

MASTERS PROGRAMME: MSC/Ma Climatology

AGE 810	Origin and Development of Climatology
Course content (including topics)	Review of climatic elements, genetic and generic climate classification schemes and problems and weather-producing systems in the tropical. Climatic variability and climatic change. Aridity, precipitation and erosivity. Climate, water resources and flood hazards in tropical African environments. Negative precipitation anomaly in East Africa. Climate-crop relations. Weather hazards and crop pests and diseases in agricultural development. Climate and livestock development. General impact of climatic elements on the overall agricultural development.
AGE 811	Applied Tropical Climatology of Africa
Course content (including topics)	Climate-crop relations, crop-water requirement, effective rainfall, optimum temperatures, light, wind, radiation and evapotranspiration; Climatic hazards in agriculture, floods, droughts, frost, hurricanes; Climate and crop pests and diseases in agricultural development; Climate and livestock development; pest and diseases, ticks, tsetse flies; Climate, transport and communication; Climate and economic development (trade, commerce); Urban and building climatology; Climate and human health
AGE 812	Methods and Techniques of Climatology
Course content (including topics)	Weather Observation and Instrumentation: Historical and current weather data, Weather stations, Reception of weather broadcasts, The international meteorological observing network, The problems of gaps in observing network; Climatological instrumentation: Climatic Elements and their Observation, Radiation, Temperature and humidity, Precipitation, Wind speed and direction, Evaporation, Atmospheric pressure; Interpreting Observations: Analysis of meteorological time-series, Statistical analysis of scalar quantities, Statistical analysis of vector quantities, Statistical predictions in climatology, Cartographic interpretations of climatic data; Climatic Indices and Models: Thermal efficiency index (TE) and precipitation effectiveness index (PE), Experimental models of phenomena of weather and climate, Mathematical models of phenomena of weather and climate, Meteorological and climatic data sources
AGE 813	Climate change and sustainability
Course content (including topics)	Man-climate interaction and environmental determinism and possibilism: Microclimate of humans, Man-made climate, Environmental determinism and possibilism, Anthropogenic influence on climate modification; Impact of climate on rural livelihoods: Climate and agriculture, Climate and water

	resources, Climate and livestock, Impact of climate on urban livelihoods, Climate and commerce and trade, Building climatology; Urban modification of climate: Climate and transport, Climate and industrial development, Climate and pollution; Climate and energy, Climate and marketing of goods; Impact of technology on the atmosphere, Green house gases and global warming, The ozone controversy Climate in aviation; Role of atmosphere in communication and satellite technology; Climate in arid and semi-arid environments, Climate and aridity: Desertization process, Desertification process
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