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THE NATIONAL COUNCIL FOR UPPER SECONDARY EDUCATION

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EXTRACTS FROM

THE UPPER SECONDARY SCHOOL CURRICULUM

Part 3a

SYLLABUSES FOR BRANCH SUBJECTS

THE GENERAL AREA OF STUDY

Georg-Eckert-Institut
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THE NATIONAL COUNCIL FOR
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The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry should be supported by a valid receipt or invoice. This not only helps in tracking expenses but also ensures compliance with tax regulations.

In the second section, the author provides a detailed breakdown of the company's revenue for the quarter. It includes a comparison between actual performance and the budgeted figures, highlighting areas where the company exceeded expectations and where it fell short.

The third section focuses on the company's financial health and liquidity. It analyzes the current cash flow and identifies potential risks that could impact the company's ability to meet its short-term obligations. Recommendations are provided to mitigate these risks and improve overall financial stability.

Finally, the document concludes with a summary of the key findings and a forward-looking statement. It expresses confidence in the company's ability to continue its growth trajectory while maintaining a strong financial foundation.

Foreword

Recommended syllabuses for the General area of study

The syllabus in Part 3a has been approved by the Ministry of Church and Education for use from the school year 1976/77 in 1-year and 2-year foundation courses and in advanced courses.

In accordance with §5 of the law, the syllabuses are recommendations only; there is therefore the possibility of variety of choice, and of differences of emphasis and detail. There is reason to emphasise this difference from earlier teaching syllabuses. The new syllabus should not be seen as a set of minimum requirements, but as a framework within which material may be chosen.

In revising the 2nd edition, an attempt has been made to take into consideration the requirements of the preamble to the Act as regards ecological understanding and international responsibility. However, the number of changes to the syllabus are few.

The sections on assessment in the syllabuses include recommendations on how continuous assessment of a pupil's achievement should be conducted. Decisions on examinations -- e.g. in which year examinations should be taken -- are given in separate examination regulations and in official circulars.

Oslo, March 1976

Ministry of Church and Education

Georg-Eckert-Institut
für internationale
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(This booklet contains only extracts from the upper secondary school curriculum part 3a, and the numbers of the paragraphs refer to the Norwegian original.)

INFORMATION ABOUT THE GENERAL AREA OF STUDY

1 MAIN STRUCTURE OF THE GENERAL AREA OF STUDY

The curriculum consists of three main parts:

- 1 Common core subjects
- 2 Branch subjects
- 3 Optional subjects

The general area of study is so constructed that pupils have a first year in common -- the foundation course -- which consists for the most part of common core subjects. From the second year -- the advanced course -- pupils may choose a "branch" within the area of study. This area of study has four such branches: natural sciences, social studies, languages and music.

The general area of study is so designed that education may proceed over three years in continuous progression, but at the same time the pupil may finish after one, two or three years.

To obtain a certain weight of specialisation in his education, the pupil is required to take a certain number of periods in one and the same branch in the 2nd and 3rd years. Apart from this, the pupil may select subjects from other branches, or optional subjects. For pupils who follow courses in the area of study over two or three years, certain subjects have to be studied for more than one year. Similar requirements are made to ensure a certain depth of study within a subject area and to prevent an over-wide spread of subjects.

To assist pupils following the general area of study over three years with the selection of their study area, it has been considered advisable to suggest some minimum combinations of subjects within the different branches in the 2nd and 3rd years. With regard to optional subjects, the pupils are relatively independent, but two periods in the 1st year must be spent on an aesthetic or practical subject. For the principal guidelines to the structure of the upper secondary school, general goals, working methods, assessment, etc., see The Upper Secondary School Curriculum, Part 1.

2 DISTRIBUTION OF SUBJECTS AND PERIODS

The main rule is that pupils in the general area of study should receive at least 30 periods of teaching per week. Some variation may be accepted after due consideration. During the three years, a certain number of periods are set aside for common core subjects.

Furthermore, pupils have to take at least 15 periods of branch subjects during the 2nd and 3rd years.

The school week should be laid out over more than 30 periods. If, for instance, a school week of 35 periods is chosen, the pupils will then have a certain number of periods for private study and/or a free period in the middle of the day. Such a school week will provide greater flexibility. It is not necessary for pupils to take exactly 30 teaching periods per week every year. The number of periods may vary from year to year according to the wishes of the pupil or the school, but the pupil must take at least 90 periods of teaching over 3 years.

FOUNDATION AND ADVANCED COURSES
(45 MINUTE MODEL)

	1st	Year 2nd	3rd
<u>Common core subjects:</u>			
Norwegian	4	5	5
Religion	0	2 (1)	1 (2)
A-language (= English)	4	3	-
B- or C-language	4	3	
Social studies (geography, history, social science)	3	3	5
Natural sciences (chemistry biology, physics)	5	-	-
Mathematics	5		
Physical education	3	2	3
Total periods for common core subjects	28	18 (17)	14 (15)
Branch subjects and Optional subjects	2*	12 (13)	16 (15)
Total periods at least	30	30	30

* Periods used for aesthetic/practical subjects.

A B-language is the language which the pupil has studied in the 9-year basic school in addition to English. The pupil is given the opportunity of choosing a new foreign language, a C-language, in the 1st year instead of the B-language.

The general area of study has four branches. (Music not listed here.) Subjects within the different branches are distributed as follows:

Natural science branch

Subject	Year		
	1st	2nd	3rd
Physics	-	5	5
Chemistry	-	3	5
Biology	-	3	5
Mathematics	-	5	5
English	-	-	3

Social studies branch

Subject	Year		
	1st	2nd	3rd
Social science	-	5	5
Economics	-	(5 3 (5)	8) 5 (2)
Business economics	-	5	8
Law	-	0 (2)	4 (2)
History	-	2 (0)	0 (2)
Mathematics	-	5 (2)	5 (3)
English	-	-	5

Language branch

Subject	Year		
	1st	2nd	3rd
Linguistics	-	3	0
A-language (= English)	-	3	5
B- or C-language	-	2	5
C-language	-	5	5
Latin	-	8	8
Old Norse/Icelandic	(4 -	5 3	5) 5

A- and B-languages which are common core subjects have the following numbers of periods: 4-3-0. For pupils who choose the language branch with an A- or B-language, the school may choose to combine the three periods in the 2nd year with the periods of the advanced course. The total number of periods in the A-language will then be 6 in the second year, of which only 3 will be counted as part of the branch subject. The total number of periods in the B-language will be 5 in the 2nd year, of which only 2 count towards the special branch subject.

Optional subjects

For optional subjects, see the "Upper Secondary School in Norway".

3 COMBINATIONS OF SUBJECTS

Rules for choosing branch subjects

In the general area of study, pupils may choose to deepen their studies in the Natural science branch, social studies branch, language branch (or music branch). This deepening, specialisation or division of branches begins in the second year.

In the natural sciences, the main emphasis is on two or more of the following subjects: mathematics, physics, chemistry, biology. In social studies, study-in-depth is within two or more of the following: business economics, social science, economics, mathematics, history and law. In languages, there are a number of possibilities among modern and classical languages.

In order for the study-in-depth to have the necessary weight, certain requirements are attached to combinations of subjects within the branch:

- 1 Each pupil must choose at least 15 periods of subjects within his branch. However, the pupil is encouraged to choose more than the minimum, so as to achieve greater in-depth study.
- 2 In fulfilling the minimum requirement of 15 periods, the pupil must choose at least two subjects within his branch of study. An exception is the course in Latin which alone has 16 periods.
- 3 Some combinations of subjects are fixed. The pupil must follow two one-year courses in at least one subject within his branch of study. This does not prevent the pupil from taking courses for two levels concurrently, something which may be particularly relevant for pupils following a 2-year foundation course who choose a 3rd year with emphasis on common core subjects. (See subject and period distributions for the various areas of study.)

SYLLABUSES FOR NATURAL SCIENCE SUBJECTS

PHYSICS

1 GENERAL INFORMATION

There are two one-year courses in physics, each of 5 periods per week. They proceed from the general science course (1NA).

The abbreviations 2FY and 3FY are used below for the following courses.

2FY is normally studied in the 2nd year, but may also be read in the 3rd year by pupils who did not take the course in the 2nd year.

3FY is studied in the 3rd year by pupils who have taken 2FY. It is possible to read both 2FY and 3FY in one year. The syllabus is so designed that the two courses combined give a more complete introduction to the subject.

It is assumed that all those who choose physics will also study the 5-period course in mathematics (2MN) in the 2nd year.

Two alternative syllabuses have been worked into this curriculum, syllabuses A and B, of which syllabus A is based on freedom of materials selection, among other things. Syllabus B largely corresponds to the syllabus for sciences in the former grammar school system.

2 AIMS

The pupils should:

- gain an introduction to the concepts and ways of thought of physics, and knowledge of important theoretical concepts, laws and theories,
- gain an understanding of - and some practice in - the methods and techniques of physics, making clear that physics concerns nature and actual phenomena, that the only "answer" is nature itself,
- gain knowledge of and practice in the use of the most important measuring apparatus,
- gain experience in the interpretation and presentation of data and information (tables, histograms, graphic presentations, etc.),
- experience the way in which knowledge and understanding of physics forms an important part of our culture, both

because science and technology underpin our standard of living, and for the importance which the natural sciences have had for historical development and philosophical thought,

- increase their interest in physics problems and be in a position to identify a problem on one's own and find an answer through independent investigation (experiments, literature),
- lay a foundation in the subject for further study
- as far as possible build a foundation for work with other subjects.

3 SYLLABUS TOPICS

3.1 Consequences these aims have on the selection of material

As the natural sciences are in the process of rapid development, and as the number of periods available is relatively limited, a too "encyclopaedic" study, characterized by a wealth of detail, would tend to prevent a study in depth. Obviously, certain choices have to be made. Topics should preferably be centred round fundamental concepts, e.g. those which account for nature's structure, such as molecules, atoms, waves, and electrons, and those which are valuable for describing change and interaction, such as energy, momentum, and charge.

Although the areas of research interest have altered, scientific procedures and methods are relatively unchanged, and should provide a key to the working methods on which the school subject should be based.

The list of topics is advisory in the sense that only the main points of the subject content have been given. It is assumed that opportunities will be found for in-depth study of some of this material.

3.2 List of topics

3.2.2 (A) First one-year course (2FY), syllabus A

Core material

Mechanics: The basic concepts of length, time and mass. The SI system. Quantity and quantity equations. Movement equations. Newton's laws. Vectorial representation of the laws of movement, their application to ejection and circular movement. Friction, work, energy, effect, momentum. The law of gravitation. Pressure in liquids and gases.

Thermophysics: Temperature. Expansion. Inner energy. Heat. The first law of thermodynamics. Heat capacity of liquids and solid matter. Phase exchange. Heat of fusion and vaporization. The properties of gases. Kinetic theory of gases. Avogadro's hypothesis. The heat capacity of gases. Isothermal and adiabatic processes. Diagram of state.

Electricity: Coulomb's law. Electric field and potential. Fundamentals of capacitance. Electric current. Ohm's law. Transformation of energy. Fundamentals of emf. Coupling of elements and resistances.

Exercises: At least 8 exercises, including elementary uncertainty calculations.

Suggested optional material

Mechanics: Statics. Rotation. Mechanics in liquids and gases. The mechanics of space travel.

Thermodynamics: Surface film. Osmosis. Diffusion. An outline of the second law of thermodynamics.

Electricity: Bridge couplings. Electrolysis. Galvanic elements. Contact voltage. Thermocouple.

Exercises: Several exercises or a major theoretical or experimental work.

3.2.2.A Second one-year course (3FY), syllabus A

Core material

Electromagnetism: Magnetic field (Permanent magnets and conductors). Charge carriers in a magnetic field. Electromagnetic induction. The elements of inductance. Alternating current. Fundamentals of electromagnetic waves.

Waves: Harmonious oscillations. Waves. Reflection. Interference. Physical optics. Stationary oscillations. Resonance.

Modern physics: Bohr's atom model. And outline of the quantum theory. Planck's constant. Energy levels and energy transitions. Radioactivity. Fission. An introduction to the relativity theory.

Exercises: Minimum 8 periods of exercises, including uncertainty calculations.

Suggested optional material

Electromagnetism: Measuring instruments. Transformer. Ferromagnetism. Electric oscillators. Electrons in vacuum tubes. Semiconductors. Electronic components.

Application of e.g. oscilloscope, amplifiers, radio, television.

Waves: Acoustics. Geometrical optics.

Modern physics: The effects of modern physics on cognition and philosophy. The biological effects of radiation. Accelerators. An outline of nuclear physics and physics of elementary particles. Nuclear energy. The elements of laser theory.

Astrophysics: Fusion processes. Development of stars and star types. White dwarfs. Pulsars. Neutron stars. "Black holes". Cosmic radiation. Quasars. Cosmological theories.

Exercises: Several exercises, preferably including uncertainty calculations and elementary statistics. A major theoretical or experimental work.

List of topics:

3.2.2.B First one-year course (2FY), Syllabus B

Mechanics: Measures of length, time, mass and force. Relations between quantities, units and dimensions equations; possible errors.

Velocity and distance as a function of time at constant speed and acceleration. The equations of movement. The laws of free fall.

Scalar quantities and vectors. Addition, subtraction and decomposition of vectors, illustrated with examples from physics.

Vertical, horizontal and sloping ejection.

Inert mass and heavy mass. Newton's laws of movement. Specific mass, density and relative density of solid matter and liquids. The SI system.

Work, effect and energy. Mechanical forms of energy.

Friction. Friction work. Friction and rolling resistance.

Static moment. Point of gravity.

Pressure in liquids and gases. Buoyancy. Air pressure.

Heat: The concept of temperature. Scales of temperature. Expansion of solid matter and liquids when heated. Changes in density.

Heat as transport of energy. Heat capacity.

