EXPANDED COURSE DESCRIPTION
EARTH, SPACE SCIENCE AND ENGINEERING
Lassonde School of Engineering
Earth and Space Science and Engineering
LE / ESSE 4120 3.0 SECTION A
CLOUD PHYSICS AND RADAR METEOROLOGY
FALL 2018 / WINTER 2019

Last Modified Date: 08/09/2018

COURSE CALENDAR DESCRIPTION

INSTRUCTOR(S)

<table>
<thead>
<tr>
<th>Name</th>
<th>Section / Format / Term</th>
<th>Contact Email</th>
<th>Contact Phone</th>
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<tbody>
<tr>
<td>Gordon, Mark D</td>
<td>Sec. A / LECT / F</td>
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TOPICS AND CONCEPTS

For more information on this course, please visit the following website: https://learn.lassonde.yorku.ca/

Topics for this course include:
1. Thermodynamics of Dry Air
2. Water Vapour and its Thermodynamic Effects
3. Parcel Buoyancy and Atmospheric Stability
4. Mixing and Convection
5. Formation of Cloud Droplets
6. Droplet Growth by Condensation
7. Initiation of Rain in Nonfreezing Clouds
8. Formation and Growth of Ice
9. Principals of Radar
10. Radar and Precipitation
11. Doppler and Polarized Radar

LIST OF LEARNING OUTCOMES AND EXAMPLES OF

By the end of the course, students should be able to:
1. Use thermodynamic variables to describe the atmosphere and express the relationship between these variables.
2. Analyze thermodynamic processes of the atmosphere though fundamental equations and graphical tools (such as tephigrams).
3. Evaluate cloud droplet and crystal growth and evaporation using fundamental knowledge of micro-physical processes
4. Critique the principals of Radar use relating to precipitation.
5. Apply differential equations to relate radar signals to distributions of precipitators.
ADDITIONAL INFORMATION


References:

ACADEMIC INTEGRITY LINKS
- Senate Policy on Academic Honesty - http://secretariat-policies.info.yorku.ca/policies/academic-honesty-senate-policy-on/
- Academic Integrity - http://lassonde.yorku.ca/academic-integrity

STUDENT LINKS
- Student Rights and Responsibilities - http://oscr.students.uit.yorku.ca/student-conduct
- Religious Observance - https://w2prod.sis.yorku.ca/Apps/WebObjects/cdm.woa/wa/regobs
- Counselling and Disability Services - http://cds.info.yorku.ca/
- York University’s Policies on Gender/LGBTQ*/Positive Space - http://rights.info.yorku.ca/lgbtq/

LAND ACKNOWLEDGEMENT
- We acknowledge our presence on the traditional territory of many Indigenous Nations. The area known as Tkaronto has been care taken by the Anishinabek Nation, the Haudenosaunee Confederacy, the Huron-Wendat, and the Métis. It is now home to many Indigenous Peoples. We acknowledge the current treaty holders, the Mississaugas of the New Credit First Nation. This territory is subject of the Dish With One Spoon Wampum Belt Covenant, an agreement to peaceably share and care for the Great Lakes region.
- The Indigenous Framework for York University: A Guide to Action can be found here: http://indigenous.info.yorku.ca/
- Meaning of a land acknowledgement: http://healthydebate.ca/opinions/indigenous-land-acknowledgements

Many courses utilize Moodle, York University's course website system. If your course is using Moodle, click here to access it.

Moodle @ York University