

Technische Natuurkunde Bachelor programme 2021/2022(See also the [transitional arrangements TN](#))

The column 'Participation' indicates the accessibility of a course.

UT = Accessible to all UT students. provided that they meet prior knowledge and entry requirements for the course.

AD = After permission from the TN programme (see [Participation in Applied Physics Courses](#) for more information and the application form).

TN = Only accessible to TN students.

B1 (Generation 2021/2022)

| Course code | Name | Coordinator/examiner | Lang. | Participation | EC |
|-------------|---|--------------------------|-------|---------------|-----|
| | TN MOD01 Dynamics and Relativity | J.H. Snoeijer | | | |
| 202100094 | Dynamics and Relativity | J.H. Snoeijer | NL | UT | 4.5 |
| 202001215 | Calculus 1 | L. Pehlivan | EN | UT | 4.0 |
| 202100095 | Lab Course 1 | I.C.W.T.A. van Veldhoven | NL | AD | 2.0 |
| 202000674 | Programming and Data Processing 1 | J.S. Kanger | NL | AD | 2.0 |
| 202000675 | Project Dynamics en Relativity | A. Marin | EN | TN | 2.5 |
| | TN MOD02 Thermodynamics | A.J. Onnink | | | |
| 202000677 | Thermodynamics | S. Vanapalli | EN/NL | UT | 4.0 |
| 202001224 | Calculus 2 | J.W. Polderman | EN | UT | 4.0 |
| 202000678 | Lab Course 2 | I.C.W.T.A. van Veldhoven | NL | AD | 2.0 |
| 202000679 | Programming and Data Processing 2 | J.S. Kanger | NL | AD | 1.0 |
| 202000680 | Project Thermodynamics | A.J. Onnink | NL | TN | 4.0 |
| | TN MOD03 Electromagnetism & Measurements | H.L. Offerhaus | | | |
| 202000682 | Electromagnetics | K.J. Boller | EN | UT | 5.0 |
| 202001229 | Vector Calculus | J.J.W. van der Vegt | EN | UT | 2.0 |
| 202000683 | Instrumentation | A.U. Kario | EN | AD | 4.0 |
| 202000684 | Analytical Programming | J.W.J. Verschuur | EN | AD | 1.0 |
| 202000685 | Project Electromagnetism & Measurements | M.M.J. Dhalle | EN | TN | 3.0 |
| | TN MOD04 Quantum and Geometrical Optics | A. Brinkman | | | |
| 202000687 | Quantum Matter | A. Brinkman | NL | UT | 5.0 |
| 202001211 | Linear Algebra | T.S. Craig | EN | UT | 3.0 |
| 202000688 | Geometrical Optics | J.S. Kanger | NL | AD | 2.5 |
| 202000689 | Engineering Systems | J.W.J. Verschuur | EN | TN | 4.5 |
| Total B1 | | | | | 60 |

B2 (generation 2020/2021)

| Course code | Name | Coordinator/examiner | Lang. | Participation | EC |
|-------------|--|------------------------------|-------|---------------|-----|
| | <u>TN MOD05 Signals. Models en Systems</u> | G.C. Vreman - de Olde | | | |
| 202000691 | Signals | S.J.G. Lemay | EN | AD | 4.0 |
| 202000692 | Models | I.C.W.T.A. van Veldhoven | EN | AD | 4.0 |
| 202000693 | Project Signals. Models en Systems | J.W.J. Verschuur | EN | TN | 3.0 |
| | Keuze 1 van 2: | Van Veldhoven | | | |
| 202000694 | Classical Mechanics | C. Filippi | EN | UT | 4.0 |
| 202000695 | Engineering Solid Mechanics | J.P. Schilder | EN | UT | 4.0 |
| | <u>TN MOD06 Waves. Interference and Probability</u> | J.S. Kanger | | | |
| 202000697 | Optics | R. Saive | EN | AD | 7.0 |
| 202000698 | Quantum Mechanics | A. Brinkman | EN | UT | 6.0 |
| 202000699 | Hilbert Space | M. Bokdam | EN | UT | 2.0 |
| | <u>TN MOD07 Condensed Matter Physics</u> | E.S. Kooij | | | |
| 202000701 | Introduction Solid State Physics | A. van Houselt | NL | AD | 7.0 |
| 202000702 | Statistical Physics | F.G. Mugele | NL | UT | 6.0 |
| 202000703 | Partial Differential Equations | B.J. Geurts | EN | UT | 2.0 |
| | <u>TN MOD08 Continuum Dynamics</u> | R.M. van der Meer | | | |
| 202000705 | Fluid Physics | R.M. van der Meer | EN | AD | 7.0 |
| 202000706 | Electrodynamics | G.H.L.A. Brocks | EN | UT | 6.0 |
| 202000707 | Numerical Methods for PDE | B.J. Geurts | EN | UT | 2.0 |
| Total B2 | | | | | 60 |

B3 (Generation 2019-2020)

| Course code | Name | Coordinator/examiner | Lang. | Participation | EC |
|-------------|---|----------------------|-------|---------------|-------------|
| | Minor/profiling The information is different per minor. A minor consist of 15 EC. See Osiris Course catalogue and https://www.utwente.nl/en/education/electives/minor/general-information/ Possibilities: a. High Tech Human Touch Minors (HTHT) b. Regular UT minors ¹ c. Leren Lesgeven (Dutch). Crossing Borders d. Study abroad e. Study at another educational study institute f. Transfer minor (transfer to a master's degree from another study programme) | | | | 30.0 |
| | TN MOD11 Orientation | Programme TN | | | |
| 202000709 | Preparation Bachelor's Assignment ² | C.I. van Emmerik | NL | TN | 5.0 |
| | Electives 10 EC: | | | | |
| 202100223 | Computational Physics | C. Filippi | EN | UT | 2.5/5.0 |
| 202000710 | Materials Science | A. Brinkman | EN | UT | 5.0 |
| 202100224 | Machine Learning | M. Bokdam | EN | UT | 3.0/5.0 |
| 202100225 | Remote Control of Experiments | J.W.J. Verschuur | EN | UT | 2.5/5.0 |
| 202001413 | Soft Matter Physics | S.J.G. Lemay | EN | UT | 5.0 |
| 202000711 | Technical Optics | K.J. Boller | EN | UT | 5.0 |
| | 202000716 TN MOD12 Bachelor's Assignment | Programme TN | | | 15.0 |
| | General Aspects (50%) | Chair Bachelor's | EN | TN | |
| | Physical Aspects (50%) | Assignment Committee | EN | TN | |
| Total B3 | | | | | 60 |

¹ Technische Natuurkunde offers the minor modules;

- Soft and Biological Physics
- Capita Selecta Applied Physics
- Capita Selecta Programming and Software Engineering
- Multidisciplinair project TN

More information can be found on the programme's website: [https://www.utwente.nl/nl/tn/algemene-
onderwijsinformatie/minor/](https://www.utwente.nl/nl/tn/algemene-onderwijsinformatie/minor/)

² Preparation Bachelor's assignment is also offered in block 1A for students who start their bachelor's assignment in Block 1B.