Calorimetry. Melting and freezing. Melting temperature. Melting point and pressure. Evaporation and boiling. Some remarks on saturated and unsaturated vapour. Heat of vaporization. The laws of gases. Boyle - Mariotte's law. Gay-Lussac's laws. Dalton's law.

The equation of state. Absolute temperature. The dependence of density on temperature and pressure.

Kinetic theory of gases. Ideal gas. The equation of state. Avogadro's law.

Kinetic energy of molecules and gas pressure. The kinetic energy of molecules and temperature. Inner energy.

The relation between work and heat. The work of gases under changes in volume. Isothermal and adiabatic processes. The first law of thermodynamics. The heat capacity of gases.

Electricity: Electrostatics. Forces between electrical charges. The electroscope. Conductors and insulators. Polarization. Influence. Distribution of charge on a conductor. Coulomb's law. The electric field. Field strength. Field lines. Work and potential energy in a homogeneous field. Potential and voltage. Equipotential surfaces. Electric current. Sources of electricity. Units of electric current and electrical quantity. Kirchhoff's first law. Measuring electric current.

Joule's law. Voltage. Ohm's law. Resistance. Coupling of resistances. Kirchhoff's second law. Coupling of elements. Measuring resistance. Electric work and effect.

Exercises: At least 8 exercises, each corresponding to one period's work. Instead of one such exercise, several shorter exercises could be carried out.

3.2.2.B Second one-year course (3FY), Syllabus B

The law of maintenance of momentum.

The point of mass middle. Elastic and inelastic collisions.

Circular movement at constant speed. The relation between acceleration and centripetal force.

The law of gravity. The gravity field round the Earth. Work and potential energy in the gravity field. Reference systems. Inertial forces in accelerating systems.

Linear harmonic oscillations. Oscillation energy.

Waves, sound, light: Wave movement. Waves in a row of particles. Transversal and longitudinal waves. Overcharging. Reflection.

Standing waves. Natural vibration.

Surface waves in water. Reflection. Refraction of waves going from deep to shallow water. Interference of waves from two coherent points. Inflection of waves going through an opening. Huygen's principle. Sound, source and properties. Intensity, frequency, colour. Oscillations in strings and air columns.

Resonance. The speed of sound in gases and solid matter.

Light. The speed of light. The laws of reflection. Plane mirror. The laws of refraction. Refraction in prisms.

Total reflection. Optical density.

Lenses. Construction of pictures. The formula of lenses.

Light as a movement of waves. Comparison with waves in water. Young's interference experiment. Diffraction of colours. The colours of bodies.

Electricity and magnetism: Contact voltage. Thermal electricity. Conduction in liquids. Faraday's laws. Electro-motorical voltage. Galvanic polarisation. Transformation of energy by electrolysis. Conduction in gases.

Magnetism. Permanent magnets. Coils. The magnetic field around a conductor. The field in a coil. The influence of magnetism on a straight conductor in a magnetic field. Magnetic force and magnetic flux density. The force between parallel conductors. Iron in a magnetic field. Permeability. Electrical measuring instruments. The magnetic field of the Earth.

The paths of particles in a magnetic field and an electric field. The oscilloscope. The mass spectrograph.

The condenser. Capacitance. Dielectricum. Permittivity.

The laws of electromagnetic induction. Self induction. Self inductance.

Alternating current in a circuit which only contains resistances. Effective current and voltage.

Electric oscillations and electromagnetic waves in simple qualitative form.

Relativity theory. Relativistic length, time and mass. Energy and mass.

Waves and particles. The photoelectric effect. Einstein's interpretation.

The mass and momentum of the photon. Matter waves.

Quantum mechanics. X-rays.

Rutherford's atom model. Bohr's postulates. Energy levels and spectral series. Emission spectra. Absorption spectra. The solar spectrum.

Nuclear physics. The cloud chamber. Radioactivity. The Geiger counter. Half-life. Radioactive series. The atom nucleus. The neutron. Isotopes. Mass and energy of the atom. Mass defect. Binding energy.

Nuclear reactions. Artificial radioactivity. Fission. Chain reactions. Uranium reactors. Fusion. Solar energy. Cosmic radiation.

Exercises: See 2FY.

4.4 Co-ordination of subjects

Physics is a subject which requires application of mathematics to a higher degree than most other sciences. Presentation of physics at the upper secondary school level requires that the pupils possess a certain basic knowledge of elementary trigonometry, vector calculation and calculus.

A pupil who chooses 2FY should preferably have acquired a certain knowledge of mathematics, either before the course starts, or as early as possible during the school year.

The pupils should then be able to:

write and calculate by means of figures expressed by exponentials with base 10 (e.g. $6.4 \cdot 10^7$)

solve algebraic equations with several unknowns,

solve quadratic equations,

understand and use the symbols \ll , \gg , \approx , \propto or \sim (proportional to),

apply sine x , cosine x and tangent x for acute angles, apply

elementary vector calculation: addition and subtraction,

carry out decomposition into orthogonal components,

scalar product,

transfer information between graphical, numerical,

algebraic or verbal form,

possess a certain knowledge of derivation and its geometrical interpretation.

At a later stage, especially with regard to 3FY, the pupils should be able to:

apply extended trigonometrical functions as well as ordinary trigonometrical formulas,

understand and use the following symbols:

Σ (summation), \equiv (identity),

\int , \int_a^b , $\frac{d}{dx}$, $\frac{d^2}{dx^2}$, ∞ , \bar{x} (average value),

know the geometrical interpretation of the definite integral, and be able to integrate elementary functions,

know the functions e^x and $\ln x$,

apply elementary functions in parametric form.

Physics is a tool for other sciences. For this reason 2FY includes some of the basic topics within thermodynamics and electricity. It should be possible to select optional material in such a way as to give support to other subjects.

Pupils or classes who take a particular interest in biology could focus their attention on the physics of the sense organs, especially the eye and the ear. Other such areas of study could be temperature regulation in the human body, and heat insulation in animals. Radiation could be studied within the framework of biology. Physics could also be a considerable asset during studies in ecological problems (e.g. nuclear power stations). The methodological guide contains references to relevant literature.

Emphasis on acoustics would be a natural choice for pupils who are interested in music. Topics of interest might be e.g. the acoustic properties of various instruments, (resonance figures, overtones), sound absorption, standing waves and interference, flutter. Other suitable topics are electronic music and amplification.

Pupils who are interested in athletics might profitably focus on a number of topics in the field of mechanics, such as:

- Work, effect, transformation of energy in various branches of athletics.
- Acceleration (e.g. in skating and running).
- Point of gravity (e.g. in high jumping, pole vault and weight lifting).
- Energy (e.g. in pole vault, ski jumping and skiing).
- Slanting ejection (e.g. in long jump, high jump, throwing, playing with a ball).
- Friction (e.g. in skating and skiing).
- Circular movement, inertial moment (e.g. in discus throwing, hammer throwing and figure skating).

The methodological guide contains literature references and suggestions for further study of the topics mentioned.

5. ASSESSMENT

Pupils will receive a grade for achievement at the end of 2FY and another grade for achievement at the end of 3FY.

Grades will be given on the basis of the pupil's overall achievement. Emphasis should be placed on theoretical insight as well as practical work in the subject. Workbooks on the pupil's experiments and reports of practical or theoretical work undertaken by the pupil should also be taken into account.

Tests should be both written and oral, and should be designed in accordance with the kinds of classwork that have been given. As far as possible, the form of the tests should further all aspects of the subject's aims. The pupils' insight and understanding should be tested as well as their factual knowledge. In the same way, weight should be placed on the pupil's ability to evaluate and draw conclusions from his observations, and to see relationships between phenomena. As far as possible, the tests should form a natural part of the teaching.

The same guidelines apply to examinations as to tests throughout the year.

The examination in 2FY tests only those topics which have been covered in the course.

The examination in 3FY covers all topics in the Physics section of the natural science course, plus all topics in 2FY and 3FY.

At the oral examination, reports of the obligatory practical work in both 2FY and 3FY will be presented, and questions may be asked on the practical work.

Specific to syllabus A:

For the written examination, questions should be taken from the core material only.

The oral examination should cover both the core material and the optional material.

Reports of practical and theoretical work which a class/group/candidate has undertaken should be presented at the oral examination, and may serve as a basis for the examiners questions.

C H E M I S T R Y

Course of 3 periods per week

1 GENERAL INFORMATION

The course is one of the branch subjects in the natural science branch. It consists of 3 periods a week and proceeds from the chemistry section of the natural science course, which is studied in the 1st year.

The course is self-contained, but constitutes also the foundation for an advanced course unit of 5 periods a week, which is studied in the 3rd year. Together, the two courses form an 8-period branch subject.

2 AIMS

The pupils should acquire:

- insight into and understanding of the subject, sharpened observation, and training in the critical assessment of the experiments which are performed,
- a certain degree of training in the use of standard chemical laboratory equipment,
- some familiarity with the periodic table of the elements and knowledge of important chemical theories and laws, and through this an overall picture and understanding of the chemical properties of some common elements
- understanding of compounds such as building blocks in living organisms, and that chemical reactions constitute the foundations of life processes.

2.1 Comments on Aims

Teaching in the 3-period course in chemistry should develop those principles on which the chemistry section of the natural science course was based. The pupils' knowledge, insight and understanding should, however, be expanded, and the pupils must be given the opportunity to work more independently.

3 SYLLABUS TOPICS

3.1 How the aims affect the selection of material

In order that the teaching of chemistry may achieve its goals, it should include topics from both general, organic and inorganic chemistry. Some of these topics should be studied in depth, e.g. the periodic table of the elements, the theory of chemical bonds, oxidation and reduction reactions and chemical equilibrium. Within the main areas mentioned above, some topics must be approached through experiments and demonstrations. The material for study should be sufficient to form a basis for elementary exercises in calculation and problem solving, and should, to the highest possible degree, be related to the chemistry of everyday life.

3.2 List of topics

General Chemistry

Extensive treatment of atoms and bonds

- covalent bonds and the spacial structure of simple molecules
- polarity and dipoles
- ionization energy
- electron affinity
- electronegativity
- ionic bonds
- forces between molecules
- metallic bonding

An outline of aggregate states

Quantitative relations by chemical reactions

- mass and quantity, the unit "mole"
- ratio of volumes by gas reactions
- stoichiometry
- concentration in solutions

Energy relations by chemical reactions

Rate of reaction and catalysis

Chemical equilibrium

- equilibrium in homogenous systems such as gases and water
- the law of mass action, with examples
- protolytic equilibrium in water solutions
- the pH concept, pH calculation, pH determination

Oxidation and Reduction

- reduction, oxidation and oxidation states, in general outline
- usual oxidizing and reducing agents
- electromotive series

Organic chemistry

Classification according to functional groups

- hydrocarbons (saturated and unsaturated)
- alcohols (primary, secondary, tertiary, monovalent and multivalent)
- aldehydes, ketones, carboxylic acids and esters (including some basics about fats)
- amino acids and proteins
- carbohydrates

Inorganic Chemistry

A brief presentation of the following elements and their compounds:

- non-metallic elements
hydrogen, the noble gases, the halogens, oxygen, sulphur, nitrogen, phosphorus and carbon
- metallic elements
sodium, potassium, magnesium, calcium, aluminium, copper, silver, zinc, mercury, iron, tin and lead

Exercises: At least 12 exercises, each corresponding to one period's work.

5 ASSESSMENT

The pupils will receive a grade for achievement at the end of the course.

The grade should be based on the pupil's overall achievement. Emphasis should be placed on theoretical insight as well as practical work in the subject. The pupils' written reports of practical work should also be taken into consideration.

Tests may be written and oral and can also comprise laboratory work. They should reflect the working methods used. As far as possible, the form of the tests should further all aspects of the subject's aims. They should reflect the pupil's insight and understanding to the same extent that they test factual knowledge. In the same way, emphasis should be placed on a pupil's ability to evaluate and draw conclusions from observations and to see relationships between phenomena. As far as possible, the tests should form a natural part of the instruction.

A laboratory test should be given at the end of the year before the final assessment is made.

Reports of practical or theoretical work which a class/group/candidate has undertaken, should be presented at the time of the examination, and may serve as a basis for the examiners questions.

C H E M I S T R Y

Course of 5 periods a week

1 GENERAL INFORMATION

The course is one of the branch subjects in the natural science branch. It consists of 5 periods a week, and is a continuation of the 3-period course. As these two together constitute an 8-period course, the 5-period course can only be chosen on the basis of the 3-period course.

2 AIMS

The pupils should:

- acquire knowledge of the theoretical fundamentals and experimental methods which underlie the topics below,
- receive practical training in simpler chemical laboratory work and training in the use of source material (both purely technical and other sources),
- develop their ability to work systematically and independently.

2.1 Comments on Aim

The most important purpose of the course is that the pupils should acquire a deeper understanding of and insight into the topics covered in the first two years.

By using different methods in teaching, e.g. groupwork, discussions, project work, independent work in the laboratory and self study, the pupil is given training in working systematically and independently.

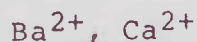
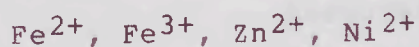
3 SYLLABUS TOPICS

3.2 List of Topics

Core material

Qualitative inorganic analysis may be limited to the following ions:

Cations:



Anions:



Theory: ionic product
solubility-product
complex formation
buffered solutions
oxidation and reduction

Quantitative inorganic analysis

Gravimetric analyses.

