

## WMO OMM

WEATHER CLIMATE WATER  
TEMPS CLIMAT EAU



World Meteorological Organization  
Organisation météorologique mondiale  
Organización Meteorológica Mundial  
Всемирная метеорологическая организация  
المنظمة العالمية للأرصاد الجوية  
世界气象组织

### Secrétariat

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Notre réf.: 21033/2017/ETR/CRS-1017

6 juin 2017

Annexes: 3 (disponibles en anglais seulement)

Objet: Cours sur la météorologie urbaine et les services environnementaux et climatologiques (campus de l'Université de Reading Malaysia, Puteri Johor, Malaisie, 28 août – 8 septembre 2017)

Suite à donner: Pour information et mesures à prendre, le cas échéant

Madame, Monsieur,

J'ai le plaisir de vous informer que l'Université de Reading organisera, dans son nouveau campus de l'Université de Reading Malaysia à Puteri Johor, un cours sur la météorologie urbaine et les services environnementaux et climatologiques, du 28 août au 8 septembre 2017.

Le cours, qui se déroulera en anglais, a pour objectif de présenter de façon générale l'influence des zones urbaines sur les conditions atmosphériques, d'évaluer les répercussions des surfaces urbaines sur les observations météorologiques, de recenser les services climatologiques qui présentent un intérêt pour les zones urbaines et d'envisager les façons de fournir des services météorologiques, climatologiques et environnementaux.

Les participants devront déjà être familiarisés avec les notions de base de la micrométéorologie, de la météorologie de la couche limite, des observations en surface et des processus de pollution atmosphérique.

Vous trouverez ci-joint des informations sur le cours (annexe 1), ainsi qu'un formulaire d'inscription (annexe 2).

Les gouvernements sont priés d'envisager de prendre en charge une partie des frais de participation de leurs candidats respectifs, notamment le coût des billets d'avion. Si toutefois cela n'était pas possible, il convient d'indiquer sur le formulaire d'inscription ci-joint qu'une assistance financière est requise. Ce formulaire doit être approuvé par les représentants permanents auprès de l'OMM et renvoyé au plus tard le **5 juillet 2017**. Veuillez noter que l'OMM compte fournir une assistance financière à un maximum de dix (10) participants, qui seront sélectionnés selon les critères de l'OMM pour l'attribution des bourses d'études (voir l'annexe 3).

Veuillez agréer, Madame, Monsieur, l'expression de ma considération distinguée.

(E. Manaenkova)  
pour le Secrétaire général

Aux: Représentants permanents des Membres du Conseil régional II  
Représentants permanents des Membres du Conseil régional V

cc: Conseillers en hydrologie auprès des représentants permanents

Ref.: 21033/2017-111CP

## Course Announcement

### Title of Course

*Urban Meteorology, Environment and Climate Services*

### Dates and Location of Course

*2 weeks, 28<sup>th</sup> August – 8<sup>th</sup> September 2017 at University of Reading Malaysia campus*

### Course Description

Objectives or Aims of the course

- 1. Introduce basic principles of how urban areas impact the atmosphere*
- 2. Consider the impact of the urban surface on meteorological observations*
- 3. Identify climate services that are of interest in the urban area*
- 4. Consider how environment, climate and weather services can be delivered*

What learning needs will this course fill?

- 1. Urban meteorology*
- 2. Urban environment (air quality)*
- 3. Climate services*

Why should participants attend this course?

- 1. To learn about urban meteorology*
- 2. To develop or deliver climate services to urban areas*
- 3. To learn about land surface – atmosphere processes*
- 4. To undertake observations in heterogeneous environments*
- 5. To learn about land surface modelling*
- 6. To learn about Integrated Urban hydrometeorology, climate and environment services*

Why should institutions send their staff members?

- 1. National meteorological services, groups interacting with (government) agencies for climate planning and air quality forecasting, disaster risk reduction, daily operations in urban areas*
- 2. NMHS staff concerned with improving NWP and air pollution forecasting in urban areas*
- 3. Other agencies that have a need for meteorological and climatological information in urban areas*
- 4. Researchers/consultants working with NHMS and/or agencies that use their services*

### Expected Learning Outcomes

Intended outcomes in terms of background knowledge.

- 1. Improved understanding of micrometeorology and boundary layer meteorology*
- 2. Improved understanding of urban meteorology*
- 3. Improved understanding of the influence of urban environment measurements*
- 4. Improved understanding of the key aspects of urban land surface modelling*
- 5. Improved understanding of the key aspects of urban air pollution modelling*
- 6. Improved understanding of how and what urban climate services could be delivered*
- 7. Knowledge about Integrated Urban hydrometeorology, climate and environment services*

Intended outcomes in terms of skills.

- 1. Critique siting of instrumentation in urban areas for different applications*
- 2. Undertake land surface modelling of urban areas*

3. *Use tools to deliver some climate services in a city*
4. *Consider how to improve weather, environment and climate services and support in a city.*

### Target Audience and Qualifications

What prerequisite knowledge should the participants have?

