Faculty of Natural and Agricultural Sciences
Fakulteit Natuur- en Landbouwetenskappe
Lefapha la Disaense tša Tlhago le Temo

In which field do you dream of working?

Animals
- Animal Science
- Zoology
- Entomology
- Animal Genetics
- Wildlife Science
- Ecology

Human health
- Human Genetics
- Anatomy
- Physiology
- Medical Microbiology
- Anthropology
- Pharmacology

Molecular sciences
- Biochemistry
- Genetics
- Microbiology
- Biotechnology
- Bioinformatics
- Genomics
- Forensics

Plants
- Plant Science
- Plant Production
- Soil Science
- Plant Genetics
- Plant Pathology and Microbiology
- Ecology

Food security
- Food Science
- Nutrition
- Culinary Science
- Food Microbiology
- Agricultural Economics
- Agribusiness

Physical sciences
- Chemistry
- Physics
- Geochemistry
- Geophysics
- Biophysics
- Forensics

Numbers
- Mathematics
- Mathematical Studies
- Applied Mathematics
- Computational Biology
- Actuarial and Financial Mathematics
  (at least 80% for Mathematics)

Environment
- Meteorology
- Geology
- Geography
- Engineering Geology
- Geoinformatics
- Environmental Science

Consumer sciences
- Consumer Studies
- Hospitality Management
- Food Retail Management
- Clothing Retail Management

Central wheel:
- At least 60% for Mathematics AND Physical science — At least 50% for everything else
- Physical science and two other NSC subjects
- At least 60% for Mathematics AND Physical science — At least 50% for everything else
- At least 70% for Mathematics. Note: added requirements for Actuarial and Financial Mathematics
- At least 50% for everything else including Mathematics
- Three other NSC subjects

Center:
- Mathematics
- English (at least 60%)
- PLUS . . .

PLEASE NOTE: Mathematical Literacy is **not accepted** in this Faculty

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Periodic Table of the Elements

- **Pink** (left): the **s** block elements (consisting: hydrogen, alkali metals, and alkaline earth metals).
- **Blue** (middle): the **d** block elements (they are the transition metals).
- **Yellow** (right): the **p** block elements (consisting of some metals, metalloids, non-metals, noble gases, and halogens).
- **Peach** (two rows at the bottom): the **f** block elements (they are the inner transition elements, consisting of actinides and lanthanides).
- **Symbols** printed in **solid black:** solids at 25°C.
- **Symbols** printed in **white with outline:** gases at 25°C.
- **Symbols** printed in **grey with outline:** liquids at 25°C.

Dmitri Mendeleev

Legend example:
- Atomic number → 88
- Symbol → Ra
- Element name → Radium
- Atomic mass → 226.03
- Electronegativity → 1.0
- Electron configuration → [Rn] 7s²

Group																	
1 Ia	2 IIa											13 IIIa	14 IVa	15 Va	16 VIa	17 VIIa	18 VIIIa

Period 1:
- H 1, Hydrogen, 1.0079, 2.2, 1s¹
- He 2, Helium, 4.0026, 1s²

Period 2:
- Li 3, Lithium, 6.941, 1.0, [He] 2s¹
- Be 4, Beryllium, 9.0122, 1.5, [He] 2s²
- B 5, Boron, 10.811, 2.0, [He] 2s²2p¹
- C 6, Carbon, 12.011, 2.5, [He] 2s²2p²
- N 7, Nitrogen, 14.007, 3.1, [He] 2s²2p³
- O 8, Oxygen, 15.999, 3.5, [He] 2s²2p⁴
- F 9, Fluorine, 18.998, 4.1, [He] 2s²2p⁵
- Ne 10, Neon, 20.18, [He] 2s²2p⁶

Transition group labels:
| 3 IIIb | 4 IVb | 5 Vb | 6 VIb | 7 VIIb | 8 VIIIb | 9 VIIIb | 10 VIIIb | 11 Ib | 12 IIb |

Period 3:
- Na 11, Sodium, 22.990, 1.0, [Ne] 3s¹
- Mg 12, Magnesium, 24.305, 1.2, [Ne] 3s²
- Al 13, Aluminium, 26.982, 1.5, [Ne] 3s²3p¹
- Si 14, Silicon, 28.086, 1.7, [Ne] 3s²3p²
- P 15, Phosphorus, 30.974, 2.1, [Ne] 3s²3p³
- S 16, Sulphur, 32.066, 2.4, [Ne] 3s²3p⁴
- Cl 17, Chlorine, 35.453, 2.8, [Ne] 3s²3p⁵
- Ar 18, Argon, 39.948, [Ne] 3s²3p⁶