Examples: Determination of crystal water, thermal fission of hydrogen carbonate, carbonate and chlorate

Precipitation of e.g. AgCl , Ag_2CrO_4 , BaSO_4 , CaSO_4 , MgNH_4PO_4

Theory: stoichiometric calculations
solubility product

Titration analysis:
Titration of acids and bases
Precipitation titration
Oxidation-reduction titration

Theory: titration curves
indicators
more complex oxidation reduction reactions
(manganometry, iodometry and systems comprising chromate or dichromate)

Qualitative organic analysis

Analysis of elements:

carbon
hydrogen
nitrogen)
chlorine) (demonstrated by teacher)

Testing for saturation/unsaturation

Testing for functional groups:

hydroxyl
carbonyl (aldehydes, ketones)
amine

Theory: characteristics of the functional groups

Organic syntheses

Examples: alcohols
aldehydes
ketones
amines
carboxylic acids
esters
halogen substituted hydrocarbons
plastics

Theory: The most important types of organic reaction:

addition
substitution
elimination
free radical reactions
oxidation

Such reactions could be condensation, hydrolysis and polymerizing.

Radioactivity

An outline of natural and artificial radioactivity

Electrochemical processes

electrolysis
galvanic elements

Optional topics

Qualitative analysis:

analysis based on an extended analysis table
Determination of elements in test objects found in nature

Quantitative analysis:

analysis of drinking-water
analysis of seawater
determination of acids in mixtures
determination of solubility product
determination of iron in a steel alloy
calorimetry

Separation:

fractioned distillation of crude oil
ion-exchange
chromatography
sublimation
extraction

Organic chemistry:

Further study of one or several groups of organic matter,
e.g. carbohydrates, carboxyl acids, amines, etc.
topics from biochemistry
topics from stereochemistry

Physical chemistry:

spectroscopy
radioactivity
rate of reaction
topics from electrochemistry
osmosis
further study of bonds

Energy transformation by chemical reactions (calorimetry)

Examples: neutralization of acids and bases
oxidation-reduction reactions
precipitation reactions

Determination of molecular weight:

Victor Meyer's method
boiling-point elevation
freezing-point depression

Industrial chemistry:

petrochemistry
plastics
woodpulp
fertilizers
edibles
detergents
paints
electrometallurgy

Chemicals as pollutants

Exercises: At least 30 exercises, each corresponding to one
period's work

5 ASSESSMENT

The pupil receives a grade for achievement at the end of the course.

The grade is given on the basis of the pupil's overall achievement. Emphasis should be given to theoretical insight as well as practical work in the subject. The pupils' written reports of practical work should also be taken into consideration.

Tests may be both written and oral and may also comprise laboratory work. They should relate to the working methods which have been used. As far as possible, the form of the tests should further all aspects of the subject's aims. They should aim to bring out the insight and understanding which the pupils have acquired, as much as checking factual knowledge. Emphasis should likewise be placed on testing the pupil's ability to evaluate and draw conclusions from observations, and see the relationships between phenomena. As far as possible, the tests should form a natural part of the teaching.

A laboratory test should be given at the end of the year, before the final assessment is made.

The examination covers all topics in the Chemistry section of the natural science course, and all topics which belong to 2KI and 3KI.

Reports of practical or theoretical work which a class/group/candidate has undertaken should be presented at the time of the examination, and may serve as a basis for the examiners questions.

B I O L O G Y

3-period course, 2BI

5-period course, 3BI

1 GENERAL INFORMATION

The subject of biology comprises two courses - one of 3 periods a week and one of 5 periods a week. The 3-period course is self-contained, but at the same time it forms the foundation of the advanced course of 5 periods a week. Normally the first course, 2BI, will be studied in the second year and the 5-period course, 3BI, in the third year. Pupils who studied no biology in their second year should be offered 2BI in the third year.

The teaching proceeds from the natural science course. A certain minimum knowledge of natural science must therefore be required of a pupil if he is to choose biology as a branch subject. In order to be able to choose the more advanced course in biology, 3BI, a pupil must have completed the 3-period course in biology, 2BI.

2 AIMS

The pupils should:

- acquire a deeper insight into biology, its scientific methods, theories, and philosophical roots,
- strengthen their interest in biological approaches to problems,
- acquire a deeper knowledge of the manifestations of life and their physical and chemical foundations,
- increase their knowledge of the species through training in distinguishing plants and animals,
- gain understanding of the importance of biology in assessing individual and social problems,
- realize that organisms depend on each other and on non-biological conditions,
- develop a sense of responsibility for the environment and respect for all living things,
- understand the effects which encroachment on nature may have.

3 SYLLABUS TOPICS

3.1 How the aims affect the selection of material

The choice of material should make it possible to draw attention to the interfaces between biology and other subjects. In this way, the interest of the pupils may be stimulated, enabling them to follow current scientific debate. It would be natural that work to develop the pupils' knowledge of species can take as its starting point the flora and fauna of the school area.

The aims of the subject provide a natural division into core material and optional material.

The framework for core material and suggestions for additional optional material are given in the List of Topics. Approximately 1/6th of the total periods in 3BI should be used on optional material. In 2BI, it will only be possible to study extra material to the extent that the individual teacher can make time for it. When choosing additional material, the pupils' interests, the geographical location of the school, the school's equipment and the teacher's professional qualifications should be taken into account. The time at which optional material is studied will have to be decided in relation to local conditions.

2BI

Topics should be so selected as to give a general introduction to the subject, as well as forming a basis for 3BI.

To meet the requirements arising from the aims in the subject, the pupils should be given a fairly broad introduction to the structure of plant and animal organisms with special reference to functional aspects. This introduction could profitably be related to various species.

To clarify the main streams of evolution, it will be necessary to give a taxonomic survey of the vegetable and animal kingdoms as a supplement. The survey should consist of short commentaries on the groups with which pupils are likely to come into contact.

Some insight into the rules of nomenclature will give the pupils a basis for taxonomy.

All pupils who choose an advanced course in biology should have knowledge of evolution and its theories.

3BI

In this course the core material should be widened and knowledge from the natural science course and 2BI deepened. To build up a complete biological outlook it will also be necessary to deal with topics which have not previously been considered.

An understanding of the relationships between life processes and their physical and chemical foundations requires an increased insight into physiology and modern theories of heredity.

Sections of general physiology should be presented in a biochemical context. When dealing with the physiology of the organs, the main emphasis should be on the human body and its functions.

Energy conversion - both within the individual organism and in the living world as a whole - should be given wide coverage. Both here and elsewhere it will be natural to bring in ecological points of view.

The pupils' knowledge of biology may be usefully exploited to enable them to solve current problems in our society.

3.2 List of Topics

CORE MATERIAL

2BI

Main botanical and zoological taxa

Each taxon will be treated with a view to morphology, anatomy and physiology. The functions of life should be studied with the relations between function, life and environment in mind, and with particular emphasis on the following topics:

- movement
- ingestion, waste products in the form of gases, liquids and solid matter
- excretion
- irritability
- propagation
- growth and cellular differentiation
- species in their environment

The presentation of a taxon should comprise typical species, as well as its distribution in the past and present.

Evolution

Theories and their basic premises

Additional material for cursory study

A survey of the animal and vegetable kingdoms, phylogeny

3BI

CYTOLOGY

The structure and function of the organelles of the cells

Genetics

- The laws of heredity
- Coupling and crossing over
- Interactions between genes
- Multiple alleles
- Sex-linked inheritance
- Mutations (gene mutations, changes in chromosome structure)
- Population genetics
- The concept of species and the evolution of species
- Inheritance and environment
- Refinement of plants and domestic animals
- Inheritance in humans
- The chemistry of genes and their reproduction
- Protein synthesis
- Virus

GENERAL PHYSIOLOGY

- Transport of matter (diffusion, osmosis, active transport)
- Enzymes
- Ingestion in the various organisms
- Photosynthesis (dependence on external factors, biochemistry)
- Cellular respiration (anaerobic and aerobic respiration, biochemistry)
- Hormones

HUMAN PHYSIOLOGY

- Blood (components, function, blood types)
- Immunity reactions
- Excretion
- The nervous system (the central nervous system, the autonomic nervous system, the impact of poisons on the nervous system, drug addiction)
- Sensory organs (organs of sight, smell, taste, hearing and balance)
- Endocrinology (examples of hormones, menstrual period, the physiological mode of operation of contraceptive pills)

ECOLOGY

- Ecological systems: The study of at least one ecological system should be based on field work
- Distribution of energy in nutritive chains
- Population dynamics
- Ecological succession
- Environmentalism

Suggested optional material

Physiology in relation to work and sport
History of biology
Biology and psychology (ethology and psychology)
Analysis of biotopes
Analysis of productivity class
Biological aspects of food production
Biology in fiction
Biology and aesthetics
History of biological philosophy
Biological/biodynamic farming
The names of plants and animals in various dialects
Physiology of nutrition
Pollution
Spreading of seeds
Marine biology
Human population genetics
Human biology
The physiology of propagation
Medical herbs
Adaption to environment
Paleontology
Parasitism and symbiosis
Geography of plants and animals
The anatomy of plants - growth experiments, ion penetration
The biology of pollination
Resources
Analysis of ecological systems

Extension of one or more topics selected from the core material.

During the two courses, pupils must do practical work corresponding to a minimum of 25 teaching periods. Of these at least 10 periods of work must be part of 2BI.

Pupils in the 5-period course must make a collection of at least 100 biological objects.

5 ASSESSMENT

Pupils receive a grade for achievement on completing 2BI and another grade on completing 3BI.

The grades for both 2BI and 3BI will be based on the pupil's overall achievement. Emphasis should be placed on theoretical insight as well as on practical work in the subject. Reports of practical work, excursions, special reports and collections should also be taken into account.

Tests should be both written and oral and may comprise laboratory work. They should relate to the working methods which have been used. As far as possible, the form of the tests should further all aspects of the subject's aims. Not only factual knowledge, but also insight and understanding should be tested. Emphasis should likewise be placed on the pupil's ability to evaluate and draw conclusions from observations, and to see the relationship between phenomena. As far as possible, the tests should be a natural part of the instruction.

A test based on practical work (laboratory test) should be given at the end of the year before the final grade is decided.

For the examination, the same guidelines apply as for tests during the year. The examination in 2BI covers only topics included in the syllabus for that course.

The examination (written or oral) in 3BI covers the topics in the biology section of the natural science course, and the topics in 2BI and 3BI, - with main emphasis on 3BI.

In the written examination, topics will be taken from the core material only.

The oral examination will cover both core and optional material. Reports of practical or theoretical work undertaken by a class/group/candidate must be presented at the oral examination, and may serve as a basis for questions or for an oral account by the candidate.

M A T H E M A T I C S

1 GENERAL INFORMATION

The teaching of mathematics in the upper secondary school should build on the foundations which the pupils have gained from the basic school.

1.1 The various courses in the general area of study

1st year

5-period course (IMA)

This course is obligatory.

2nd year

5-period course for pupils following the natural science branch (2MN)

This is an obligatory course for pupils following the natural science branch. It is primarily designed for pupils who will continue with the subject of mathematics, but emphasis is also given to topics which are of use in physics, chemistry and biology.

5-period course for pupils following the social studies branch (2MS)

This course is primarily designed for pupils following the social studies branch in the 2nd year. The course can also be organised with two periods in the 2nd year and three periods in the third year.

3rd year

5-period course for pupils following the natural science branch (3MN).

The course is a continuation of the 2MN course.

5-period course for pupils following the social studies branch (3MS).

The course is a continuation of the 2MS course.

OPTIONAL SUBJECTS IN 2ND OR 3RD YEAR

Two-period courses in special mathematical topics such as electronic data processing, differential equations, mathematical logic, descriptive geometry, probability calculus, progressions, complex numbers, matrices and determinants, history of mathematics, theory of conic sections, theory of relativity and mathematics for economists.

1.2 Connections between courses

The syllabus requires that 5-period courses be available in all three years in the general area of study in the upper secondary school. Pupils may finish their study of the subject after the 1st, 2nd or 3rd year.

The 5-period course in the 1st year (1MA) is divided into core material and optional material. Optional material related to vocational courses or particular advanced courses in mathematics may receive increasing emphasis - as the pupils' plans for their future take a more definite shape.

2 AIMS

The pupils should acquire:

- the knowledge and skills necessary for their chosen education and the demands of modern society
- knowledge of fundamental themes and notions in the subject
- understanding of mathematical approaches and mathematical techniques
- understanding of the place of mathematics in the development of science and technology
- the best possible basis for further independent study in the subject.

Comments on the aims

The goals for mathematics teaching will vary somewhat, depending on the educational path which the pupils have chosen. Other subjects in the upper secondary school will therefore affect the choice and ordering of topics. When mathematics is to be presented as an applied subject, or as a tool, this may be done by taking examples from different areas where mathematics is used. Topics should primarily be selected with a view to subjects which use mathematics as a tool.

The upper secondary school should also enable the pupils to meet the requirements of further studies in this and related subjects. These requirements will therefore strongly influence the choice of topics.

However, the pupils should also learn to take pleasure in working with mathematics and to realise that this subject can be of value in itself.

3 SYLLABUS TOPICS

3.2 List of Topics and comments on courses

3.2.1 5-period course (1MA) in the 1st year

The course assumes knowledge of the mathematics taught in the 9th year of the basic school.

A. CORE MATERIAL

1 Arithmetic and algebra

Calculation with fractions. Complex fractions
Calculations with polynomials. Factorial polynomials
Simplification of rational functions
First-order equations and quadratic equations

First-order equations with two unknowns

Inequalities of the first and second order
Exponentials in which the exponents are real numbers.

Numbers written in standard notation

An introduction to rational, irrational and real numbers.

Intervals

Square roots. The axioms $\sqrt{ab} = \sqrt{a} \cdot \sqrt{b}$ and $\sqrt{\frac{a}{b}} = \frac{\sqrt{a}}{\sqrt{b}}$

Simple and irrational equations

2 Functions

The concept of a function

Empirical and algebraic functions

Open sets which a) define functions, b) do not define functions

Ordered pairs of numbers. Co-ordinates

The graph of functions and relations (The graph of equations and inequalities)

Functions represented by the equations $y = ax + b$ and

$$y = \frac{ax+b}{cx+d}$$

Horizontal and vertical asymptotes

Quadratic functions, factorials, maximum and minimum

Solution of equations by means of graphs, sets of equations and inequalities

Proportion and inverse proportion

Concepts from logic and quantitative analysis should be used in the presentation of this material whenever they appear to be naturally applicable.