1. *Basic understanding of micrometeorology*
2. *Basic understanding of boundary layer meteorology*
3. *Basic understanding of surface based observations*
4. *Basic understanding of atmospheric pollution processes*

What job experiences?

*Wide range of backgrounds would be helpful to the course.*

What job responsibilities will provide the opportunities for participants to apply what they learn?

1. *Delivering climate services*
2. *Urban meteorologists*
3. *Improving observational network*
4. *Public Outreach*
5. *Interfacing with agencies responsible for disaster preparedness, health, air quality, planning etc.*

### Course Content

Topics to be treated, and activities to be conducted.

<i>Day</i>	
1.0	<i>Introduction to micrometeorology</i>
1.1	<i>Key features of the urban environment</i>
1.2	<i>Urban heat island – different types</i>
1.3	<i>Presentation of urban services</i>
2.0	<i>Urban influence on wind</i>
2.1	<i>Characterising the urban surface</i>
2.2	<i>Evaporation and moisture</i>
3.1	<i>Air pollution, radiation and aerosols</i>
3.2	<i>Site visit to weather station</i>
3.3	<i>Surface energy balance</i>
4.0	<i>Precipitation</i>
4.1	<i>Urban water balance</i>
4.2	<i>Urban land surface models</i>
5.0	<i>Introduction to SUEWS</i>
5.1	<i>Characterising the surface for land surface model</i>
5.2	<i>Boundary layer growth</i>
6.0	<i>Thermal stress and human comfort</i>
6.1	<i>SOLWEIG</i>
7.0	<i>Climate services</i>
7.1	<i>Urban needs for different users</i>
7.2	<i>Urban needs and priorities in your area</i>
7.3	<i>Identify urban services to be developed/improved</i>
8.0	<i>Designing an urban integrated service I</i>
9.0	<i>Designing an urban integrated service II</i>
10.0	<i>Identifying where improvements could be made in observations, modelling and data analysis</i>
10.1	<i>Integrated Urban hydrometeorology, climate and environment services: road map and goals</i>

## **Pre-course Content and Activities**

Suggested reading will be provided for students to prepare for the course. This will include online computer tutorials to ensure students have the necessary training to complete the practicals.

## **Post-course Activities**

Participants would become part of the urban integrated service development and user community. Participants will be expected to share what they learn by working out how to deliver and/or improve the urban weather, climate and environment-related services.

## **Course Format**

*Lectures, practical exercises, site visits, projects*

## **Student Assessment**

Students will be assessed on:

1. *Completion of project*
2. *Critique and suggested improvements*

The course certificate will be dependent upon successful assessment.

## **Instructors and qualifications**

*Professor Sue Grimmond University of Reading*

*Professor Baklanov, WMO (environment aspects and WMO concept of Integrated Urban hydrometeorology, climate and environment services)*

## **Language Used**

*English*

## **Application and Selection Process**

1. *Support from employing agency*
2. *Statement of why course is of interest/relevant (~200 words)*
3. *CV demonstrating relevant background (e.g. courses, programming, working with institutions)*

## **Costs**

Costs to be covered by participant organizations or external funding sources. The course will cost £450 plus flights and evening meals.

## **Deadline for Application**

At least 6 weeks prior to the start of the course

## Urban Meteorology, Environment and Climate Services

28 August – 8 September 2017

University of Reading Malaysia campus, Puteri Johor, Malaysia

### PARTICIPANT NOMINATION FORM

**Note:** Please send the completed form directly to the University of Reading coordinator (h.f.dacre@reading.ac.uk) as soon as possible and in any case **no later than 15 July 2017**.

#### I. Personal Data

1. Surname (Family name) \_\_\_\_\_
2. First (Given) Name \_\_\_\_\_
3. Gender
4. Date of Birth
5. Nationality
6. Dietary instructions, if any
  
7. Address

Telephone  
E-mail Address

8. Contact person in emergency

Name  
Address

Telephone  
E-mail Address

9. Statement of present work

Name of institution  
Position held  
A brief description of duties

15. Recent employment history

Date		Institution	Position and Duties
From	To		

16. Educational and/or professional qualification

Date	Major Subjects	Board/University	Degree/Diploma

17. Language Proficiency

Mother Tongue

English Proficiency (Please tick):

- Reading: a. excellent b. good c. fair d. poor  
Listening: a. excellent b. good c. fair d. poor  
Speaking: a. excellent b. good c. fair d. poor  
Writing: a. excellent b. good c. fair d. poor

18. State why you wish to attend the course and indicate the practical use of the course to your work in the future.

**II. Insurance**

I fully understand that the seminar organizer does not take any responsibility for such risks as loss of life, accidents, illness, loss of property etc.

### III. Personal Statement

I hereby declare that the information given above is true, correct, and complete. I shall bear the responsibility for the above information.

