>	https://www.meted.ucar.edu/education_training/	Registration/ enrolment is required for access to the resources.	EN, FR, PO, SP	L-H
	<p>Example: Basic Satellite Imagery Interpretation</p>	https://www.meted.ucar.edu/education_training/lesson/1316			

WMO Education and Training Programme Moodle Site	A variety of online resources including materials from courses previously held at WMO training centres.	https://etrp.wmo.int/	Registration/ enrolment is required for access to the resources. An 'Enrolment key' may be required for access. Resources can be downloaded for use offline.	EN, FR, SP, RU	M
ASMET (African Satellite Meteorology Education and Training)	Free, self-paced online learning resources on the use of meteorological satellite images and products, including material on the transition to Meteosat Third Generation satellite.	https://asmet.africa/2022/	Registration/ enrolment is required for access to the resources.	EN, FR, SP	M
EUMeTrain	International training project sponsored by EUMETSAT to support and increase the use of meteorological satellite data	http://eumetrain.org/resources.html		EN	H
Massive Open Online Courses (MOOC) from Copernicus	Imagery and case studies of weather phenomena and environmental events observed by EUMETSAT's fleet of weather satellites	https://www.eumetsat.int/case-studies		EN	L
EUMETSAT Training Zone	The EUMETSAT training activities support users in the member states and among the World Meteorological Organization (WMO) members in the application of EUMETSAT data, products, and services, including Copernicus data provided by EUMETSAT.	https://training.eumetsat.int	A small number of past courses are now open for access (guest access) but registration is required to access more resources.	EN	L-H

NASA Applied Remote Sensing Training Program	A series of courses delivered by webinar, with recordings of past lectures (on YouTube) also available along with presentations.	https://appliedsciences.nasa.gov/what-we-do/capacity-building/arset	Open access. Resources can be downloaded for use offline.	EN	L-H
NCAR Introduction to Tropical Meteorology	This online textbook is a comprehensive resource for Tropical Meteorology. It is intended for use by undergraduate and early graduate students in Tropical Meteorology courses, forecasters, and others interested in the impacts of tropical weather and climate.	https://www.meted.ucar.edu/tropical/textbook_2nd_edition/index.htm	Open access. The book can be downloaded for use offline (520.9MB) – to launch the content, open the file ‘index.htm’.	EN	L
Meteorology of Tropical West Africa: The Forecasters’ Handbook	A set of powerpoint slides each covering an aspect of weather forecasting in West Africa taken directly from the Forecasters’ Handbook. Each diagram/image includes a short note/ legend but full explanations are not provided – these can be found in the textbook.	https://africanswift.org/resources/handbooks/west-africa/	Open access. The book itself is available for purchase in print or digital format in English and French.	EN	L

(Numerical Weather Prediction) Modelling and related topics

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	Example: NWP Essentials	https://www.meted.ucar.edu/education_training/course/46			
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ECMWF eLearning	Material that deals with Numerical Weather Prediction and ECMWF's software and products	https://www.ecmwf.int/en/learning/elearning-online-resources	Registration/ enrolment is required for access to the resources.	EN	H
ECMWF Lecture Notes	Lecture Notes that support ECMWF's advanced training courses in Numerical Weather Prediction	https://www.ecmwf.int/en/learning/education-material/lecture-notes		EN	L

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Observing, nowcasting and forecasting African weather systems					
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	Example: Using Climatology in Forecasting Convection in West and Central Africa	https://www.meted.ucar.edu/education_training/lesson/1266		EN	
	Example: Forecasting Heavy Rains and Landslides in Eastern Africa	https://www.meted.ucar.edu/education_training/lesson/1203		EN, FR	

	Example: Satellite-Derived Climatology Products for Monitoring Convection Over West and Central Africa	https://www.meted.ucar.edu/education_training/lesson/1205		EN, FR	
	Example: Impact-Based Forecasting: Identifying Hazards and Constructing Impacts Tables	https://www.meted.ucar.edu/education_training/lesson/10071		EN, SP	
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ASMET (African Satellite Meteorology Education and Training)	Free, self-paced online learning resources that teach African forecasters how to enhance their forecasts by making better use of meteorological satellite images and products.	https://asmet.africa/2022/	Registration/ enrolment is required for access to the resources.	EN, FR, SP	M
African Climate/ Climatology/ Climate change in Africa					
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	Example: Using Climatology in Forecasting Convection in West and Central Africa	https://www.meted.ucar.edu/education_training/lesson/1266		EN	

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Hydrology/ hydrometeorology/ flooding/ water resource management					
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	Example: ASMET: Flooding in West Africa	https://www.meted.ucar.edu/education_training/lesson/922		EN, FR	
	Example: Flash Flood Processes: International Edition	https://www.meted.ucar.edu/education_training/lesson/806		EN, FR, SP	

Flash Flood Guidance System Training	FFGS Training presents a collection of training resources selected by the FFGS Team to support those organising training as well as those looking for opportunities to learn about flash floods. The selection of resources is organised by topics related to the subject of Flash Floods	https://etrp.wmo.int/course/view.php?id=196	Includes links to other resources e.g. MetED.	EN, FR, AR, O	H
Agrometeorology - Impacts of weather & climate on African agriculture (including insurance)					
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Urban - Impacts of weather & climate on African cities					
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Planning for Climate Change in African Cities	Provides the foundation for understanding cities' exposure and sensitivity to climate change, and how cities can manage these impacts in the face of growing uncertainty.	https://www.classcentral.com/course/planning-climate-change-african-cities-9146	Registration/ enrolment is required for access to the resources.	EN	M-H
Sector based meteorology e.g. aviation, energy					
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	Meteorological Observations for Aviation Forecasting	https://www.meted.ucar.edu/education_training/lesson/10043			
	ASMET 7: Convective Weather and Aviation in West and Central Africa	https://www.meted.ucar.edu/education_training/lesson/1079			
	ASMET 7: Detecting Clear Air Turbulence Over Southern Africa	https://www.meted.ucar.edu/education_training/lesson/1078			
	Nowcasting for Aviation in Africa	https://www.meted.ucar.edu/education_training/lesson/1020			
Meteorology notes for aviators	Summary lecture notes from a short course on aviation meteorology in Africa	https://www.studocu.com/row/document/east-african-school-of-aviation/aviation-meteorology/meteorology-notes/6784581	Open access. Resources can be downloaded for use offline.	EN	L