# LCLIM2280

*2016-2017*

# Forecasting techniques

| 8.0 credits | | 2q |
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| Teacher(s) : | Crucifix Michel (coordinator) ; |
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| Language : | Anglais |
| Place of the course | Louvain-la-Neuve |

| Prerequisites : | & t;!--<br>/* Font Definitions */<br>@font-face<br>{font-family:"Courier New";<br>panose-1:2 7 3 9 2 2 5 2 4 4;<br>mso-font-charset:0;<br>mso-generic-font-family:auto;<br>mso-font-pitch:variable;<br>mso-font-signature:-536859905 -1073711037 9 0 511 0;}<br>@font-face<br>{font-family:Wingdings;<br>panose-1:5 0 0 0 0 0 0 0 0 0;<br>mso-font-charset:2;<br>mso-generic-font-family:auto;<br>mso-font-pitch:variable;<br>mso-font-signature:0 268435456 0 0 -2147483648 0;}<br>@font-face<br>{font-family:"Cambria Math";<br>panose-1:2 4 5 3 5 4 6 3 2 4;<br>mso-font-charset:0;<br>mso-generic-font-family:auto;<br>mso-font-pitch:variable;<br>mso-font-signature:-536870145 1107305727 0 0 415 0;}<br>/* Style Definitions */<br>p.MsoNormal, li.MsoNormal, div.MsoNormal<br>{mso-style-unhide:no;<br>mso-style-qformat:yes;<br>mso-style-parent:"";<br>margin:0cm;<br>margin-bottom:.0001pt;<br>mso-pagination:widow-orphan;<br>font-size:12.0pt;<br>font-family:"Times New Roman";<br>mso-fareast-font-family:"Times New Roman";<br>mso-ansi-language:EN-US;<br>mso-fareast-language:EN-US;}<br>.MsoChpDefault<br>{mso-style-type:export-only;<br>mso-default-props:yes;<br>font-size:10.0pt;<br>mso-ansi-font-size:10.0pt;<br>mso-bidi-font-size:10.0pt;<br>mso-ansi-language:EN-US;<br>mso-fareast-language:EN-US;}<br>@page WordSection1<br>{size:612.0pt 792.0pt;<br>margin:70.85pt 70.85pt 70.85pt 70.85pt;<br>mso-header-margin:36.0pt;<br>mso-footer-margin:36.0pt;<br>mso-paper-source:0;}<br>div.WordSection1<br>{page:WordSection1;}<br>/* List Definitions */<br>@list l0<br>{mso-list-id:1032195772;<br>mso-list-type:hybrid;<br>mso-list-template-ids:-92528180  -1457477544  67698691  67698693  67698689  67698691  67698693  67698689  67698691  67698693;}<br>@list l0:level1<br>{mso-level-number-format:bullet;<br>mso-level-text:-;<br>mso-level-tab-stop:66.0pt;<br>mso-level-number-position:left;<br>margin-left:66.0pt;<br>text-indent:-18.0pt;<br>font-family:"Times New Roman";<br>mso-fareast-font-family:"Times New Roman";}<br>@list l0:level2<br>{mso-level-number-format:bullet;<br>mso-level-text:o;<br>mso-level-tab-stop:102.0pt;<br>mso-level-number-position:left;<br>margin-left:102.0pt;<br>text-indent:-18.0pt;<br>font-family:"Courier New";}<br>@list l0:level3<br>{mso-level-number-format:bullet;<br>mso-level-text:';<br>mso-level-tab-stop:138.0pt;<br>mso-level-number-position:left; |

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| Main themes : | -- |
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| Aims : | Firstly, this module is dedicated to the interpretation and the analysis of surface and upper meteorological maps.<br>Secondly, the goal of this module is to acquire several valuable techniques and working methods for the forecasting of the main parameters and/or weather phenomena like wind and temperature, the formation of fog and the forecasting of clouds and precipitation.<br>At the end of the module, the students should be able to :Identify and explain the different elements found on a surface map<br>Perform an analysis of the atmosphere on the main standard levels ; recognize the main atmospheric patterns and follow their developments<br>Understand and apply correctly the forecasting techniques in exercises and case studies : choose and apply the appropriate methods for forecasting temperature (Tmin,Tmax , Tgrass,'), wind (speed, direction, gusts,'), clouds and precipitation (type, amount,') and the formation and formation/dissipation of fog<br>*The contribution of this Teaching Unit to the development and command of the skills and learning outcomes of the programme(s) can be accessed at the end of this sheet, in the section entitled "Programmes/courses offering this Teaching Unit".* |
| Evaluation methods : | A presentation of a case study (weight is 40% of the total score).<br>A written exam (weight is 60% of the total score) will consist of two parts :<br>-  theory (30%)<br>- practice ' open book (30%) |
| Content : | a.    Revision basic meteorology<br>·     Wind, jet stream, thermodynamics, clouds, air masses, frontal systems, pressure centres,<br>b.    Analysis meteorological maps<br>·     Analysis of surface maps, upper maps (500 hPa, 700 hPa, 850 hPa, 925 hPa, ') and additional maps (temperature, humidity, thetaw, ')<br>c.    Wind & mp; temperature forecasting<br>·     Wind forecasting (direction, speed, gusts, ')<br>·     Heating and cooling in the atmosphere<br>·     Temperature forecasting (maximum temperature, minimum temperature, ')<br>·     Exercises<br>d.    Clouds & mp; precipitation forecasting<br>·     Profile of clouds<br>·     Stratiform clouds<br>·     Convective clouds<br>·      Exercise<br>e. Fog forecasting<br>·    Fog identification and forecasting techniques<br>·    Fog identification on satellite images<br>·    Exercises<br>f.    Practice<br>·    Meteorological briefings<br>·    Case studies |
| Faculty or entity in charge: | GEOG |

| Programmes / formations proposant cette unité d'enseignement (UE) | | | | |
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| Intitulé du programme | Sigle | Credits | Prerequis | Acquis d'apprentissage |
| Master [120] in Geography : Climatology | CLIM2M | 8 | - | 🔍 |