

FIRST SEMESTER (Oct 7 - Jan 24)

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|---|
| Stochastic simulation methods - 10094 |
| Cooperative and critical phenomena - 10104 |
| Dynamical systems and chaos - 11001 |
| Stochastic processes - 11002 |
| Pattern formation - 11004 |
| Complex networks - 11003 |
| Introduction to complex systems - 11005 |
| Scientific presentation and visualization - 11007 |

Oct 7 - 11

| | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
|---------------|---|---------------------------------|--|----------|--------|
| 9:15 - 11:15 | Introduction to complex systems 9:30-11:30 | Introduction to complex systems | Stochastic simulation methods 9:30-11:00 | | |
| | | | Introduction to complex systems | | |
| 11:30 - 13:30 | | | Introduction to complex systems 11:15-13:15 | | |

Oct 14 - 18

| | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
|---------------|---------------------------------|--|---|--|---------------------------------|
| 9:15 - 11:15 | Introduction to complex systems | Introduction to complex systems | Stochastic simulation methods 9:30-11:00 | Introduction to complex systems | Introduction to complex systems |
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| 11:30 - 13:30 | Introduction to complex systems | Dynamical systems and chaos 11:30-13:00 | Introduction to complex systems 11:15- 13:15 | Dynamical systems and chaos 11:30-13:00 | |
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Oct 21- Jan 24

| | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
|---------------|---|---|---|---------------------------------|---|
| 9:30 - 11:15 | Cooperative and critical phenomena 10:00-13:00 | Dynamical systems and chaos 9:45-11:15 | Stochastic simulation methods 9:30-11:30 | Pattern formation 9:45-11:15 | Scientific presentation and visualization 9:30-11:15 |
| 11:30 - 13:00 | | Complex networks | Stochastic processes 11:45-13:15 | Dynamical systems and chaos | Stochastic simulation methods 11:30-12:30 |
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*December 13: Presentation of master thesis topics and 2nd semester optional subjects

Exam period: January 27 - February 14

SECOND SEMESTER (Feb 17 - May 22)

Subjects:

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| Nonlinear photonics - 11013 |
| Quantum physics for complex systems - 11006 |
| Non equilibrium collective phenomena - 11008 * |
| Modeling and dynamics of neural systems - 11012 * |
| Systems biology - 11010 * |
| Statistical physics in biological systems - 11011 * |
| Collective phenomena in social dynamics - 11015 * |
| Spatiotemporal dynamics - 11009 * |
| Quantum and nonlinear optics - 11014 * |
| Quantum transport and quantum noise - 11016 * |
| Information theory - 11017 * |
| Turbulence and nonlinear phenomena in fluids - 11018 * |

Feb 17-21

| | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
|---------------|---|---|---|---|---|
| 9:00-10:50 | 9:00-10:50 Information theory | 9:00-10:50 Nonlinear photonics | Statistical physics in biological systems 9:30-11:20 | 9:00-10:50 Modeling and dynamics of neural systems | Collective phenomena in social dynamics 9:30-11:20 |
| 11:10-13:00 | 11:10-13:00 Quantum and nonlinear optics | | Spatiotemporal dynamics 11:40-13:30 | 11:10-13:00 Systems biology | |
| 13:10-14:00 | | 12:10-14:00 Turbulence and nonlinear phenomena in fluids | | 13:10-14:00 Nonlinear photonics | |
| | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
| 15:30 - 17:20 | | Non equilibrium collective phenomena | | Quantum transport and quantum noise | |

Feb 24-28

| | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
|---------------|--|---|---|-------------------------------------|--------|
| 9:00-10:50 | 9:00-10:50 Information theory | 9:00-10:50 Collective phenomena in social dynamics | Statistical physics in biological systems 9:30-11:20 | | |
| 11:10-13:00 | 11:10-13:00 Quantum physics for complex systems | 11:10-13:00 Quantum physics for complex systems | 11:40-13:30 Quantum physics for complex systems | 11:10-13:00 Systems biology | |
| 13:10-14:00 | | | | 13:10-14:00 Nonlinear photonics | |
| | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
| 15:30 - 17:20 | | Non equilibrium collective phenomena | | Quantum transport and quantum noise | |