Period 4:
- K 19, Potassium, 39.098, 0.9, [Ar] 4s¹
- Ca 20, Calcium, 40.078, 1.0, [Ar] 4s²
- Sc 21, Scandium, 44.956, 1.2, [Ar] 3d¹4s²
- Ti 22, Titanium, 47.88, 1.3, [Ar] 3d²4s²
- V 23, Vanadium, 50.942, 1.5, [Ar] 3d³4s²
- Cr 24, Chromium, 51.996, 1.6, [Ar] 3d⁵4s¹
- Mn 25, Manganese, 54.938, 1.6, [Ar] 3d⁵4s²
- Fe 26, Iron, 55.845, 1.6, [Ar] 3d⁶4s²
- Co 27, Cobalt, 58.933, 1.7, [Ar] 3d⁷4s²
- Ni 28, Nickel, 58.693, 1.8, [Ar] 3d⁸4s²
- Cu 29, Copper, 63.546, 1.8, [Ar] 3d¹⁰4s¹
- Zn 30, Zinc, 65.41, 1.7, [Ar] 3d¹⁰4s²
- Ga 31, Gallium, 69.723, 1.8, [Ar] 3d¹⁰4s²4p¹
- Ge 32, Germanium, 72.64, 2.0, [Ar] 3d¹⁰4s²4p²
- As 33, Arsenic, 74.922, 2.2, [Ar] 3d¹⁰4s²4p³
- Se 34, Selenium, 78.96, 2.5, [Ar] 4d¹⁰4s²4p⁴
- Br 35, Bromine, 79.904, 2.7, [Ar] 3d¹⁰4s²4p⁵
- Kr 36, Krypton, 83.8, [Ar] 3d¹⁰4s²4p⁶

Period 5:
- Rb 37, Rubidium, 85.468, 0.9, [Kr] 5s¹
- Sr 38, Strontium, 87.62, 1.0, [Kr] 5s²
- Y 39, Yttrium, 88.906, 1.1, [Kr] 4d¹5s²
- Zr 40, Zirconium, 91.2245, 1.2, [Kr] 4d²5s²
- Nb 41, Niobium, 92.906, 1.2, [Kr] 4d⁴5s¹
- Mo 42, Molybdenum, 95.94, 1.3, [Kr] 4d⁵5s¹
- Tc 43, Technetium, 98.906, 1.4, [Kr] 4d⁵5s²
- Ru 44, Ruthenium, 101.07, 1.4, [Kr] 4d⁷5s¹
- Rh 45, Rhodium, 102.91, 1.5, [Kr] 4d⁸5s¹
- Pd 46, Palladium, 106.42, 1.4, [Kr] 4d¹⁰
- Ag 47, Silver, 107.87, 1.4, [Kr] 4d¹⁰5s¹
- Cd 48, Cadmium, 112.41, 1.5, [Kr] 4d¹⁰5s²
- In 49, Indium, 114.82, 1.5, [Kr] 4d¹⁰5s²5p¹
- Sn 50, Tin, 118.71, 1.7, [Kr] 4d¹⁰5s²5p²
- Sb 51, Antimony, 121.76, 1.8, [Kr] 4d¹⁰5s²5p³
- Te 52, Tellurium, 127.6, 2.0, [Kr] 4d¹⁰5s²5p⁴
- I 53, Iodine, 126.904, 2.2, [Kr] 4d¹⁰5s²5p⁵
- Xe 54, Xenon, 131.29, [Kr] 4d¹⁰5s²5p⁶

Period 6:
- Cs 55, Caesium, 132.91, 0.9, [Xe] 6s¹
- Ba 56, Barium, 137.33, 1.0, [Xe] 6s²
- La 57, Lanthanum, 138.91, 1.1, [Xe] 5d¹6s²
- Hf 72, Hafnium, 178.49, 1.3, [Xe] 4f¹⁴5d²6s²
- Ta 73, Tantalum, 180.95, 1.5, [Xe] 4f¹⁴5d³6s²
- W 74, Tungsten, 183.84, 1.4, [Xe] 4f¹⁴5d⁴6s²
- Re 75, Rhenium, 186.21, 1.5, [Xe] 4f¹⁴5d⁵6s²
- Os 76, Osmium, 190.23, 1.5, [Xe] 4f¹⁴5d⁶6s²
- Ir 77, Iridium, 192.22, 1.6, [Xe] 4f¹⁴5d⁷6s²
- Pt 78, Platinum, 195.08, 1.4, [Xe] 4f¹⁴5d⁹6s¹
- Au 79, Gold, 196.97, 1.4, [Xe] 4f¹⁴5d¹⁰6s¹
- Hg 80, Mercury, 200.59, 1.4, [Xe] 4f¹⁴5d¹⁰6s²
- Tl 81, Thallium, 204.38, 1.4, [Xe] 4f¹⁴5d¹⁰6s²6p¹
- Pb 82, Lead, 207.20, 1.6, [Xe] 4f¹⁴5d¹⁰6s²6p²
- Bi 83, Bismuth, 208.98, 1.7, [Xe] 4f¹⁴5d¹⁰6s²6p³
- Po 84, Polonium, 208.98, 1.8, [Xe] 4f¹⁴5d¹⁰6s²6p⁴
- At 85, Astatine, 210, 2.0, [Xe] 4f¹⁴5d¹⁰6s²6p⁵
- Rn 86, Radon, 222.02, [Xe] 4f¹⁴5d¹⁰6s²6p⁶

