

**Preliminary teaching programme 2024-2025**

| Code    | Course unit name   | Score (cr) | Period       | Teaching language(s)                | Method of implementation and mode of teaching | Open university teaching         | Open to exchange students | Open to students of other degree programmes |
|---------|--|------------|--------------|-------------------------------------|---|----------------------------------|---------------------------|---|
| FYS1001 | Vuorovaikutukset ja kappaleet                                      | 5 cr       | 1. period    | Finnish                             | Lecture course, contact teaching              | yes                              | no                        | yes   |
| FYS1001 | Växelverknningar och kroppar                                       | 5 cr       | 1. period    | Swedish                             | Lecture course, contact teaching              | yes                              | no                        | yes   |
| FYS1002 | Vuorovaikutukset ja aine   | 5 cr       | 2. period    | Finnish                             | Lecture course, contact teaching              | yes                              | no                        | yes   |
| FYS1002 | Växelverknningar och materia                                       | 5 cr       | 2. period    | Swedish                             | Lecture course, contact teaching              | yes                              | no                        | yes   |
| FYS1003 | Sähkömagnetismi  | 5 cr       | 3. period    | Finnish                             | Lecture course, contact teaching              | yes                              | no                        | yes   |
| FYS1003 | Electromagnetism   | 5 cr       | 3. period    | Swedish                             | Lecture course, contact teaching              | yes                              | no                        | yes   |
| FYS1004 | Säteilykentät ja fotonit   | 5 cr       | 4. period    | Finnish                             | Lecture course, contact teaching              | yes                              | no                        | yes   |
| FYS1004 | Strålningsfält och fotoner   | 5 cr       | 4. period    | Swedish                             | Lecture course, contact teaching              | yes                              | no                        | yes   |
| FYS1010 | Matemaattiset apuneuvot I  | 5 cr       | 1. period    | Finnish, Swedish                    | Lecture course, contact teaching              | yes                              | no                        | yes   |
| FYS1011 | Matemaattiset apuneuvot II   | 5 cr       | 2. period    | Finnish, Swedish                    | Lecture course, contact teaching              | yes                              | no                        | yes   |
| FYS1012 | Matemaattiset apuneuvot III  | 5 cr       | 3. period    | Finnish, Swedish                    | Lecture course, contact teaching              | yes                              | no                        | yes   |
| FYS1013 | Tieteellinen laskenta I  | 5 cr       | 2. period    | Finnish                             | Lecture course, contact teaching              | no                               | no                        | yes   |
| FYS1014 | Havaintojen tilastollinen käsittely                                | 5 cr       | 4. period    | Finnish, Swedish (1 exercise group) | Lecture course, contact teaching              | yes                              | no                        | yes   |
| FYS1015 | Fysiikkaa luonnontieteilijöille                                    | 5 cr       | 3. period    | Finnish                             | including both contact and distance teaching  | yes                              | no                        | yes   |
| FYS1015 | Fysiikkaa luonnontieteilijöille                                    | 5 cr       | summer 2025  | Finnish                             | -   | Only as open university teaching | no                        | yes   |
| FYS1016 | Fysiikan perusopinon laboratoriotyöt I                             | 2 cr       | 1.-2. period | Finnish                             | contact teaching, laboratory course           | yes                              | no                        | yes   |
| FYS1016 | Fysikens grundstudiers laboratoriearbeten I                        | 2 cr       | 1.-2. period | Swedish                             | contact teaching, laboratory course           | yes                              | no                        | yes   |
| FYS1016 | Laboratory Exercises in Basic Studies of Physics I                 | 2 cr       | 1.-2. period | English                             | contact teaching, laboratory course           | yes                              | yes                       | yes   |
| FYS1017 | Fysiikan perusopinon laboratoriotyöt II                            | 3 cr       | 3.-4. period | Finnish                             | contact teaching, laboratory course           | yes                              | no                        | yes   |
| FYS1017 | Fysikens grundstudiers laboratoriearbeten II                       | 3 cr       | 3.-4. period | Swedish                             | contact teaching, laboratory course           | yes                              | no                        | yes   |
| FYS1017 | Laboratory Exercises in Basic Studies of Physics II                | 3 cr       | 3.-4. period | English                             | contact teaching, laboratory course           | yes                              | yes                       | yes   |
| FYS2001 | Termofysiikan perusteet  | 5 cr       | 1. period    | Finnish                             | Lecture course, contact teaching              | no                               | no                        | yes   |
| FYS2001 | Termofysikens grunder  | 5 cr       | 1. period    | Swedish                             | Lecture course, contact teaching              | no                               | no                        | yes   |
