



**Şcoala Doctorală Interdisciplinară
(SDI)**

Domeniul de doctorat:
Informatica

Conducător doctorat:
Prof dr Sabin Tabirca

TEME (TEMATICĂ) PENTRU CONCURS

TEMA 1: Metode GPU pentru Fizica Computaționala
<ol style="list-style-type: none">1. Limbajul CUDA pentru programare paralela.2. Algoritmi GPU pentru ecuații diferențiale.3. Probleme computaționale in fizica.
Bibliografie recomandată: - J. Cheng, M. Grossman and T. McKecher, Professional CUDA C Programming, APress, 2014. - V. Kindratenko, Numerical Compuation with GPU-s, Springer 2014 [sectiunile referiatoare la ecuatii diferentiale]
TEMA 2: Aspecte Neutrosifice in Optimizarea Rețelelor
<ol style="list-style-type: none">1. Algoritmi de drum minim in retele.2. Algoritmi de fluxuri in retele.3. Logica neutrofosica.
Bibliografie recomandată: - Ahuja, Orlin, Magnati, Network Flows, 1993. - Florentin Smarandache Mohamed Abdel-Basset, Optimization Theory Based on Neutrosophic and Plithogenic Sets, Academic Press, 2020.

Nota:

La concursul de admitere candidații trebuie sa prezinte cunoștințe solide de:

1. Programare intr-un limbaj de programare de tip OOP e.g. C sau C++.
2. Algoritmi numerici pentru rezolvări de sisteme, ecuații diferențiale etc (Tema 1) si Algoritmi de optimizare in retele (Tema 2).

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Transilvania
University
of Brasov

ADMISSION TO DOCTORAL STUDIES

2020-2021

Session September 2020

Interdisciplinary Doctoral School
(SDI)

Field of doctoral studies:
Computer Science

PhD supervisor:
Prof dr Sabin Tabirca.

TOPICS FOR THE ADMISSION TO DOCTORAL STUDIES

TOPIC 1: GPU Computation for Computational Physics

1. CUDA Parallel Programming.
2. GPU Algorithms for Differential Equations.
3. Computational Problem in Physics.

Recommended bibliography:

- J. Cheng, M. Grossman and T. McKecher, Professional CUDA C Programming, APress, 2014.
- V. Kindratenko, Numerical Computation with GPU-s, Springer 2014 [sectiunile referitoare la ecuatii diferentiale]

TOPIC 2: Neutrosophic Aspect of Network Optimisation

1. Shortest Paths Algorithms in Networks.
2. Flow algorithms in Networks.
3. Neutrosophic Logic.

Recommended bibliography:

- Ahuja, Orlin, Magnati, Network Flows, 1993.
- Florentin Smarandache Mohamed Abdel-Basset, Optimization Theory Based on Neutrosophic and Plithogenic Sets, Academic Press, 2020.

Remarks:

Potential applicants for this PhD position should have solid knowledge in the following topics:

1. OOP programming in C or C++
2. Numerical algorithms for matrices and differential equations (Topic 1) and Network Algorithms (Topic 2)

Prof Dr Sabin Tabirca