B OPTIONAL MATERIAL

1 All areas of study

For pupils who need no more than core mathematics, emphasis should be given to the use of this material in a relevant and practical way. Where pupils from different branches and areas of study are taught in the same class, material should be chosen in such a way that all pupils get some material which suits their needs and interests.

2 General area of study

Pupils who wish to continue the 2MN course or the 2MS course should select optional material from the following areas:

Necessary tools from logic and quantitative analysis (No examination in this material will be required). An introduction to the application of proofs and various types of proofs, counter-positive proofs, "ad absurdum" proofs.

Absolute values. Elementary equations, inequalities and functions with absolute values

Examples of graphs of first-order equations with two unknowns.

Elementary first-order equations with three unknowns

Division of polynomials. The zero point of a polynomial. Factorising in linear factors

Quadratic equations with one parameter (Examination of the sum and product of the roots will not be required)

Numbers written as exponentials with base 10. An introduction to the derivative. Trigonometry (only for those who choose 2MN). Vector algebra (only for 2MN)

3.2.2 5-period course (2MN) in the 2nd year of the natural
science branch -----

This course proceeds from 1MA, from the options described under section 3.2.1, paragraph B2. Pupils who have not covered the necessary options in the 1st year, must make up for this deficiency in the 2nd year.

Algebra and functions

Definition of a^x

Exponentials with rational exponents

One first-order and one quadratic equation with two unknowns

The zero of a function

Rational functions

Limit value

Propositions about limit value for sum, product and quotient

Asymptotes and asymptotic functions

Continuity and discontinuity

Definition of the derivative

Interpretation of the derivative. Tangent

The derivative of a sum, a product, a quotient and a composite function

Relations between differentiability and continuity

Monotonic functions

Extreme-value, also in points where the function is not differentiable

Higher-order derivatives. Points where the second-order derivative equals zero

Integration as anti-derivation, definite and indefinite integral

Vector algebra

The concept of a vector

Vector multiplied by a real number

Basis of vectors. Orthonormal co-ordinates

Projection of a vector on another vector

Scalar product expressed by cosine and by the co-ordinates of the vectors

Trigonometry

The concept of an angle. Angles measured in radians

General definition of trigonometric functions, sin, cos, tan

Cos, sin and tan to 0 , $\pi/6$, $\pi/4$, $\pi/3$ and $\pi/2$

Formulas for cos and sin to $u \pm v$ and $2u$

The sine proportion, the cosine proposition, the area of a triangle $\frac{1}{2}ab \sin C$

3.2.3 5-period course (3MN) in the 3rd year of the natural
science branch -----

The course is a continuation of 2MN.

Geometry

The point of gravity in a triangle. Median
The equation for a straight line in its normal form. The
distance from a point to a straight line
The normal vector to a line
Plane represented by equation and parametric equation
Examples of parametric expression of curves in a plane
Vector definition of a plane
Normal vector of a plane. Normal form of a plane
Parametric representation of a line in space

The distance between a point and a plane, between a point and
a line, and between two points

The angles between two lines, two planes and between a line
and a plane

Volume calculation by means of integrals. Rectangular
parallel epipeds, pyramids and solid of revolution

Functions and algebra

The derivative of trigonometric functions

Trigonometric equations, especially $a \cos x + b \sin x = c$ and
 $\sin nx = \cos mx$

Elementary trigonometric inequalities

The inverse of a function

Logarithmic functions to the base 10 and e

General exponential functions and exponential functions to the
base e

General potential function x^f with derivative

Derivatives of logarithmic functions and exponential functions

Differentials. Use of the first order derivative to find
approximate values for functional values

Examples of integration as the limit of a sum, with
applications

Methods of integration. Integration by parts. Integration by
substitution

Partition of fractions with first-order denominator

Sequences. Convergence of sequences

Proof of induction

Series. Arithmetic and geometric series

Convergence and divergence of series, with particular emphasis
on geometric series

3.2.4 5-period course (2MS) in 2nd year of the social studies
branch -----

The course proceeds from the core material in 1MA. One can take this course over two years, e.g. by allocating two periods a week in the 2nd year and three in the 3rd year.

Algebra and functions

Elementary first-order equations with three unknowns
Definition of Q^x

Exponentials with rational exponents
Numbers written as exponentials with the base 10
Introduction to absolute values
Continuity and discontinuity
Simple rational functions
Asymptotes
Division of polynomials with linear divisor
The zero of functions
Factorising of polynomials in linear factors

Derivative
The derivative of a sum, a product and a quotient
Monotonic functions
Extreme-value, also in points where the function is not differentiable

Examination of functions and sketching of curves, including examination of cost- and income functions.
Examples of calculation of elasticity

Tangent

Integration and anti-derivative, indefinite and definite integral
Arithmetical and geometrical sequences
Arithmetical and geometrical series
Convergence and divergence of geometrical series
Introduction to compound interest and annuities

Application of this subject in the areas of economy and social life should be demonstrated by means of exercises and examples.

Statistics

Column diagram, histogram, cumulative distribution, typical number, median, mean value, fractiles
standard deviation
Relative frequency
Price index

3.2.5 5-period course (3MS) in the 3rd year of the social
studies branch -----

The course is a continuation of 2MS

A FUNCTIONS

The derivative of a composite function
The second-order derivative. Points where the second-order
derivative equals zero
General definition of sin, cos and tan, with geometrical
applications
Trigonometric functions with derivatives

Inverse functions

The logarithmic function $\ln x$ with its derivative

The exponential function e^x with its derivative

Application of exponential functions

Integral as the limit of a sum

Application of integrals (e.g. in calculating area, volume,
accumulation of capital, distribution of income)

Knowledge of the following types of integrals:

$$\int \frac{1}{x+a} dx, \int e^x dx, \int x^n dx \quad (n \in \mathbb{Z}), \int \sin x dx \text{ and } \int \cos x dx.$$

B OPTIONAL TOPICS

The pupils may choose one of the following topics:

1 Calculus of probabilities

The same material is to be studied as in the case of calculus of probabilities as an optional subject.

2 Electronic data processing

The same material is to be studied as in the case of electronic data processing as an optional subject.

3 Other topics may be approved on application based on a detailed plan of study.

5 ASSESSMENT

Pupils receive a grade for achievement at the end of each course: 1MA, 2MN, 3MN, 2MS and 3MS. Pupils who follow 2MS over two years (2+3) will receive a single grade after the final year.

The grade will be given on the basis of achievement throughout the course.

Examination questions should focus on the topics in the particular course. Tests may, however, require knowledge of topics from earlier courses.

The pupil's ability to explain course material orally and in writing should be evaluated throughout the course. Tests which concentrate on the pupil's ability to work independently should be given during the school year. The tests should be designed as a natural part of the instruction.

SYLLABUSES FOR SOCIAL STUDIES

SOCIAL SCIENCE

1.1 General information

Social science as a branch subject has much in common with social studies as a common core subject. The branch subject has 5 periods per week in the 2nd and 3rd years. See the syllabus for social studies in Part 2 of The Upper Secondary School Curriculum under 1: General Information.

Each year's course is a self-contained unit and may be studied as an optional subject by pupils in other branches. See the section on Assessment.

Pupils who choose social science as a branch subject must also take a course in economics of at least 3 periods. Furthermore they must take a course in history in addition to the common core subject. Supplementary options may be psychology and law.

Pupils in both years should undertake in-depth study of topics which may be selected from the syllabus list or elsewhere.

About 30 periods a year should be set aside for this work. For practical and pedagogical reasons, it is advisable not to cover too many topics within the individual class. The work may be undertaken individually or in groups.

2 AIMS

The pupils should:

- receive an introduction to the political, social and cultural features of modern Norwegian society and an understanding of the interaction between them,
- develop an understanding of the conditions which determine the organisation of a society, and of the factors which contribute towards social stability, as well as those which tend to produce social change,
- develop a critical attitude to social questions and a sense of responsibility for their solution as well as respect for the characteristics both of our own society and of other societies and cultures. In this context the sense of belonging to a world community, and the ability to tolerate other ideologies, are important goals
- feel encouraged to take an active part in social life,
- gain insight into methods and approaches characteristic of social studies,
- gain practice in independent analysis of facts and opinions bearing on social conditions.

3 SYLLABUS TOPICS

3.1 How the aims affect the selection of material

Social science as a part of the pupil's "branch" should above all give knowledge and understanding of Norwegian society. However, emphasis should also be given to a global and comparative perspective. The pupils should be made to understand that societies may be organised in different ways, and that the various elements of which a society is made up are mutually interdependent.

Teaching in social science must be problem oriented and not narrowly focused on academic distinctions. A natural balance must be found between formal and functional aspects. Although undue emphasis on theory must be avoided, relevant problems must be treated within a satisfactory scientific framework.

SURVEY OF TEACHING MATERIAL

The following topic areas should be covered:

Second year: co-ordinated introductory course
in topics mainly drawn from
sociology and social anthropology,

Third year: Norwegian and international
politics.

3.2 List of topics

2ND YEAR - SOCIOLOGY

1. Social behaviour and the process of socializing

- Standards, approval
- Role, behaviour in roles
- Conflicting roles, cross-pressures
- Sex-determined roles

2. Social systems

- The social system as a set of roles
- Primary-, secondary-, and reference groups
- Function and structure
- Formal and informal structures

3. The social heritage

- The concept of culture
- Cultural variations
- Stability and change
- Race and racial discrimination

4. The family

- Types of marriage and family
- The functions of the family in our society
- The problems of the family: divorce, the generation gap etc.

5. Social stratification and mobility

- Social ranks and social strata
- Various criteria of stratification
- Social mobility

6. Deviation, delinquency

- Positive and negative deviation
- Delinquency in Norway
- Reactions against delinquents
- The make-up and function of the courts

7. The consumer society

- Advertising and consumption
- The problems of the consumer society, i.e. depletion of resources, pollution and environmentalism

8. Work

- Working conditions in our society
- Labour contracts
- Relations between ownership and power
- The influence of the employee
- Women in economic life
- The social responsibilities of companies
- Trade unions. Collective bargaining
- Labour conflicts. Strike and lockout

9. Health and social problems

- Social policies, aims and planning
- Priority and means

10. Some of the tools applied by the social sciences

- Ways of approach
- Different types of data
- Selection
- Collection, processing and interpretation
- Modes of presentation
- Scientific standards

The topics mentioned under § 10 are not intended for separate treatment, but should be presented in their natural connection with related topics.

3RD YEAR - POLITICS

- The process of communication
- News distribution, propaganda, advertising
- Control of mass media, objectivity
- Propaganda and conditioning

B. The political system in Norway

1. The political system

- What is politics?
- Common and conflicting interests, the social basis of politics, the struggle for power, conflicts between interests and sets of values
- Constitutions and governmental authority; the concepts of human rights through their developments from "negative" to "positive"
- Different political systems

2. Political engagement

- Types of engagement
- Modes of election, referendum, representation and theories of representation
- The behaviour of electors
- Party systems
- The structure and function of political parties
- Other organisations and political pressure groups

3. The institutions of political authority

- The national assembly; recruitment, organisation, functions. Nominal and real authority
- The government: recruitment, relations with other political bodies; co-operation with business and other organisations. Parliamentary and non-parliamentary systems
- Administrative bodies: recruitment, functions and loyalty. The control exercised over these bodies
- Local authorities: recruitment, functions, local self-government, co-operation between communities, the districts and their relations with national affairs
- The courts: recruitment, law and politics

4. Processes of decision

- The parties involved in the planning process
- How can they exercise their influence?
- The problems, means and resources within a limited field of national affairs, studied as a means of illustrating processes of decision: development of the districts, health and welfare, communications, agriculture, education

5. International affairs

1. The international community

- Relations between national and international affairs: the

concept of nationality, national minorities, sovereignty, supranational authority

- International law
- Resources, pollution and environmentalism in an international context
- Different forms of international co-operation, international organisations and their functions
- Multinational companies
- International allocation of resources and revenues

2. The behaviour of states

- Economy and foreign affairs
- Ideology and foreign affairs
- Morality and foreign affairs
- Relations between great powers and small states
- Intention, capacity and means of influence
- Alliances and collective security
- The problem of disarmament

3. Norwegian foreign affairs

- Norwegian security and defence policies
- The functions of the armed forces
- Scandinavian and international co-operation
- Norway and the underdeveloped countries

5 ASSESSMENT

Pupils will receive a grade for achievement at the end of each one-year course.

In deciding the grade, considerable weight should be given to the independent work on topics selected for in-depth study. Account should also be taken of the pupil's independent work throughout the year, and of his ability to participate actively in teamwork.

Assessment should focus on understanding and insight, as well as the capacity for systematic and coherent presentation. Knowledge of detail separated from its context or argument is of less value. Emphasis must be given to the ability to formulate an independent approach and to find, explore, understand and exploit various forms of information.

The development of certain attitudes is included among the subject's goals. This, however, is an area which cannot be included in assessment, or one could soon find oneself grading a pupil's opinions or moral character. In teaching, however, these aims should be central.

For pupils who have studied the subject in the 2nd year, examination material will cover topics from both the 2nd and 3rd year courses.

ECONOMICS

1 GENERAL INFORMATION

The following courses may be chosen:

1. A 3-period course in the 2nd (or 3rd) year.
2. An advanced 2-period course in the 3rd year.
Courses 1 and 2 may possibly be combined into a 5-period course in either the 2nd or 3rd year.
3. An advanced 5-period course in the 3rd year. This course proceeds from the 3-period course and includes, apart from other material, also that contained in the advanced 2-period course.