Period 7:
- Fr 87, Francium, 223.02, 0.9, [Rn] 7s¹
- Ra 88, Radium, 226.03, 1.0, [Rn] 7s²
- Ac 89, Actinium, 227.03, [Rn] 6d¹7s²
- Rf 104, Rutherfordium, 261.11
- Db 105, Dubnium, 262.11
- Sg 106, Seaborgium, 266
- Bh 107, Bohrium, 264
- Hs 108, Hassium, 277
- Mt 109, Meitnerium, 268
- Ds 110, Darmstadtium, 271
- Rg 111, Roentgenium, 272
- Cn 112, Copernicium, 285
- Nh 113, Nihonium, 286
- Fl 114, Flerovium, 289
- Mc 115, Moscovium, 289
- Lv 116, Livermorium, 293
- Ts 117, Tennessine, 294
- Og 118, Organesson, 294

Lanthanides:
- Ce 58, Cerium, 140.12, 1.1, [Xe] 4f¹6s²
- Pr 59, Praseodymium, 140.91, 1.1, [Xe] 4f³6s²
- Nd 60, Neodymium, 144.24, 1.1, [Xe] 4f⁴6s²
- Pm 61, Promethium, 146.92, 1.1, [Xe] 4f⁵6s²
- Sm 62, Samarium, 150.36, 1.1, [Xe] 4f⁶6s²
- Eu 63, Europium, 151.96, 1.1, [Xe] 4f⁷6s²
- Gd 64, Gadolinium, 157.25, 1.1, [Xe] 4f⁷5d¹6s²
- Tb 65, Terbium, 158.93, 1.1, [Xe] 4f⁹6s²
- Dy 66, Dysprosium, 162.50, 1.1, [Xe] 4f¹⁰6s²
- Ho 67, Holmium, 164.93, 1.1, [Xe] 4f¹¹6s²
- Er 68, Erbium, 167.26, 1.1, [Xe] 4f¹²6s²
- Tm 69, Thulium, 168.93, 1.1, [Xe] 4f¹³6s²
- Yb 70, Ytterbium, 173.04, 1.1, [Xe] 4f¹⁴6s²
- Lu 71, Lutetium, 174.97, 1.1, [Xe] 4f¹⁴5d¹6s²

Actinides:
- Th 90, Thorium, 232.04, 1.1, [Rn] 6d²7s²
- Pa 91, Protactinium, 231.04, 1.1, [Rn] 5f²6d¹7s²
- U 92, Uranium, 238.03, 1.2, [Rn] 5f³6d¹7s²
- Np 93, Neptunium, 237.05, 1.2, [Rn] 5f⁴6d¹7s²
- Pu 94, Plutonium, 244.08, 1.2, [Rn] 5f⁶7s²
- Am 95, Americium, 244.06, 1.2, [Rn] 5f⁷7s²
- Cm 96, Curium, 247.07, 1.2, [Rn] 5f⁷6d¹7s²
- Bk 97, Berkelium, 247.07, 1.2, [Rn] 5f⁹7s²
- Cf 98, Californium, 251.08, 1.2, [Rn] 5f¹⁰7s²
- Es 99, Einsteinium, 252.08, 1.2, [Rn] 5f¹¹7s²
- Fm 100, Fermium, 257.10, 1.2, [Rn] 5f¹²7s²
- Md 101, Mendelevium, 258.10, 1.2, [Rn] 5f¹³7s²
- No 102, Nobelium, 259, [Rn] 5f¹⁴7s²
- Lr 103, Lawrencium, 262.11, [Rn] 5f¹⁴6d¹7s²

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