| FYS2002 | Termodynaamiset potentiaalit                                       | 5 cr       | 2. period    | Finnish                             | Lecture course, contact teaching              | no                               | no                        | yes   |
| FYS2002 | Termodynamiska potentialer   | 5 cr       | 2. period    | Swedish                             | Lecture course, contact teaching              | no                               | no                        | yes   |
| FYS2003 | Kvanttifysiikan perusteet  | 5 cr       | 4. period    | Finnish                             | Lecture course, contact teaching              | yes                              | no                        | yes   |
| FYS2003 | Kvanttfysikens grunder   | 5 cr       | 4. period    | Swedish                             | including both contact and distance teaching  | yes                              | no                        | yes   |
| FYS2004 | Suhteellisuusteorian perusteet                                     | 5 cr       | 3. period    | Finnish, Swedish                    | Lecture course, contact teaching              | yes                              | no                        | yes   |
| FYS2005 | Kvanttifysiikan sovelluksia - Atomit ja molekyylit                 | 5 cr       | 1. period    | Finnish                             | Lecture course, contact teaching              | no                               | no                        | yes   |
| FYS2005 | Kvanttfysikens tillämpningar - Atomer och molekyler                | 5 cr       | 1. period    | Swedish                             | including both contact and distance teaching  | no                               | no                        | yes   |
| FYS2006 | Kvanttifysiikan sovelluksia - Tiivis aine ja alkeishiukkaset       | 5 cr       | 2. period    | Finnish                             | Lecture course, contact teaching              | no                               | no                        | yes   |
| FYS2006 | Kvanttfysikens tillämpningar - Det fasta tillståndet och elementer | 5 cr       | 2. period    | Swedish                             | Lecture course, contact teaching              | no                               | no                        | yes   |
| FYS2007 | Fysiikan mittausmenetelmät   | 5 cr       | 1. period    | Finnish                             | Lecture course, contact teaching              | no                               | no                        | yes   |
| FYS2008 | Fysiikan aineopinon laboratoriotyöt I                              | 5 cr       | 3. period    | Finnish, English                    | contact teaching, laboratory course           | no                               | yes                       | yes   |
| FYS2009 | Fysiikan aineopinon laboratoriotyöt II                             | 5 cr       | 4. period    | Finnish                             | contact teaching, laboratory course           | no                               | no                        | yes   |
| FYS2010 | Mathematical Methods of Physics Ia                                 | 5 cr       | 1. period    | English/Finnish                     | Lecture course, contact teaching              | no                               | yes                       | yes   |
| FYS2011 | Mathematical Methods of Physics Ib                                 | 5 cr       | 2. period    | English/Finnish                     | Lecture course, contact teaching              | no                               | yes                       | yes   |
| FYS2012 | Mathematical Methods of Physics Ila                                | 5 cr       | 3. period    | English                             | Lecture course, contact teaching              | no                               | yes                       | yes   |

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| FYS2013 | Mathematical Methods of Physics Iib          | 5 cr       | 4. period              | English              | Lecture course, contact teaching   | no                       | yes                       | yes   |
| FYS2027 | Mekaniikka                                   | 5 cr       | 1. period              | Finnish              | Lecture course, contact teaching   | no                       | no                        | yes   |
| FYS2015 | Statistinen mekaniikka                       | 5 cr       | 2. period              | Finnish              | Lecture course, contact teaching   | no                       | no                        | yes   |
| FYS2016 | Electrodynamics I                            | 5 cr       | 3. period              | English              | Lecture course, contact teaching   | no                       | yes                       | yes   |
| FYS2017 | Electrodynamics II                           | 5 cr       | 4. period              | English              | Lecture course, contact teaching   | no                       | yes                       | yes   |
| FYS2061 | Quantum Mechanics Ia                         | 5 cr       | 1. period              | English              | Lecture course, contact teaching   | no                       | yes                       | yes   |
| FYS2062 | Quantum Mechanics Ib                         | 5 cr       | 2. period              | English              | Lecture course, contact teaching   | no                       | yes                       | yes   |
| FYS2019 | Kvanttistatistiikka                          | 5 cr       | 3. period              | Finnish              | Lecture course, contact teaching. Possibility to study in English, lectures in Finnish.            | no                       | yes                       | yes   |
| FYS2031 | Meteorologian ja säähavainnon teon perusteet | 5 cr       | 1. period              | Finnish              | Lecture course, contact teaching   | no                       | no                        | yes   |
| FYS2032 | Ilmakehän termodynamiikka                    | 5 cr       | 2. period              | Finnish              | Lecture course, contact teaching   | no                       | no                        | yes   |
