

ICTP Physics Without Frontiers: Mali
Course on Ordinary Differential Equations (ODEs) using Green's
Function

Faculty of Sciences and Techniques, University of Sciences,
Techniques and Technologies of Bamako (USTTB), Mali.

Programme

Monday, 5 May 2025

09:00 **Opening** 30'
09:30 **ODEs: Generalities** 1h0'
Speaker: Laure Gouba
10:30 **Break** 10'
10:40 **ODEs: Generalities** 1h30'
Speaker: Laure Gouba
12:10 **Break** 10'
12:20 **Machine Learning (ML)** 40'
Speaker: Kaniba Mady Keita
13:00 **Lunch** 1h0'

Tuesday, 6 May 2025

09:00 **ODEs: Integral and differential operators** 1h30'
Speaker: Laure Gouba
10:30 **Break** 10'
10:40 **ODEs: Formal adjoint of a differential operator** 1h30'
Speaker: Laure Gouba
12:10 **Break** 10'
12:20 **Machine Learning (ML)** 40'
Speaker: Kaniba Mady Keita
13:00 **Lunch** 1h0'

Wednesday, 7 May 2025

09:00 **ODEs: Second-order self-adjoint operators** 1h30'
Speaker: Laure Gouba
10:30 **Break** 10'
10:40 **ODEs: First-order differential operators** 1h30'
Speaker: Laure Gouba
12:10 **Break** 10'
12:20 **Machine Learning (ML)**
Speaker: Kaniba Mady Keita
13:00 **Lunch** 1h0'

Thursday, 8 May 2025

09:00 **ODEs: Second-order linear differential operators** 1h30'
Speaker: Laure Gouba
10:30 **Break** 10'
10:40 **ODEs: Tutorial** 1h30'
Speaker: Laure Gouba
12:10 **Break** 10'
12:20 **Machine Learning (ML)**
Speaker: Kaniba Mady Keita
13:00 **Lunch** 1h0'

Friday, 9 May 2025

09:00 **ODEs: Green's function**
Speaker: Laure Gouba
10:30 **Break** 10'
10:40 **ODEs: Properties of the Green's functions** 1h30'
Speaker: Laure Gouba
13:00 **Lunch** 1h0'

Monday, 12 May 2025

09:00 **ODEs: Construction of the Green's functions** 1h30'
Speaker: Laure Gouba
10:30 **Break** 10'
10:40 **ODEs: Green's function method versus the method of variation of constants** 1h30'
Speaker: Laure Gouba
12:10 **Break** 10'
12:20 **Machine Learning (ML)**
Speaker: Kaniba Mady Keita
13:00 **Lunch** 1h0'

Tuesday, 13 May 2025

09:00 **ODEs: Green's functions for in-homogeneous boundary conditions** 1h30'
Speaker: Laure Gouba
10:30 **Break** 10'
10:40 **ODEs: Tutorial** 1h30'
Speaker: Laure Gouba
12:10 **Break** 10'
12:20 **Machine Learning (ML)**
Speaker: Kaniba Mady Keita
13:00 **Lunch** 1h0'

Wednesday, 14 May 2025

09:00 **ODEs: Initial value Green's functions** 1h30'
Speaker: Laure Gouba
10:30 **Break** 10'
10:40 **ODEs: Generalized Green's function** 1h30'
Speaker: Laure Gouba
12:10 **Break** 10'
12:20 **Machine Learning (ML)**
Speaker: Kaniba Mady Keita
13:00 **Lunch** 1h0'

Thursday, 15 May 2025

09:00 **ODEs: Exam** 2h30'
11:30 **Break** 30'
12:00 **Machine Learning (ML)** 40'
Speaker: Kaniba Mady Keita
13:00 **Lunch** 1h0'

Friday, 16 May 2025

09:00 **ODEs: Series representations of the Green's function** 1h30'
Speaker: Laure Gouba
10:30 **Break** 10'
10:40 **Career's opportunities session** 1h0'
Speaker: Laure Gouba
11:40 **Closing**