2 AIMS

Pupils in the 3-period course should:

- acquire knowledge of the economic structure and the economic activities in society,
- become familiar with the most important concepts used in characterising economic conditions, and know where to find relevant statistics,
- become aware of the connection between concepts of production, and between these and concepts of income,
- learn by which means the authorities may implement their economic policy, and the effects produced by these means,
- study the connections between causes and effects in the public sector,
- understand how dependent people are on each other in a society based on division of labour,
- feel encouraged to take an interest in economic questions as well as current events in economic life.

The 2-period course has the following additional aims: The pupils should:

- acquire a general impression of the most important means by which the authorities may implement their economic policy, as well as knowledge of the conflict of interests which may arise in this connection,
- acquaint themselves with the methods used in tracing the connections between causes and effects in economic life.

The advanced course of 5 periods has the following goals in addition to those outlined in the 2-period course: Pupils should:

- deepen their insight into important economic questions which are currently being debated,
- become familiar with the most important distinctions between market-oriented and centralised politico-economic systems.

3 TOPIC SYLLABUS

3.1 How the aims affect the selection of material

Course of 3 periods a week

Economics is a very comprehensive subject.

As a course of three periods per week cannot give the pupils more than a glimpse of the vast field covered by this subject, topic areas have been limited to the barest essentials. To give a coherent general view of such important topics as the company's adaptation to the market and the ends and means of economic policy has therefore been impossible, although they are included in the treatment of individual topic areas.

The pupils should become acquainted with the most usual approaches to important socio-economic questions. They should learn to see the connections between them, and also to see them as parts of a larger whole. This is particularly applicable to such areas as the public sector, national accounting and international trade. In this context the pupils may benefit from the knowledge they have gained from geography lessons.

The advanced 2-period course in the 3rd year

Price development in a market and distribution of income are among the main topic areas included in this course. A summary of the ends and means of economic policy can be given at the end of the course. In this context simple models may be used to illustrate both the relationship between internal economic scales in a country and volumes of, e.g., exports and imports.

The advanced 5-period course in the 3rd year

A choice may be made between alternatives A and B. The material contained in the advanced 2-period course plus study of economic systems is common to both alternatives.

Alternative A also includes material from the current long-term programme, specified in the List of Topics. However, material may be taken from other parts of the programme.

Topics under Alternative B are independent of official documents, but constitute material equivalent to that of Alternative A.

The aim of both alternatives is to enable the pupils to apply theoretical knowledge to relevant socio-economic questions.

3.2 List of Topics

3.2.1 List of Topics for the 3-period course

1 Introductory

Man in society. Economic sectors and their interdependence.
The individual, the organisations and the authorities.
Brief survey of the main subjects of economics.
Economics and political decisions

2 Main concepts and systems of national accounts

- The production factors and resources of society
- Gross production value and gross national product
- Consumption and gross investment
- Net national product and net investment
- Systems of national accounts in a closed economy
- Exports, imports, the system of national accounts in an open economy
- Net interest, dividends and transfers in an open economy
- Real income, national income and domestic income
- Saving, real investment and investment in foreign assets
- The national budget and the national accounts

3 The interplay of factors influencing the economic development in a closed economy

Elementary model of supply and demand

- Economic equilibrium
- The effects of changes in real investment on supply and demand
- The effects of changes in the demand for consumer goods on supply and demand
- The importance of central and local authorities in the total economic picture
- Economic growth and welfare
- Factors of importance to consumption and saving
- The motives and importance of real investment

4 Money and credit

- The development from the subsistence economy to an economy based on money and credit
- The most important functions of the means of payment
- Price level and consumer price index
- Inflation and deflation
- Money and credit policies

5 The open economy

- Balance of payments
- Foreign currencies and foreign exchange policies
- Current accounts: surplus or deficit, causes and effects

3.2.2 List of topics for the advanced 2 period course

1 Consumer, producer and marketing conditions

- Needs, meeting needs, economic benefits and free benefits
- The aims of a business enterprise
- Production, costs and income
- Supply and demand
- Price determination by free competition
- Price determination by imperfect competition
- Regulation of prices and competition, public control of big companies

2 Distribution of income

- Production and income - a general survey
- Private and public disposable income
- Factor income and distribution of personal income
- Employers' and employees' organisations

3 Foreign trade

- The importance of foreign trade to a nation
- International division of labour
- Rates of exchange, foreign currency reserves, terms of trade and capital movements
- Main trends in the development of foreign trade policies
- International economic organisations

4 Aims and means in economic policies

- General survey
- Employment policies
- Income policies
- Stability in a closed and an open economy
- Government influence on national and international economic growth
- Use of resources and preservation of the environment

3.2.3 List of topics for the advanced 5-period course

1 List of topics for the advanced 2-period course

2 Economic systems

- Brief historical survey
- Laissez-faire - market economy
- Socialism - Economic planning
- Mixed economy

3 SYLLABUS A:

Topics from the Government's current long-term programme

In the long-term programme for 1978-81 the following topics are to be studied:

- Chapter 1: Introduction and summary
- Chapter 2: Social security and welfare
- Chapter 3: Strengthened solidarity and social equality
- Chapter 4: Strengthening of the family and the local environment
 - 4.1: Problems and challenges
 - 4.2: Family-related policies
 - 4.3: Dwellings and environment
- Chapter 5: Employment for all
- Chapter 6: Improved working conditions
- Chapter 7: Administration of resources and environment
- Chapter 10: Economic policies: Aims and perspectives

Topics from the joint declaration made by the Norwegian Conservative Party, the Christian People's Party and the Center Party, with reference to the long-term programme:

- 1 : Chief aims and basic values
- 2 : Norway's economy in an international context
- 3 : Prices and incomes policies
- 4 : Norway and the developing countries
- 6 : Resources and energy
- 7 : Stable employment - development of the districts
- 9 : The family and the local environment
- 13: Taxation and savings policies
- 14: Public control - our system of mixed economy

Syllabus B:

3.1 Population

- Malthus's theories of population. The Neo-malthusians
- Population growth in Norway
- Population growth in the world

3.2 Ecological problems

- Resources, pollution, environmentalism and economic growth
- Norway's economic resources
- The economic resources of the World

3.3 Welfare theory

- The concept of welfare
- Welfare and economic growth
- Economic level and human welfare

3.4 Public economy

The system of national accounts in an open economy with the domestic sector divided into a public and a private sector

- Closer study of expenses and incomes in Norway's public sector
- The aims and means of determining the development of the nation

5 ASSESSMENT

Pupils receive a grade for overall achievement after each year.

Evaluation should be based on the pupil's factual knowledge and his ability to apply logical reasoning to relevant problems.

In the courses proceeding from the 3-period course, written tests are particularly important.

BUSINESS ECONOMICS

1 GENERAL INFORMATION

The subject of Business economics consists of two courses - one of 5 periods (2nd year) and one of 8 periods (3rd year).

Pupils who choose Business economics as a branch subject must also take a course in economics of at least 3 periods per week.

2 AIMS

The pupils should:

- acquire knowledge and understanding of economic and organisational relationships within the individual company and between the company and society,
- acquire an understanding of the economic and social responsibilities of the management of finite resources,
- acquire knowledge and skills which will be of use in private and public administration,
- feel encouraged to undertake further studies, particularly in social and economic areas.

The 5-period course in the 2nd year meets only a few of these requirements.

3 SYLLABUS TOPICS

3.1 How the aims affect the selection of material

As the management of a company requires information of many kinds, the next step should be to introduce the pupils to recording and handling of data from such topic areas as estimates, valuation, calculation of profits, financing and investment.

Furthermore, the pupils should be introduced to theories of production, cost, incomes and prices, and to some of the problems connected with the marketing of a company's products.

In order to give the pupils an impression of the company in its social context, business economics should be seen in relation to social administration, to laws and regulations, and to practices developing within this framework.

3.2 List of Topics

3.2.1 List of Topics for the 5-period course

1 Introduction to the subject The company

- The concept of a company
- Distinctions between the concepts of company, enterprise, business, shop
- The aims of the company as seen from the points of view of the owners, the employees, the creditors and the community
- Firms in various industries. such as manufacturing, handicrafts, trade and service trades
- The production factors of the company work, capital, organisation and technology
- Ownership in business
Single proprietor company, liable company, limited liability company, state-owned companies
- The financial conditions of the company, acquisition and use of capital for investment and operations
- The most important business documents
Documents used in purchase and sale of goods and services
Documents used in money transactions
- Company models
- The production model
- Raw materials/purchases, production, storage, sales
- The information model
- Model showing the stream of production and the stream of information, both to and from the company
- Simple organisation chart. showing the most important functions within the company, such as planning, decision, go-ahead, control, co-ordination, public relations, as well as working routines, responsibility, authority and the influence of employees on management
- Chart of the decision-making process
Gathering of information, processing of information, the basis of decisions, making decisions, the consequences of decisions, the aims of the business as guidelines of the decision-making process. Decisions from uncertain premises.

2 Data registration/Accounting in trading companies

- Basic principles of bookkeeping by double entry
- Basic principles of data registration - vouchers and filing of vouchers
- Accounting systems and account planning
- Ledgers
- Accounting in a privately owned company and in a limited liability company

3 Data processing and analysis in trading companies

- Calculation of prices: fixing a price
Direct costs, cost of goods sold
Indirect costs
Reductions in sales returns
Profit
Mark-up
VAT and investment tax
Price calculation f.o.b. and c.i.f.
- Analysis based on balance sheet and profit and loss account. Elementary exercises in assessing profitability (gains from own capital as well as total capital), Calculating rate of circulation of stored goods, as well as credit time for debtors and creditors

3.2.2 List of topics for the 8-period course

The course is based on the 5-period course, and comprises the following topics in addition to those constituting the 5-period course:

- 1 Production - costs - supply - demand - adaptation to the market
 - The aims of a company in general outline
 - The theory of production. Total product, average product, extra product. Substitution
 - Theory of costs. Costs varying with output and time. Fixed and variable costs. Progressive, digressive and proportional costs
Total costs, unit costs, difference/marginal costs
 - Optimal costs
 - Supply. Supply and costs. Price-determined supply
 - Demand. Price-determined demand.
Price elasticity
 - Turnover. Total revenue, difference/marginal revenue.
Optimal profit
 - Price determination and adaptation to different types of market. Perfect competition, monopolies, oligopolies, differentiation of prices.

2 Data registration/Accounting in industrial companies

- The company's accounts
- Accounting systems and planning

3 Data processing

- Calculation - methods and analyses
 - Calculating contributions and production at cost in an industrial company
 - Analysis of differences between calculation base and results achieved
 - Break-even analyses
 - Bottlenecks
 - Optimal purchases
- Value and assessment
 - What is value?
 - The impact of evaluation on balance sheet and profit and loss account
 - Hidden reserves and hidden loss
 - Nominal and real evaluation
 - Further study of certain assessments
 - Fixed assets
 - Depreciations in the external and internal accounts
 - Methods of depreciation

Goods:

Nominal principles
Approximation to real valuation

- Analyses based on the balance sheet and the profit and loss account
 - Profitability
 - Financial stability
 - Liquidity
 - Financing
 - Cash flow conditions
- Budgeting
 - Budgeting as part of planning and management
 - Setting up a budget
 - The most important budgets
 - Control of budgets
- Investment and funding
 - Investment:
 - Long-term planning
 - Investment calculation
 - The capital value method
 - The internal interest method
 - Reliability margins in calculations
 - Funding
 - The need for capital
 - Fixed capital and working capital
 - Elementary exercises in assessing the need for capital

Capital formation
Depreciation as a means of funding
Own capital
Foreign capital
Financing costs
Calculated costs of equity
Calculated costs of external capital
The extent of equity and external capital
Returns on equity
Mergers
Financial and organisational restructuring

4 Marketing

- Definition
- Marketing activities
- Market analyses
- Product development
- Marketing communications
- Distribution
- Various categories of markets
- Sortiment policies
- Consumers and consumer behaviour
- The consumer, as seen in a historical perspective
- The process of buying
- The consumer's sources of information

5 ASSESSMENT

Pupils will receive a grade for overall achievement after each year.

Evaluation should be based on the pupil's factual knowledge and his ability to apply logical reasoning to relevant problems.

LAW

1 GENERAL INFORMATION

Law as a branch subject is a course of 4 periods per week, normally taken in the 3rd year. The course may also be taken over 2 years with 2 periods in the 2nd year and 2 periods in the 3rd year.

If the course is taken over 2 years, the topics given under 3.2.2 should be studied in the 2nd year. This course will then be the same as the 2-period optional course.

2 AIMS

The pupils should:

- acquire a general view of the legal system and an understanding of the vital importance of laws and regulations
- acquire insight into the rule of law, and of the interaction between law and society,
- acquire knowledge of those laws which apply in the main area of justice, and also of the main principles which apply to supranational jurisprudence,
- learn to apply legal sources to authentic cases,
- develop their capacity for legal argument.

3 SYLLABUS TOPICS

3.1 How the aims affect the selection of material

Through the study of law, the scattered knowledge which the pupils may possess about this subject should be systematised and related to basic principles of law.

The list of topics should be so arranged as to make it possible:

- to give the pupils a general view of the legal system,
- to explain to the pupils the nature of laws and the procedures of legislation
- to give an insight into democratic government, both central and local, as well as the rights and duties of the citizens,
- to give an insight into legislation applying both to the individual and to the family,
- to give a general view of the most important rules applying in trade and industry,
- to give an insight into the rules regulating the practices of insurance and social security,
- to introduce the pupils to important laws applying in cases where Norwegian writ does not run, as well as to international law.

3.2 List of topics

3.2.1 List of topics for the 4-period course

1 The law and the community

The rules of the community

Custom - morality - law (written law, common law, leading cases)

Brief historical survey of Norwegian law

2 Sources of law

Our present sources of law

The making of laws - The state and its laws

The interaction between law and social conditions

The law and the courts - Interpretation and application of the law

Objective law - subjective law - law incumbent upon everyone

General principles of law and individual rights.