Mar 2-6

| | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
|-------------|---|---|--|----------------------------------|---|
| 9:00-10:50 | 9:00-10:50 Information theory | 9:00-10:50 Modeling and dynamics of neural systems | 9:00-10:50 Information theory | 9:00-10:50 Information theory | Collective phenomena in social dynamics 9:30-11:20 |
| 11:10-13:00 | 11:10-13:00 Quantum and nonlinear optics | 11:10-12:00 Quantum physics for complex systems | Spatiotemporal dynamics 11:40-13:30 | 11:10-13:00 Systems biology | 11:40-13:30 Information theory |
| 13:10-14:00 | | 12:10-14:00 Turbulence and nonlinear | | 13:10-14:00 | |

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|---------------|---------------|--------------------------------------|------------------|-------------------------------------|---------------|
| | | phenomena in fluids | | Nonlinear photonics | |
| | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
| 15:30 - 17:20 | | Non equilibrium collective phenomena | | Quantum transport and quantum noise | |

Mar 9-13

| | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
|---------------|---|---|---|---|---|
| 9:00-10:50 | 9:00-10:50 Information theory | 9:00-10:50 Nonlinear photonics | Statistical physics in biological systems 9:30-11:20 | 9:00-10:50 Modeling and dynamics of neural systems | Collective phenomena in social dynamics 9:30-11:20 |
| 11:10-13:00 | 11:10-13:00 Quantum and nonlinear optics | 11:10-12:00 Quantum physics for complex systems | Spatiotemporal dynamics 11:40-13:30 | 11:10-13:00 Systems biology | Quantum physics for complex systems 11:40-13:30 |
| 13:10-14:00 | | 12:10-14:00 Turbulence and nonlinear phenomena in fluids | | 13:10-14:00 Nonlinear photonics | |
| | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
| 15:30 - 17:20 | | Non equilibrium collective phenomena | | Quantum transport and quantum noise | |

Mar 16-20

| | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
|------------|----------------------------------|---|---|---|---|
| 9:00-10:50 | 9:00-10:50 Information theory | 9:00-10:50 Collective phenomena in social dynamics | Statistical physics in biological systems | 9:00-10:50 Modeling and dynamics of neural systems | Collective phenomena in social dynamics |

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| | | | 9:30-11:20 | | 9:30-11:20 |
| 11:10-13:00 | 11:10-13:00 Quantum and nonlinear optics | 11:10-12:00 Quantum physics for complex systems | Spatiotemporal dynamics 11:40-13:30 | 11:10-13:00 Systems biology | Quantum physics for complex systems 11:40-13:30 |
| 13:10-14:00 | | 12:10-14:00 Turbulence and nonlinear phenomena in fluids | | 13:10-14:00 Nonlinear photonics | |
| | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
| 15:30 - 17:20 | | Non equilibrium collective phenomena | | Quantum transport and quantum noise | |

Mar 23-27

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|---------------|---|---|---|---|---|
| | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
| 9:00-10:50 | 9:00-10:50 Information theory | 9:00-10:50 Collective phenomena in social dynamics | Statistical physics in biological systems 9:30-11:20 | 9:00-10:50 Modeling and dynamics of neural systems | Collective phenomena in social dynamics 9:30-11:20 |
| 11:10-13:00 | 11:10-13:00 Quantum and nonlinear optics | 11:10-12:00 Quantum physics for complex systems | | Spatiotemporal dynamics 11:40-13:30 | 11:10-13:00 Systems biology |
| 13:10-14:00 | | 12:10-14:00 Turbulence and nonlinear phenomena in fluids | | | 13:10-14:00 Nonlinear photonics |
| | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
| 15:30 - 17:20 | | Non equilibrium collective phenomena | | Quantum transport and quantum noise | |

Mar 30 – Apr 3

| | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
|---------------|---|---|---|---|---|
| 9:00-10:50 | 9:00-10:50 Information theory | 9:00-10:50 Collective phenomena in social dynamics | Statistical physics in biological systems 9:30-11:20 | 9:00-10:50 Modeling and dynamics of neural systems | Collective phenomena in social dynamics 9:30-11:20 |
| 11:10-13:00 | 11:10-13:00 Quantum and nonlinear optics | 11:10-12:00 Quantum physics for complex systems | Spatiotemporal dynamics 11:40-13:30 | 11:10-13:00 Systems biology | Quantum physics for complex systems 11:40-13:30 |
| 13:10-14:00 | | 12:10-14:00 Turbulence and nonlinear phenomena in fluids | | 13:10-14:00 Nonlinear photonics | |
| | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
| 15:30 - 17:20 | | Non equilibrium collective phenomena | | Quantum transport and quantum noise | |