| FYS2033 | Ilmakehän virtausdynamiikan perusteet        | 10 cr      | 1.-2. period           | Finnish              | Lecture course, contact teaching. Lectures in Finnish, exercises possible to do in English.        | no                       | no                        | yes   |
| FYS2034 | Klimatologian perusteet                      | 2 cr       | 3. period              | Finnish              | Lecture course, contact teaching   | no                       | no                        | yes   |
| FYS2035 | Fysikaalinen klimatologia                    | 3 cr       | 3. period              | Finnish              | Lecture course, contact teaching   | no                       | no                        | yes   |
| FYS2041 | Tähtitieteen perusteet I                     | 5 cr       | 3. period              | Finnish              | Lecture course, contact teaching   | no                       | no                        | yes   |
| FYS2042 | Tähtitieteen perusteet II                    | 5 cr       | 4. period              | Finnish              | Lecture course, contact teaching   | no                       | no                        | yes   |
| FYS2043 | Johdatus avaruusplasmafysiikkaan             | 5 cr       | 1. period              | Finnish              | Lecture course, contact teaching   | no                       | no                        | yes   |
| FYS2044 | Havaitsevan tähtitieteen peruskurssi I       | 5 cr       | 1.-2. period           | Finnish              | Lecture course, contact teaching   | no                       | no                        | yes   |
| FYS2045 | Havaitsevan tähtitieteen peruskurssi II      | 5 cr       | 3.-4. period           | Finnish, English     | Lecture course, contact teaching   | no                       | yes                       | yes   |
| FYS2046 | Astrofysiikan peruskurssi I                  | 5 cr       | Not lectured 2024-2025 |                      |  |                          |                           |   |
| FYS2047 | Astrofysiikan peruskurssi II                 | 5 cr       | Not lectured 2024-2025 |                      |  |                          |                           |   |
| FYS2055 | Taivaanmekaniikka                            | 5 cr       | 2. period              | Finnish              | Lecture course, contact teaching. Possibility to study in English or Swedish, lectures in Finnish. | no                       | yes                       | yes   |
| FYS2051 | Aurinkokunnan fysiikka                       | 5 cr       | Not lectured 2024-2025 |                      |  |                          |                           |   |
| FYS2052 | Galaksit ja kosmologia                       | 5 cr       | Not lectured 2024-2025 |                      |  |                          |                           |   |
| FYS2053 | Linnunradan rakenne                          | 5 cr       | 1.-2. period           | Finnish              | Lecture course, contact teaching   | no                       | no                        | yes   |
| FYS2054 | Tähtien rakenne ja kehitys                   | 5 cr       | 3.-4. period           | Finnish              | Lecture course, contact teaching   | no                       | no                        | yes   |
| FYS2071 | Aerosol Physics I                            | 5 cr       | 1. period              | English              | Lecture course, contact teaching   | no                       | yes                       | yes   |
| FYS2072 | Ympäristöfysiikka                            | 5 cr       | Not lectured 2024-2025 |                      |  |                          |                           |   |
| FYS2073 | Fluid Phenomena                              | 5 cr       | 1. period              | English              | Lecture course, contact teaching   | no                       | yes                       | yes   |
| FYS2074 | Kasvihuoneilmä, ilmastomuutos ja vaikutukset | 5 cr       | Not lectured 2024-2025 |                      |  |                          |                           |   |
| FYS2075 | Meritieteen peruskurssi                      | 5 cr       | 1. period              | Finnish              | Lecture course, contact teaching   | no                       | no                        | yes   |
| FYS2076 | Basic Course in Hydrology                    | 5 cr       | 4. period              | English              | Lecture course, contact teaching   | no                       | yes                       | yes   |
| FYS2078 | Ympäristöongelmat, fysiikka ja kemia         | 5 cr       | Not lectured 2024-2025 |                      |  |                          |                           |   |
| FYS2079 | Materialfysikens grunder                     | 5 cr       | Not lectured 2024-2025 |                      |  |                          |                           |   |
| FYS2081 | Cosmology I                                  | 5 cr       | 1. period              | English              | Lecture course, contact teaching   | no                       | yes                       | yes   |
| FYS2028 | Mekaniikan jatkokurssi                       | 5 cr       | 2. period              | Finnish              | including both contact and distance teaching   | no                       | no                        | yes   |
| FYS2029 | Quantum Computing                            | 5 cr       | 4. period              | English              | Lecture course, contact teaching   | no                       | yes                       | yes   |
| FYS2082 | Elektroniikka I                              | 5 cr       | 2. period              | Finnish              | Lecture course, contact teaching   | no                       | no                        | yes   |
| FYS2083 | Introduction to nanoscience                  | 5 cr       | 1. period              | English              | Lecture course, contact teaching   | no                       | yes                       | yes   |