Jurisprudence and doctrines of law

3 Constitutional law

The constitutional powers, their competence and functions (central government and local government)

Various types of government

Democracy

Human rights, in Norway, in Europe; international rules for the observation of human rights

Law of nationality

The organisation of general and local elections

The courts, their organisation and competence. The prosecution

Penal law. Crimes against the individual, against the community, and crimes involving economic values

Punishment and its prerequisites, crime prevention, the treatment of delinquents

Law of administration. Legal bodies and their function.

Control of the courts

4 Law of persons

Capacity of having legal rights and obligations. Equality before the law. Equality in terms of sex, social class, religion, race and nationality, age, residence and record of conduct

Law of names

Capacity of contracting legal obligations; capacity of receiving and administering estate; trusteeship; board of trustees and guardians

Capacity of breaches of law

The legal position of minors, of persons officially declared under legal disability, and of persons not responsible for their acts

5 Family law

Marriage, separation and divorce, non-valid marriage, invalidation of marriage

Matrimonial estate

Joint estate and separate estate

The capability of disposing of the matrimonial estate

Children born in wedlock; children born outside of wedlock

Adoption

Succession to real estate: The Norwegian tradition and its rules

6 Succession law

Succession by rules of law; succession by will; interpretation of wills

Official and private administration and repartition of inherited property

Undivided possession of matrimonial estate

7 Ownership law

The concept of possession

The content and scope of the right of ownership of real estate and movables (§105 of the Norwegian Constitution)

Joint ownership

Acquisition of the right of ownership; cessation of the right of ownership; the protection of ownership; transfer of ownership

Brief presentation of the Open Air Activities Act (1957) and the Natural Environment Protection Act (1970), as well as the most important acts bearing on the right of ownership

8 Law of obligations

How obligations arise, their content and cessation

The most important documents used in contracting obligations

Transfer of obligations; purchase of obligations

Joint responsibility

Legal protection of obligations

9 Law of contracts

The freedom of contracting; the freedom from observing specific formal rules

Interpretation of contracts

Invalid contracts

Power of attorney

10 Law of sales

Purchase of movables; cash payment, credit and payment by instalments

The Reconsidered Purchase Act (1970)

Purchase of real estate

11 Labour law

Labour contracts
Collective bargaining
Mediation
Strike and lockout
Arbitration
Safety rules in industry
Unemployment. Officially guaranteed minimum wages

12 Law of contracts of guarantee

Indemnity and warranty: 'simple' guarantee; 'principal' guarantee: the legal obligations incurred
Law of mortgages and pledges. Voluntary pledge: legal mortgage lien; mortgage imposed by official or court order
The protection of contracts of guarantee; their content and cessation

13 Law of corporate bodies

Legal persons
Unlimited companies
Limited liability companies. Industrial democracy

Law of companies and marketing

An outline of the Formation of Companies Act
An outline of the Trade Act
Marketing Control Act (1972)
The Price Control Act

15 Bankruptcy and composition: An outline of the usual procedures

16 Law of torts

The prerequisites of liability
Subjective and objective liability
Proofs and adequacy
Liability under law of sales
The liabilities of the employer
The liabilities of children, adolescents and parents
The liabilities of persons not responsible for their acts
Liabilities incurred through damaging actions
Liabilities when damage has been caused by several persons
Co-operation of the injured party; its effect on the question of liability
Law of torts: Developments within this field of justice; the emphasis on objective liability, including insurance.

17 International law

This chapter should include the following material:

Development of international law
Human rights
The charter of the United Nations. The international court
The international court of arbitration
International arbitration in general outline
Recognition of states, de facto and de jure
The rights of the nation within its own territory
International relations
Supranational bodies (e.g. NATO and the Common Market)
An outline of private international law
Treaties

3.2.2 List of topics for 2-period course

1 The law and the community

The rules of the community
Custom - morality - law (written law, common law, leading cases)
Brief historical survey of Norwegian law

2 Sources of law

Our present sources of law
The making of laws - The state and its laws
The interaction between law and social conditions
The law and the courts - Interpretation and application of the law
Objective law - subjective law - law incumbent upon everyone
General principles of law and individual rights.
Jurisprudence and doctrines of law

3 Constitutional law

The constitutional powers, their competence and functions (central government and local government)
Various types of government
Democracy
Human rights: in Norway, in Europe; international rules for the observation of human rights
Law of nationality; law of names
The organisation of general and local elections
The courts, their organisation and competence. The prosecution.
Penal law. Crimes against the individual, against the community, and crimes involving economic values
The prerequisites of punishment; crime prevention; the treatment of delinquents
Law of administration. Legal bodies and their function.
Control of the courts

4 Law of persons

Capacity of having legal rights and obligations; equality before the law; equality in terms of sex, social class, religion, race, nationality, age, residence and record of conduct
Capacity of contracting legal obligations; capacity of receiving and administering estate; trusteeship; board of trustees and guardians
Capacity of breaches of law
The legal position of minors, of persons officially declared under legal disability, and of persons not responsible for their acts

5 Ownership law

The concept of possession
The content and scope of the right of ownership of real estate and movables (§105 of the Norwegian Constitution)
Joint ownership
Acquisition of the right of ownership; cessation of the right of ownership; the protection of ownership; transfer of ownership
Brief presentation of the Open Air Activities Act (1957) and the Natural Environment Protection Act (1970)

6 Law of obligations

How obligations arise, their content and cessation
The most important documents used in contracting obligations
Transfer of obligations; purchase of obligations
Joint responsibility
Legal protection of obligations

7 Law of contracts

The freedom of contracting; the freedom from observing specific formal rules
Interpretation of contracts
Invalid contracts
Power of attorney

8 Law of sales

Purchase of movables; cash payment, credit, and payment by instalments. Close study of the Purchase Act
The Reconsidered Purchase Act (1970)
Purchase of real estate

9 Labour law, trade unions and employers' organisations

Labour contracts
Collective bargaining
Mediation
Strike and lockout
Arbitration
Safety rules in industry
Unemployment. Officially guaranteed minimum wages

10 Law of contracts of guarantee

Indemnity and warranty; 'simple' guarantee; 'principal' guarantee; the legal obligations incurred
Law of mortgages and pledges. Voluntary pledge; legal mortgage lien; mortgage imposed by official or court order
The protection of contracts of guarantee; their content and cessation

11 Law of companies and marketing

Formation of Companies Act
Trade Act
Marketing Control Act
Price Control Act §18

12 Bankruptcy and composition

5 ASSESSMENT

Pupils will receive a single grade for overall achievement in the 4-period course. This also applies where the course has been taken over 2 years.

Evaluation should be based on the pupil's factual knowledge and his ability to apply logical reasoning to relevant legal problems.

The pupils should be regularly tested both in their grasp of theory, and in their ability to apply their knowledge to authentic cases.

H I S T O R Y

1 GENERAL INFORMATION

History, whether as an optional or a branch subject, has the periods 2 - 2. For pupils in the Social Studies branch, one of the one-year courses is an obligatory branch subject. This may be studied in either the 2nd or the 3rd year. In either case the obligatory course will have some of the same content, as about half the time should be spent on the history of political ideas.

In both the 2nd and 3rd years, history may be studied as an optional subject by pupils from other branches. In groups which do not include pupils from the Social Studies branch, the requirement about the history of political ideas does not apply.

At either level, the courses may be set up as separate 2-period subjects. From the point of view of the subject, however, it would be advantageous to combine it with the obligatory course in history for pupils of all subjects, to create a single course with the same teacher. If this is not possible, the teachers will have to co-ordinate their choice of topics to avoid overlapping.

2 AIMS

The general aims for the teaching of history as a branch subject and option are the same as for the common obligatory course in history. The aims specific to these courses are that the pupils should:

- expand their knowledge of history
- develop their understanding of historical approaches and methods,
- gain a better foundation for study of the branch subject of social science.

3 SYLLABUS TOPICS

3.1 How the aims affect the selection of material

Within the branch, the content of the subject is to some extent dictated by the requirement that it should complement the course in Social science. 30 - 40 periods of the 2nd or 3rd year will be spent on the history of political ideas. For the remainder of the course, there is more freedom in the choice of topics.

3.2 List of Topics

Variant A

In schools where variant A has been selected for the general course in social science, history after World War I is studied in the second year of this course. The third year would then be the most convenient time for the course in history of political ideas, as otherwise the pupils would lack necessary background knowledge in the field of general history.

2nd year

In the second year the branch subjects, as well as the optional subjects, should comprise material that gives support and perspective to the compulsory general course, such as e.g.:

- a) Imperialism,
- b) International affairs after World War I,
- c) History of Norway after 1905.

3rd year

1 History of political ideas (30 - 40 period)

The curriculum consists of the following philosophers and schools of thought:; Plato, Aristotle, Thomas Aquinas, Machiavelli, Grotius, Locke, Montesquieu, Rousseau, Conservatism, Laissez-faire - both in economic and political life, Marxism/Leninism/Maoism, Social democracy, Anarchism, Fascism/Nazi-ism, Populism.

Each pupil must carry out in-depth study of at least two of the philosophers or schools mentioned above.

The teaching should comprise the functions of ideology as well as the different scales of values to which it is related. Although ideology should be discussed as an organic part of different times and civilizations, its importance in the present-day world must be emphasized.

2 Optional topics

- a) Two different epochs, selected from those in the compulsory course in social sciences
- b) One or two topics corresponding in scope to two epochs
- c) Topics selected from the history of Norway
- d) The history of a locality
- e) Historical philosophy and research methods
- f) A combination of two or more of the alternatives a) - e).

Variant B

In schools where variant B has been selected for the general course in social science, history up to 1870 is studied in the second year of this course.

If possible, the general course should be combined with the branch subject course. This 5-period course could conveniently form an integral part of the history teaching in the second year, provided, however, that the prescribed amount of periods (30 - 40) can be obtained.

Should it be necessary to study the branch subject as a separate 2-period course, it might be an advantage to study history of political ideas in the 3rd year. Variant B could thus be organised in two different ways.

Alternative 1 - History of political ideas, 2nd year

2nd year: See Variant A, 3rd year

3rd year: Supplement to the course in general history after 1870

Alternative 2 - History of political ideas, 3rd year

2nd year: Choice between:

- a) 5 different epochs
- b) Topics corresponding in scope to 5 epochs
- c) Selected topics from the history of Norway
- d) History of a locality
- e) Historical philosophy and research methods
- f) A combination of two or more alternatives a) - e), corresponding in volume to 5 epochs

3rd year:

- 1) History of political ideas, as for Variant A
- 2) Supplement to the course in general history after 1870

5 ASSESSMENT

Pupils receive a grade for overall achievement at the end of each one-year course.

The quality of the pupils' work, both independent and group work, should be taken into consideration. Considerable emphasis should also be given to knowledge which displays general understanding and insight, and on the ability to give a systematic presentation. Knowledge of detail separated from its context or argument is of less value.

SYLLABUSES FOR LANGUAGES

F O R E I G N L A N G U A G E S

1 G E N E R A L I N F O R M A T I O N

1.1 Outline of language courses at different levels

The following terms are used for language courses at different levels:

The A-language is English.

A B-language is a language subject which the pupils have studied in addition to English in the basic school, and which they also study in the upper secondary school.

A C-language is a language subject which the pupils start studying in the upper secondary school.

In the language branch pupils may study modern languages at three levels:

Foundation course in C-language is a beginners' course which can be studied in any language in which the school offers instruction. These courses continue over two years. If a pupil studies a C-language over three years, the third year of the course, plus a possible optional course in the second year, counts as an advanced course in C-language.

Foundation courses in A- and B-languages require a minimum of two years' instruction in the basic school.

Advanced courses in A- and B-languages require at least two years' instruction in the basic school plus a foundation course in the upper secondary school.

In exceptional cases, pupils may take an advanced course in a B-language even though they have not studied the relevant language in the basic school. In such cases, they must prove through a test that they possess knowledge of the language equivalent to the requirement for the B-language on completion of a foundation course.

1.2 Summary of periods allotted to the various courses:

	1st year	2nd year	3rd year
Course in A-language	4	3+3(2)	5(2)
Course in B-language	4	3+2(2)	5(2)
Course in C-language	4	3+2	5
Course in C-language		5	5

The figures in parentheses apply to optional subjects. Schools can also offer a 2-period option in C-languages or Latin.

The periods which can be chosen in addition to the foundation courses of 4+3 periods are advanced courses. These courses count as branch subjects in the general area of study. As the table shows, the branch subject A-language accounts for 3 periods in the second year and 5 periods in the third year. In a B-language, there are 2 periods in the second year and 5 in the third year. The periods in the second year, in the foundation course and advanced course, may be combined into a single course.

For most pupils, the courses will be distributed by years as above, but in certain cases, e.g. B-language in a 2-year foundation course, they may be distributed differently.

1.3 Summary of periods allotted to courses in branch subjects

	1st year	2nd year	3rd year
Foundation course in C-language	4	3	
Foundation course in C-language		5	5
Advanced course in C-language		0/2	5
Advanced course in B-language		2	5
Advanced course in A-language (= English)		3	5
Advanced course in A-language (= English) (Social studies branch)		0	5
Advanced course in A-language (= English) (Natural science branch)		0	3

The courses in modern languages in the language branch may also be followed by pupils from other branches.

Pupils who have studied English only in the basic school, or who do not wish to continue with a B-language, must take a foundation course in a C-language (4+3 periods) in the 1st and 2nd years. The course may be extended by 2 periods in the 2nd year and continued in the 3rd year with 5 periods. This extension of the subject (2+5 periods) constitutes the branch subject course. The periods in the 2nd year (3+2) may be combined into a 5-period course.

In the case of a pupil who studies a third language in addition to the two which constitute the obligatory combination of subjects, the 4+3 or 5+5-period language course will be considered as a branch subject.

2 AIMS

The pupils should:

- develop their ability to understand the foreign language in speech and writing,
- develop their ability to use the language orally and in writing,
- broaden their knowledge of social and cultural conditions in the language area in question
- acquire a basis for further learning and personal development through the chosen language.