Apr 6-8

| | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
|-------------|---|--|---|---|--|
| 9:00-10:50 | | 9:00-10:50 Nonlinear photonics | Statistical physics in biological systems 9:30-11:20 | 9:00-10:50 Modeling and dynamics of neural systems | |
| 11:10-13:00 | 11:10-13:00 Quantum and nonlinear optics | 11:10-12:00 Quantum physics for complex systems | Spatiotemporal dynamics 11:40-13:30 | 11:10-13:00 Systems biology | Quantum physics for complex systems 11:40-13:30 |
| | | 12:10-14:00 Turbulence and nonlinear | | | |

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|---------------|---------------|--------------------------------------|------------------|-------------------------------------|---------------|
| 13:10-14:00 | | phenomena in fluids | | 13:10-14:00 Nonlinear photonics | |
| | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
| 15:30 - 17:20 | | Non equilibrium collective phenomena | | Quantum transport and quantum noise | |

Apr 20 -24

| | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
|---------------|---|---|---|---|--|
| 9:00-10:50 | | 9:00-10:50 Nonlinear photonics | Statistical physics in biological systems 9:30-11:20 | 9:00-10:50 Modeling and dynamics of neural systems | |
| 11:10-13:00 | 11:10-13:00 Quantum and nonlinear optics | 11:10-12:00 Quantum physics for complex systems | Spatiotemporal dynamics 11:40-13:30 | 11:10-13:00 Systems biology | Quantum physics for complex systems 11:40-13:30 |
| 13:10-14:00 | | 12:10-14:00 Turbulence and nonlinear phenomena in fluids | | 13:10-14:00 Nonlinear photonics | |
| | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
| 15:30 - 17:20 | | Non equilibrium collective phenomena | | Quantum transport and quantum noise | |

Apr 27 - 30

| | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
|------------|---------------|---|---|---|---------------|
| 9:00-10:50 | | 9:00-10:50 Modeling and dynamics of neural systems | 9:00-10:50 Modeling and dynamics of neural systems | 9:00-10:50 Modeling and dynamics of neural systems | |

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| 11:10-13:00 | 11:10-13:00 Quantum and nonlinear optics | 11:10-12:00 Quantum physics for complex systems | Spatiotemporal dynamics 11:40-13:30 | 11:10-13:00 Systems biology | Quantum physics for complex systems 11:40-13:30 |
| 13:10-14:00 | | 12:10-14:00 Turbulence and nonlinear phenomena in fluids | | 13:10-14:00 Nonlinear photonics | |
| | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
| 15:30 - 17:20 | | Non equilibrium collective phenomena | | Quantum transport and quantum noise | |

May 4 - 8

| | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
|-------------|---|---|---|---|--|
| 9:00-10:50 | | 9:00-10:50 Nonlinear photonics | Statistical physics in biological systems 9:30-11:20 | 9:00-10:50 Modeling and dynamics of neural systems | |
| | | | | | |
| 11:10-13:00 | 11:10-13:00 Quantum and nonlinear optics | 11:10-12:00 Quantum physics for complex systems | Spatiotemporal dynamics 11:40-13:30 | 11:10-13:00 Systems biology | Quantum physics for complex systems 11:40-13:30 |
| 13:10-14:00 | | 12:10-14:00 Turbulence and nonlinear phenomena in fluids | | 13:10-14:00 Nonlinear photonics | |
| | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |

| | | | | | |
|---------------|--|--|--|--|--|
| 15:30 - 17:20 | | | | | |
|---------------|--|--|--|--|--|

May 11 - 15

| | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
|---------------|--------|--|-----------|------------------------------------|--|
| 9:00-10:50 | | 9:00-10:50 Nonlinear photonics | | | |
| 11:10-13:00 | | 11:10-12:00 Quantum physics for complex systems | | | Quantum physics for complex systems 11:40-13:30 |
| 13:10-14:00 | | | | 13:10-14:00 Nonlinear photonics | |
| | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
| 15:30 - 17:20 | | | | | |

May 18 - 22

| | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
|-------------|--------|-----------------------------------|-----------|----------|--------|
| 9:00-10:50 | | 9:00-10:50 Nonlinear photonics | | | |
| 11:10-13:00 | | 11:10-12:00 | | | |

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|---------------|---------------|-------------------------------------|------------------|------------------------------------|--|
| | | Quantum physics for complex systems | | | Quantum physics for complex systems 11:40-13:30 |
| 13:10-14:00 | | | | 13:10-14:00 Nonlinear photonics | |
| | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
| 15:30 - 17:20 | | | | | |

Exam period: May 25 – June 12. Extraordinary exam period: June 15-19