Date

Signature of the Applicant

### IV. Local Support Application

Please indicate whether local support is required in the form of the accommodation and meals during the training period.

Applying for local support:

yes     no

If you are unable to obtain local support from the organizer, will you and your government pay for the above expenses?

yes     no

If you require travel support, to whom do you intend to apply?

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### V. Endorsement of the Nominator

1. Name of Organization

2. Name and Signature of The Permanent Representative with WMO,

Name  
Signature  
Date

**Annex to draft Decision 10.1/4 (EC-69)**

**CRITERIA ON AWARD OF FELLOWSHIPS AND TRAINING SPONSORSHIPS**

**1. Criteria for the award of WMO fellowships**

1.1 The aim of the WMO Fellowship Programme is to support the education and training of qualified and suitable candidates, particularly from least developed and developing countries and Small Island Developing States.

1.2 WMO may award both short-term (more than one month and less than six months) and long-term (6 months or longer) fellowships, based on recommendations of the Education and Training Committee (ETCOM) and in alignment with the priorities of the Education and Training Programme.

1.3 To be considered by the ETCOM for a fellowship, candidates must:

- (a) Complete a Fellowship Nomination Form, which must be certified by the Permanent Representative of the recipient Member with WMO;
- (b) Meet the entry requirements for the proposed course of study, and obtain a conditional offer/admission for the course;
- (c) Be proficient in, or capable of learning in, the language of study;
- (d) Be of sound health as confirmed by their completed medical certificate;
- (e) Only apply for courses of study directly applicable to WMO Programme areas.

1.4 In awarding a fellowship, preference will be given to candidates who:

- (a) Come from the NMHSs of least developed countries as well as developing countries, countries with economies in transition, small island developing states, and countries more vulnerable to natural disasters;
- (b) Are supported by cost-sharing;
- (c) Apply for courses at RTCs or other training institutions in their Region;
- (d) Are expected to work and make a long-term contribution in the NMHS of their country in a suitable post on completion of the fellowship;
- (e) Have not been awarded a long-term WMO fellowship within the previous four years;
- (f) Have not recently benefited from a WMO fellowship.

1.5 In awarding a fellowship, account will be taken of:

- (a) The need for regional proportional balance;
- (b) The need to practice equal opportunity policies (Resolution 33 (Cg-XIV) – Equal opportunities for the participation of women in meteorology and hydrology);



- (c) The Permanent Representative from the candidates' country has provided WMO with the required report from any previous fellowship.

## **2. Criteria for the award of WMO short-term training opportunities**

2.1 Permanent Representative (PR): In making nominations for short-term training courses, the PR should:

- (a) Annually set staff education and training requirements based on the Member's plans and requirements;
- (b) Make nominations only for high priority training needs;
- (c) Exercise discretion in requesting financial support, seeking internal funding first;
- (d) Follow procedures for making nominations and requests for support;
- (e) Meet the deadlines for course applications.

2.2 Nominees: In applying for short-term courses, the nominees should:

- (a) Review the course qualification requirements;
- (b) Be prepared with a serious intent to learn;
- (c) Be timely in completing all steps in the process.

2.3 Supervisors: In having staff members apply for short-courses, the supervisor should:

- (a) Be sure that only qualified staff make applications;
- (b) Work to spread training opportunities among staff members.

## **3. Criteria for consideration of requests for a familiarization visit by recently appointed Permanent Representative (PR) of a country with WMO<sup>1</sup>**

3.1 The aim of familiarization visits for recently appointed Permanent Representatives (PRs) is to support management capability of the suitable candidates particularly from least developed and developing countries.

3.2 To be considered for a familiarization visit the applicant must meet the following criteria:

- (a) A formal notification of the appointment of the PR from the candidate's government must be provided to WMO before the request;
- (b) Candidates applying for a familiarization visit must complete a Request Form for the visit;
- (c) A minimum of six months and no more than four years has elapsed between the commencement of taking up her/his duties and the proposed start of the familiarization visit;
- (d) The applicant is expected to continue her/his role as PR for a minimum of two years following the familiarization visit;

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<sup>1</sup> *The funds should be available, with the view to maintain annual expenditure on familiarization visits to less than 10% of the funds available to fellowships from the Regular Budget.*

- (e) The applicant has not had previous exposure to WMO activities that are relevant to the familiarization visit;
- (f) The beneficiary country has not benefited from support for a familiarization visit in the past two years prior to the receipt of the visit request;
- (g) Be able to undertake the visit within six months of an official offer by the Secretary-General;
- (h) Opportunities should be sought to co-fund the proposed visit with other programmes, conferences, workshops, etc.

3.3 The visit is confined to a visit to WMO headquarters in Geneva and a visit to a Member close to WMO headquarters, or a visit to a Member within the Region, with a relatively more developed National Meteorological and Hydrological Service;

3.4 The visit is to be implemented in one working week;

3.5 During the visit the PR shall make a presentation to the WMO Secretariat and optional host Member on their NMHS services and requirements.

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