These principles apply to all courses in modern languages in the upper secondary school and they furnish the basis for the specific goals of the individual courses.

Foundation course in C-language (beginners' level)

At the end of the foundation course in C-language - after about two years of study - the pupils should be able, within the confines of the material studied, to

- understand simple everyday speech
- make themselves understood orally, with good pronunciation, in simple contexts
- read and understand simple texts
- use the language orally and in writing in simple letters, messages, compositions, etc.
- have some knowledge of everyday life in the language area in question.

Foundation courses in A- and B-languages and advanced courses in C-languages

At the end of these courses, pupils should, within the confines of the material studied, be able to:

- understand everyday speech on general topics
- use the language, with good pronunciation, for topics from everyday life
- read and understand texts of a linguistic level compatible with their year of study
- use the language in somewhat freer expositions (e.g. letters, summaries, compositions) on everyday and general topics

- have some knowledge of everyday life and social conditions in the language area in question.

Advanced courses in A- and B-languages

At the end of these courses the pupils should be able to:

- understand everyday speech (e.g. conversation, briefings, speeches) at natural speed,
- use the language with good pronunciation (e.g. in conversation or giving information) for general or subject-oriented topics,
- read and understand texts of a general or subject-oriented nature from textbooks, newspapers and literary works,
- use the language in writing in more demanding presentations of general or subject-oriented topics,
- possess a more extensive knowledge of social and cultural aspects of the relevant language area.

2.1 Comments on Aims

The aims for language study are here amplified on three levels:

- Foundation course in C-language (beginners' course)
- Foundation courses in A- and B-languages and advanced courses in C-languages
- Advanced courses in A- and B-languages

This amplification of the study goals is intended as guidance for what can be expected at the different levels of education. When assessing the requirements for the different languages and courses, it has to be borne in mind that English is taught for more years in the compulsory school than a B-language. It has further to be borne in mind that the teaching of Russian, for instance, will require extra time as a new alphabet has to be learnt.

Language education aims at being of practical use to the pupils themselves and for the work they will be doing in society. Considerable emphasis should therefore be placed on developing the pupils' ability to use the language. The individual elements which go to make up this ability should as far as possible be integrated into a whole, and in such a way that there is a reasonable balance between them.

Through language study, the pupils will gain practice in different working methods - independent work and co-operation with others. They should be given guidance and practice in using those aids which promote efficient learning and orientation in the subject.

The study of a language should help pupils to acquire the language so well that they can use it to acquire knowledge of, and make contact with, other peoples and cultures. In this way the education may help to create a foundation for understanding between people from different language backgrounds.

In the description of the aims for advanced courses in A- and B-languages, the term "natural speed" is used. By this is meant approximately the speed which is used in reading news on the radio in the relevant language.

3.2 Working materials for the various courses

Different kinds of material are needed at the different levels of education.

Foundation courses in C-language require the following materials:

- texts which contain both dialogue (everyday language) and informational material. As far as possible, the vocabulary of the texts should be based on word frequency lists. The texts must be of high quality as regards both language and content.
- workbooks or practice material containing a broad selection of systematic exercises, oral and written. Parts of the practice material should, as far as possible, be self-instructional.
- a systematic grammar (possibly as a separate booklet) to support pupils in their independent work.
- vocabulary lists. In teaching material written for the purpose, the vocabulary lists should be bilingual where necessary in order to give pupils a clear understanding of words and expressions.
- tape recordings of a broad selection of texts (including dialogues) for listening practice and oral exercises. The tapes should be recorded by native speakers.
- visual material in the form of illustrations, overhead projector transparencies, etc.
- a teacher's guide.

Teaching books for beginners' courses should contain enough material for about two years of teaching. The content should be suited to the age and the pupils.

Foundation courses in A- and B-languages and Advanced courses in C-languages

Material for these courses should be obtained from various sources:

- anthologies with vocabulary lists and possibly workbooks and teachers' guides
- systematic language practice courses, or a grammar with practice booklets
- literature (possibly adapted), preferably with vocabulary lists
- special booklets of material related to the subject
- material from school radio and television
- additional material such as thematic booklets, material from the newspapers, journals, periodicals for young people, reading labs or other self-instructional material
- recorded material with and without texts, e.g. literature and special exercise material for listening comprehension
- filmstrips, overhead projector transparencies, films and television programmes
- dictionaries, encyclopaedias, books on background, etc.
- practice booklets.

Teaching in a class or group will remain based on the textbook as a source of material. As the instruction should be adapted to the pupils' interests and standard of achievement, it may often be necessary, however, to find material outside the textbook.

Advanced courses in A- and B-languages

For these courses, material will to a considerable extent have to be taken from the same sources as for the foundation courses. At this level, however, with particular regard to English, there will be a need for supplementary material in addition to the textbook.

In the commercial alternative there will be a need for material particularly angled towards commercial/economic topics and business correspondence.

The teacher should decide whether the pupils will need a handbook of grammar. Pupils should possess a suitable dictionary.

In English, pupils should possess their own books of background material, in the form of literary surveys, and surveys of the history, society and culture of the country in question. If the pupils do not have such books themselves, the material should be available in the form of class sets at

school. Topics which should be included in such surveys are, for example, school and education, society and politics, population problems, industrial development, etc.

3.3 List of topics for various courses

ENGLISH

General alternative:

3-period course, in 2nd year:

200-250 pages to be read, depending on the arrangement of the course.

5-period course, in 3rd year:

approx. 300 pages to be read.

Combined course (foundation course/advanced course of 3+3 periods) in 2nd year:

approx. 300 pages to be read.

The intensive reading should include:

- a suitable selection of literature (short stories, drama, novels). At least two of the following three periods should be represented: the Neo-classicism, the Romantic period and the Victorian age. Poetry should make up 20-30 pages of the selection,
- a play by Shakespeare, of which 25 pages (25 lines = 1 standard page) are to be read intensively, or a work by another major author, of which about 25 pages should be read intensively. As the pupils should get a general impression of the whole work, the remainder or parts of it, should be read extensively.
- factual prose which to a major extent throws light on the culture of English-speaking countries. Factual prose texts should constitute at least one third of the total intensive reading.

The extensive reading should include both literature and factual material. Material from newspapers and journals should be included.

Texts by both English and American writers should be read. Texts by writers from other English-speaking countries could also be included.

Pupils are not required to read in context a survey of English/American literary history, but it is assumed that they will, through their instruction, acquire some knowledge of the authors they have read, and of the periods from which the material is taken.

In classes and groups which are not going to follow the advanced course in the 3rd year the teacher must decide, in consultation with the pupils, whether any literature from the 19th century or earlier is to be read.

Commercial alternative:

3-period course in 2nd year:

150- 200 pages to be read.

5-period course in 3rd year:

approx. 250 pages to be read.

Combined course (foundation course/advanced course of 3+3 periods) in 2nd year: approx. 250 pages to be read.

The intensive reading should include:

- a suitable selection of literature (short stories, novels, drama, poetry),
- a suitable selection of factual texts dealing with economic/commercial and social and cultural topics. About half of the intensive reading should consist of material of this type.

The extensive reading should include:

- a suitable selection of literature,
- a suitable selection of factual texts dealing with economic, social and cultural topics. About half of the extensive reading should be factual.

In addition to the intensive and extensive reading there will be a course in business correspondence.

For pupils who follow the 3-period advanced course in the 2nd year without planning to take the advanced course in the 3rd year, the school will decide whether a limited course in English business correspondence will be included.

FRENCH, SPANISH AND ITALIAN

These three courses are considered under one heading as there is very little difference between them as regards the scope of working material which can be used in courses at a given level.

Foundation course in C-language (beginners' level)

The foundation course based on 4+3 periods in the 1st and 2nd years, should aim at developing an active vocabulary of approx. 1100 - 1500 words.

The foundation course based on 5+5 periods in the 2nd and 3rd years, should aim at developing an active vocabulary of approx. 1200 - 1700 words.

Pupils in the 5+5 period-course, should in addition to the beginners' books study texts amounting to some 30 - 40 pages.

The amount which pupils can read in addition to the material in the beginners' books will vary with the class and the books which are being used.

Advanced course in C-language

2-period course in 2nd year:

30-40 pages to be read, depending on the organisation of the course.

5 period course in 3rd year:

approx. 125 pages to be read.

Combined course (foundation course/advanced course, 3+2 periods) in 2nd year:

30-40 pages to be read in addition to the beginners' books.

The material should include both literary and factual prose. The literary texts should comprise both prose and poetry, and should be mainly contemporary. In Spanish, texts should also be read from Spanish-speaking countries outside Europe.

The factual material should constitute between one third and one half of the total material. Part of it should deal with everyday life, culture and society in the relevant language area.

Advanced courses in B-languages, French and Spanish

As Italian is not included among the options in the basic school, it has not been included as a B-language in this edition of the syllabus.

General alternative:

2-periods course in 2nd year:

50-75 pages read.

5-period course in 3rd year:

approx. 150 pages.

Combined course (foundation course/advanced course, 3+2 periods) in 2nd year:
approx. 125 pages.

The material which is read intensively should include a suitable selection of literature (prose and poetry), mainly contemporary. The teacher and pupils should decide together, particularly in the 3rd year, whether any literature from the 19th century and earlier can be included. The literature should make up not less than one third of the total intensive reading. Texts from countries outside Europe should also be read in the relevant languages.

Factual texts which describe daily life, society and culture in the relevant language areas should be included in the intensive reading.

The extensive reading should include both literature and material about society and culture. Teacher and pupils may, after consultation, decide whether to put more or less weight on one area of the material or another. Pupils in the 3rd year here have the possibility of reading a complete work (novel, play or factual work) extensively, or partly extensively and partly intensively.

Commercial alternative:

2-period course in 2nd year:

approx. 50 pages.

5-period course in 3rd year:

approx. 100 pages.

Combined course (foundation course/advanced course, 3+2 periods) in 2nd year:

approx. 80 pages.

The intensive reading should consist of a selection of literature (prose and poetry), mainly contemporary, and a selection of factual texts dealing with economic/commercial and social conditions. About half of the intensive reading should consist of material of the latter type.

The extensive reading should consist of material of about the same type as the intensive reading. Approximately one half of the material should be factual, and the remainder literary.

In addition to the intensive and extensive material, there will be a course in business correspondence.

G E R M A N

Foundation course in C-language (beginners' level)

The foundation course based on 4 and 3 periods in the 1st and 2nd years should aim at developing an active vocabulary of approx. 1200-1700 words.

The foundation course based on 5+5 periods in the 2nd and 3rd years, should aim at developing an active vocabulary of approx. 1500 - 2000 words.

Pupils in the 5+5 periods course should, in addition to the beginners' books, study texts amounting to some 40-50 pages.

The amount of texts which can be read in addition to the material in the beginners' books will vary with the class and the books which are being used.

Advanced courses in C-language

2-period course in 2nd year:

50-75 pages are studied, depending on the organisation of the course.

5-period course in 3rd year: approx. 150 pages.

Combined course (foundation course/advanced course, 3+2 periods) in 2nd year:

50 pages in addition to the texts in the beginners' books.

Both literature and factual texts should be studied. The literary texts should include both prose and poetry, mainly contemporary. Texts from the different parts of the German-speaking area should be read.

The factual texts should constitute between one third and one half of the whole material.

Advanced courses in B-language

General alternative:

2-period course in 2nd year: approx. 100 pages.

5-period course in 3rd year: approx. 200 pages.

Combined course (foundation course/advanced course, 3+2 periods) in 2nd year:

approx. 150 pages.

The intensive reading should include a suitable selection of literature (prose and poetry), mainly contemporary. In the 3rd year older literature should also be read. Factual texts describing the society and culture of German-speaking countries should also be read intensively. The factual texts should make up at least one third of the total intensive reading.

The extensive reading should include both literature and factual texts, mainly contemporary. The pupils should have a certain freedom in their choice of extensive reading, and thus the opportunity to choose material which suits their interests and abilities. In the 3rd year the pupils are expected to read a complete work (novel, play or factual work) extensively. The selection of texts should cover the whole German-speaking area.

Commercial alternative:

2-period course in 2nd year:

approx. 75 pages.

5-period course in 3rd year:

approx. 125 pages.

Combined course (foundation course/advanced course, 3+2 periods) in 2nd year:

approx. 125 pages.

The intensive reading should include a suitable selection of literature (prose and poetry), mainly contemporary. A selection of factual texts describing economic, social and cultural conditions should also be read. At least half of the intensive reading should be material of this kind.

The extensive reading should be of the same kind as the intensive, about half literature and half factual.

In addition there will be a course in business correspondence.

RUSSIAN, FINNISH AND LAPPISH

RUSSIAN

Foundation course, C-language (for beginners)

The 4+3-period course aims at developing an active vocabulary of 800 - 1300 words.

The 5+5-period foundation course aims at developing an active vocabulary of 1000 - 1500 words. Pupils who take this course should read some 20 - 30 pages of texts in addition to their beginners' manuals.

Advanced course, C-language

2-period course in the 2nd year: Approx. 30 pages should be read.

5-period course in the 5th year: Approx. 75 pages should be read.

Combined course (foundation/advanced course, 3+2 periods) in the 2nd year: Approx. 30 pages should be read in addition to the manuals.

Advanced course, B-language

2-period course in the 2nd year: Approx. 50 pages should be read.

5-period course in the 3rd year: Approx. 100 pages should be read.

Combined course (foundation/advanced course, 3+2 periods) in the 2nd year: Approx. 100 pages should be read.

FINNISH

Foundation course, C-language (for beginners)

The 4+3-period course, as well as the 5+5-period foundation course in the 2nd and 3rd years, aims at developing an active vocabulary of 1000 - 1500 words.

Advanced course, C-language

2-period course in the 2nd year: Approx. 25 pages should be read.