| FYS2084 | Fundamentals of Materials Science            | 5 cr       | 2. period              | English              | Lecture course, contact teaching   | no                       | yes                       | yes   |
| FYS2085 | Scientific computing II                      |            | 2. period              | English              | Lecture course, contact teaching   | no                       | yes                       | yes   |

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| FYS2086 | Atmosfärvetenskap nu                           | 5 cr       | Not lectured 2024-2025 |                      |  |                                  |                           |   |
| FYS2087 | Air Quality in a Changing World                | 5 cr       | 4. period              | English              | online teaching (not time-bound)   | no                               | yes                       | yes   |
| FYS2088 | Introduction to molecular dynamics simulations | 5 cr       | 1. period              | English              | Lecture course, contact teaching   | no                               | yes                       | yes   |
| FYS4001 | Fysikaalisiin tieteisiin perehtyminen          | 3 cr       | 1.-2. period           | Finnish              | Lecture course, contact teaching   | no                               | no                        | yes   |
| FYS4001 | Presentation av de fysikaliska vetenskaperna   | 3 cr       | 1.-2. period           | Swedish              | Lecture course, contact teaching   | no                               | no                        | yes   |
| FYS4002 | Työelämätaidot I - Ongelmanratkaisu ryhmässä   | 1 cr       | 1.-4. period           | Finnish              | Integrated to courses FYS1016 and FYS1017  | no                               | no                        | yes   |
| FYS4003 | Työelämätaidot II - Akateeminen kirjoittaminen | 1 cr       | 2. period              | Finnish              | Integrated to course FYS2002   | no                               | no                        | yes   |
| FYS4004 | Opiskelutaidot I                               | 1 cr       | 1.-4. period           | Finnish              | including both contact and distance teaching   | no                               | no                        | no  |
| FYS4005 | Opiskelutaidot II                              | 1 cr       | 1.-4. period           | Finnish              | including both contact and distance teaching   | no                               | no                        | no  |
| FYS4006 | Äidinkieli (tutkielmaseminaari)                | 3 cr       | 1.-2. period           | Finnish              | Seminar, contact teaching  | no                               | no                        | no  |
| FYS4006 | Äidinkieli (tutkielmaseminaari, kaksikielinen) | 3 cr       | 1.-2. period           | Finnish, Swedish     | Seminar, contact teaching  | no                               | no                        | no  |
| FYS4006 | Äidinkieli (tutkielmaseminaari)                | 3 cr       | 3.-4. period           | Finnish              | Seminar, contact teaching  | no                               | no                        | no  |
| FYS4006 | Äidinkieli (tutkielmaseminaari)                | 3 cr       | 3.-4. period           | Finnish              | Seminar, contact teaching  | no                               | no                        | no  |
| FYS4011 | Kerro tähtitieteestä (Työelämätaidot II)       | 1 cr       | 4. period              | Finnish              | Lectures and independent study   | no                               | no                        | yes   |
| FYS4012 | Maailmankaikkeus nyt                           | 3 cr       | 1. period              | Finnish              | Lecture course, contact teaching   | no                               | no                        | yes   |
| FYS4012 | Maailmankaikkeus nyt                           | 3 cr       | summer 2025            | Finnish              | -  | Only as open university teaching | no                        | yes   |
| FYS4013 | Universum nu                                   | 3 cr       | 3.-4. period           | Swedish              | contact teaching   | no                               | no                        | yes   |
| FYS4014 | Johdatus astrobiologiaan                       | 3 cr       | 2. period              | Finnish              | Lecture course, contact teaching. Possibility to make exam and have material in English or Swedish, lectures are in Finnish. | no                               | yes                       | yes   |
| FYS4014 | Johdatus astrobiologiaan                       | 3 cr       | summer 2025            | Finnish              | -  | Only as open university teaching | yes                       | yes   |
| FYS4016 | Nutida fysikens grunder                        | 5 cr       | 1. period              | Swedish              | contact teaching   | yes                              | no                        | yes   |
| FYS4018 | Universe Now                                   | 3 cr       | Not lectured 2024-2025 |                      |  |                                  |                           |   |
| FYS4015 | Naturvetenskaper nu I                          | 2 op       | 4. period              | Swedish              | including both contact and distance teaching   | yes                              | no                        | yes   |
| FYS4020 | Naturvetenskaper nu II                         | 2 cr       | Not lectured 2024-2025 |                      |  |                                  |                           |   |
| FYS4023 | Urasuunnittelu                                 | 2 cr       | 2. period              | Finnish              | contact teaching   | no                               | no                        | no  |
| FYS4027 | Ilmasto.ny.tutustumiskurssi                    | 2 cr       | summer 2025            | Finnish              | distance teaching (time-bound)   | Only as open university teaching | no                        | yes   |