5-period course in the 3rd year: Approx. 60 pages should be read.

Combined course (foundation/advanced course, 3+2 periods) in the 2nd year: Approx. 25 pages should be read in addition to the beginners' manuals.

Some of the texts should throw light on everyday life in Finland, on Finland's culture, history and social conditions.

Advanced course, B-language

2-period course in the 2nd year: Approx. 50 pages should be read.

At least a quarter of the total number of pages should be read intensively. However, the teacher is at liberty to make adjustments. One page read intensively equals four pages read extensively.

In classes where much time is spent on tapes, filmstrips, film, TV programmes, the quantity of extensive reading can be reduced within certain limits. For each complete school period spent on AV-teaching, the total amount of material which is read extensively may be reduced by 4 pages. The total reduction may not exceed approx. 50 pages.

3/4 page of more demanding reading, such as texts from early literary periods, counts as one standard page.

The total amount of material for each course must be compiled in such a way that it establishes a firm foundation for various forms of language practice.

Texts should be of high quality. However, this requirement should not prevent the pupils from indulging in lighter reading from time to time, as an aid to their reading skill.

The total amount of material for each course will include both literature and factual prose. The literary texts will include both prose and poetry, mainly contemporary. In advanced courses in A- and B-languages pupils would normally be in a position to read literature from early periods. This particularly applies to English.

Factual texts in all courses should constitute at least a third of the total material.

The courses should include material which demonstrates everyday speech.

5 ASSESSMENT

Pupils will receive a grade for overall achievement at the end of each year. In A- and B-languages, after the third year, one grade is given for written and one for oral skills. In C-language a single grade for both written and oral skills is given for each year.

Evaluation must be suited to teaching aims. The following may serve as a guide to the relationship between the four skills for which grades are given:

- ability to comprehend the spoken language ca. 20 %
- ability to speak the language ca. 30 %
- ability to read and understand texts ca. 20 %
- ability to express oneself in writing ca. 30 %

These percentages are only intended as general guidelines.

Emphasis should be given to the pupil's skill in independent use of the language. Also the standard of his pronunciation and the extent of his vocabulary must be considered, as well as the correctness with which he uses the language. Oral and written skills must be evaluated by the same standards.

In the advanced courses, assessment should also include the pupils' factual knowledge of material used in teaching, and their ability to explain a topic in the foreign language. The assessment will be based partly on the teacher's knowledge of the pupil's work throughout the course, and partly on test scores.

Students who have writing problems of various kinds should have the opportunity to make up for deficiency through increased emphasis on oral achievement. In the same way, pupils who have speech problems should be allowed to compensate for this through written achievement.

L I N G U I S T I C S

1 GENERAL INFORMATION

This is a one year course based on 3 periods a week. The syllabus is so designed that there is the minimum of overlapping with other courses in Norwegian. The course may be offered in the 2nd or 3rd year.

2 AIMS

The pupils should acquire

- an elementary knowledge of some linguistic concepts and approaches,
- practice in language observation through work with the Norwegian language,
- practice in expressing themselves freely and precisely, in speech and writing.

The aim of the subject is also to increase the pupils' interest in language as a means of communication in a general sense.

2.1 Comments on Aims

The subject has a threefold aim: knowledge of, observation of, and practice in, language, and it is important that there is interplay between these different aspects of the subject in the work done. If teacher and pupils so wish, they may put the main emphasis on only one or two of these aims.

Topics in the field of language policy must present different points of view. The pupils should study various forms of the language.

The course is not intended as remedial teaching for the compulsory course in Norwegian. It takes the compulsory course as its starting point, but develops independently in the direction of in-depth study of the topics covered.

Teaching should deal with both written and oral usage.

3 SYLLABUS TOPICS

3.1 How the aims affect the selection of material.

As a whole, the working material should be so organised that the pupils see the totality and continuity of the subject.

The teaching should be based on material suited to the pupils' knowledge of the subject and the time available. The whole of the material, also that which includes more theoretical topics, should be suitable for both independent and group work.

Theory must be presented clearly and simply and should be illustrated by examples.

For the introduction to elementary linguistics, a specific textbook or workbook will be required. For the topics of language observation and language practice, working material should be taken from various sources such as anthologies or topical readers, journals and newspapers. This will mean there will be various forms of presentation depending on the pupils' interest. This section of the instruction will also require tape and video recordings.

3.2 List of Topics

The list below is a maximum framework. As far as possible, all the headings should be covered.

A INTRODUCTION TO LINGUISTICS

What is linguistics?

Definition of the subject, brief history, linguistic methods

Language types and language families:

Dialect/language, language families and language affinity, synthetic and analytic languages

The language as a system:

Phonemes and morphemes, prosodic elements, stress and tone, quantity and quality

Words:

Word-formation, word families, word classes, etymology, synonyms, foreign and loan words, stock phrases and expressions

Syntax:

Time - tense, modality, concord, word order. To be studied to the degree the teacher finds necessary

Semantics:

Words' area of meaning, ambiguity and context, definitions

Relationship between speech and writing:

Phonemes/letters, principles of spelling, phonemic/phonetic script, historical/etymological spelling, international spelling

B DEVELOPMENT OF NORWEGIAN

Factors which may have influenced the development

Phonetic and grammatical relationships
Changes in vocabulary and meaning
Sociological conditions
Cultural development and communications
Language policy decisions

Factors determining standards in speech and writing

Tradition
Official language, orthographic norms
Dialects
Social and economic considerations
Personal ear for language
Geographic conditions, communications and administration

C THE LANGUAGE IN USE

Language analysis and language practice

Communication, relationship between language situation and language use.

Various forms of linguistic expression:

informational, appellative, expressive speech.

Modes of expression: report, commentary, summary, instructions, explanation, advertisement, poster, letter, letter to the editor, essay, feature article

Stylistic types: formal, neutral, informal prose;
personal/impersonal use of language;
subjective/objective use of language;
abstract/concrete style

Practice in analysis of language and style

Principles of textual development: logical/systematic, subsidiary topics/the whole, points/organisation, synthesis/antithesis, maintenance of interest/climax

Practical writing practice in connection with the various topics

5 ASSESSMENT

On completion of the course pupils will receive a grade for overall achievement. The grade will be based on both written and oral achievement.

The subjects aim at giving the pupils knowledge of the Norwegian language, insight into use of the language and the development of their own language ability. This must also be the basis for evaluation when the main emphasis has been on only one or two of the main aims of the subject.

Evaluation may be based on individual tests or on a combination of individual and group tests.

ELECTRONIC DATA PROCESSING

BASIC COURSE

1 GENERAL INFORMATION

This course gives an elementary introduction to electronic data processing for all pupils attending upper secondary school. In this group of pupils we find pupils who want a thorough knowledge of the subject, pupils who have chosen a vocation in which a certain knowledge of electronic processing is necessary, and pupils who want an introduction to computers out of personal interests.

The course can be offered as

- part of the five-period branch subject in the branches for natural science and social studies, the general area of study
- an integrated part of the branch subjects Practical office work and Practical shopkeeping (foundation course) and Practical office work with electronic data processing (advanced course I - Office and Administration branch), the area of study for clerical and commercial subjects
- an optional subject for all areas of study

The course consists of two periods per week for one school-year. It is the basis of the three-period advanced course.

2 LIST OF TOPICS

Core material

K1 Applications of computers

- examples from administration, trade and industry, society and everyday life, individual use (hobby, entertainment and leisure time), and new possibilities in connection with modern data communication
- a closer look at chosen examples with special attention to the user's situation (for instance in a shop, an office or an industrial enterprise)

K2 The impact of computer technology on the individual, on a company and on society

- positive and negative impact on working environment, economic life and organisation development
- private and public use of electronic data processing. How we can control it, and how we are affected by it - possibilities and dangers. Protection of personal data.

K3 Practical use of the computer

- demonstrations of and instructions in the use of the schools computer
- problem solving by elementary programming
- knowledge of the main units (input unit, output unit, external storage unit and the processing unit)
- short historical survey of the development of computer technology
- knowledge of essential features of modern computers and data media

K4 Computers and the future of the pupils

- trends of development: new and prospective applications, increased professional use, increased use in society, at home and in everyday life
- career opportunities, professional categories

Optional material

All pupils attending this course must study at least two optional topics relevant to their area of study/branch.

Pupils taking the course as part of the branch subject in the branches for natural science and social studies, the general area of study, must emphasize topic T8. Additional optional topics must be chosen from one of the groups T2, T3 or T7.

- T1 Example of application, areas of application
- T2 Main units of the computer
- T3 Historical survey of the development of computers
- T4 Trends of development, the future and electronic data processing
- T5 Excursion
- T6 Exhibition
- T7 Use of the school's computer

- practical use of a comprehensive standard program/ready-made program:
 - word processing system
 - administrative routines
 - mathematical or technical problems
 - execution of and/or analysis of polls etc.

T8 Programming

Programming in a high-level language (for instance BASIC). The course is a continuation of the programming listed among the core material, and comprises:

- input and output of numerical data
- library functions, including the tabulation function, and the use of different types of variables (for instance numeric, alphabetic and indexed variables)
- special structures as loops (double and single), searching, sorting, simple approximating methods
- use of algorithms and flowcharts in problem solving tasks

T9 Other topics

Comments on the list of topics

K3 The main object of this paragraph is to enable the pupils to solve simple problems by use of programming and to test their solutions on the computer. BASIC is used as examples of the language elements. If another programming language is used, the elements must correspond to the list given below:

Language element:	Example (BASIC)
Allocation of values and simple reading of numeric data	LET A = 2,5 INPUT B,C READ A,B DATA 10,15
Arithmetic operators (+ - */ ↑) and expressions	LET C = (A+B)/D ↑ 2
Conditional and unconditional jumps	IF A = 99 THEN 10 GO TO 100
Writing of text and numeric data	PRINT "HELLO", B; C
Comments	REM PROGRAM WRITTEN BY OLE

Structures:

Counting, accumulations

T8 This topic must contain the following language elements (examples given in BASIC):

- INPUT A\$, READ B\$/DATA "OLE", PRINT B\$
- FOR/NEXT
- IF A\$ = "FINISHED" THEN 9999
- SQR, INT, RND, TAB (or others according to requirements)
- DIM A(20), READ A(I)

The use of other programming languages is also permitted.

ELECTRONIC DATA PROCESSING

Advanced course, general area of study

1 GENERAL INFORMATION

This course proceeds from the two-period foundation course in data processing, and consists of three periods per week for one school-year. In the general area of study these two courses can be taken together as a five-period branch subject in the branches for natural sciences and social studies.

2 LIST OF TOPICS

The total amount of teaching periods is approx. 90, after deduction of a number of periods set apart for examination, tests, etc. The allocation of periods, as shown in the list of topics, should be considered as advisory.

Core material (60 periods)

K1 Revision of topics included in the two-period foundation course, listed under T8 (8 periods)

K2 Programming and operation of the school's computer, operating system and file management

- problem analysis, algorithm, coding, data collection, program execution, operation, error recovery and documentation

- programming methods and programming aids:

- structured programming

- the principle of main program and subprogram corresponding to GOSUB/RETURN

- self defined functions, extended use of library functions

- two-dimensional tables

- indexed text variables (sorting of text- and number variables)

- reading and writing on files

- operating systems, especially the operative system and the system commands of the school's computer

- storage in media with sequential and direct access to data

- register layout, selection of data from the register (complete file search)

- brief presentation of the layout of data bases

- K3 Standard programs (ready-made programs)
- standard programs and their use
- word processing
- K4 System design
- informations systems
- organising systems design
- different stages of systems design
- the Act relating to Worker Protection and working environment, framework agreements, local agreements
- Act concerning Recording of Personal Data etc.
- K5 Data technology and future prospects (5 periods)
- brief presentation of other programming languages
- telecommunications
- the information community

Optional material (30 periods)

- T1 Standard programs
Suggested topics:
- working out crosstables, sorting of - and search for information in a register
- solution of mathematical problems such as determination of zero points, numerical integration, adaptation of curves
- result analysis of practical work
- simulated physical, chemical or biological phenomena
- processing of statistics, time series with prognoses
- managerial accounting simulation and analyses, management games
- wages, invoicing and accounting
- T2 Computer technology
- binary codes, number systems and logical network
- telecommunication
- the history of data processing (development of hardware and software)
- T3 Numeric methods
- simple numeric methods applied on other branch subjects
- T4 Working with systems
- information systems
- analysis and development of object system control
- information analysis
- selection of technical accessories, and development of hardware oriented solutions
- organisation and implementation of system development projects

T5 Projects

- processing material from interviews or observations of several variables
- simulation of physical, biological or socio-economic processes
- the social implications of data processing
- member files
- development of member filing routines (organising the routines, their different stages, efficiency)
- documentation (symbols for machine configuration, problem- and hardware-oriented flow plans (charts), data relation schemas)

file layout

The impact of computers on the individual (Act concerning recording of Personal Data, licencing, right of inspection)

The impact of computers on working environment (Act relating to worker protection and working environment, cooperation, licences, information, framework agreements)

running standard programs for member files

program development

other topics

T6 Other topics

The pupils may consult their teacher with a view to concentrating on topics of particular interest to them.

1. The first part of the report deals with the general situation of the country and the progress of the work done during the year.

2. The second part of the report deals with the work done in the various departments of the country during the year.

3. The third part of the report deals with the work done in the various departments of the country during the year.

4. The fourth part of the report deals with the work done in the various departments of the country during the year.

5. The fifth part of the report deals with the work done in the various departments of the country during the year.

6. The sixth part of the report deals with the work done in the various departments of the country during the year.

7. The seventh part of the report deals with the work done in the various departments of the country during the year.

8. The eighth part of the report deals with the work done in the various departments of the country during the year.

9. The ninth part of the report deals with the work done in the various departments of the country during the year.

10. The tenth part of the report deals with the work done in the various departments of the country during the year.

