

UDC Structure & Tables

Principle of Organization

The organization of knowledge in UDC is discipline-based. This means that concepts are subsumed and placed in the field under which they are studied. This particular feature is usually implemented in UDC by re-using the same concept in various combinations with the main subject, e.g. a code for language in common auxiliaries of language is used to derive numbers for ethnic grouping, individual languages in linguistics and individual literatures. Or, a code from the auxiliaries of place, e.g. (410) United Kingdom, uniquely representing the concept of United Kingdom can be used to express 911(410) Regional geography of United Kingdom and 94(410) History of United Kingdom.

UDC Hierarchic Structure

UDC's most innovative and influential feature is its ability to express not just simple subjects but relations between subjects. This facility is added to a hierarchic structure, in which knowledge is divided into ten classes, then each class is subdivided into its logical parts, each subdivision is further subdivided, and so on. The more detailed the subdivision, the longer the number that represents it. This is made possible by the decimal notation (see [UDC notational system](#)).

Notation	Description
5	Mathematics. Natural sciences
53	Physics
539	Physical nature of matter
539.1	Nuclear physics. Atomic physics. Molecular physics
539.12	Elementary and simple particles (charge less than 3)
539.120	Theoretical problems of elementary particles physics
539.120.8	Strong interaction, including experiments
539.120.81	Quantum chromodynamics
539.120.811	Lattice QCD

In UDC, the universe of information (all recorded knowledge) is treated as a coherent system, built of related parts, in contrast to a specialised classification, in which related subjects are treated as subsidiary even though in their own right they may be of major importance. Thus specialists may often be led to related information of which they would otherwise have been unaware.

UDC Tables

There are two kinds of tables in UDC:

1. Main tables

Also called the 'schedules', these contain the outline of the various disciplines of knowledge, arranged in 10 classes and hierarchically divided (as explained in 'Structure' above). They are numbered from 0 to 9.

Notation Description

0	Science and Knowledge. Organization. Computer Science. Information Science. Documentation. Librarianship. Institutions. Publications
1	Philosophy. Psychology
2	Religion. Theology
3	Social Sciences
4	vacant
5	Mathematics. Natural Sciences
6	Applied Sciences. Medicine, Technology
7	The Arts. Entertainment. Sport
8	Linguistics. Literature
9	Geography. History

Each main UDC class may also contain tables called special auxiliaries (or special auxiliary numbers), which express aspects that are recurrent, but in a limited subject range. These are usually facets of concepts related to operations, techniques, processes, materials, agents etc. They are listed only in particular sections of the main tables. Special auxiliary numbers can be recognized as they all begin with one of these three specific symbols/indicators: .0 (point nought), - (hyphen) or ' (apostrophe). Any UDC number beginning with any of these symbols can be combined with any other UDC number in its designated area of application.

2. Common auxiliary tables

These tables contain common auxiliary signs and common auxiliary numbers.

2.1 Common Auxiliary Signs

The signs (e.g. the plus, the stroke, the colon) are used to link two (or more) numbers, so expressing relations of various kinds between two (or more) subjects.

Notation	Description
+	Coordination. Addition (plus sign). Table 1a
/	Consecutive extension (oblique stroke sign). Table 1a
:	Simple relation (colon sign). Table 1b
::	Order-fixing (double colon sign). Table 1b
[]	Subgrouping (square brackets). Table 1b
*	Introduces non-UDC notation (asterisk). Table 1h
A/Z	Direct alphabetical specification. Table 1h

2.2 Common Auxiliary Numbers

These are tables enumerating concepts that denote recurrent characteristics, applicable over a range of subjects; the auxiliary is simply added at the end of the number for the subject. Common auxiliaries, are applicable throughout the main tables, and represent notions such as place, language of the text and physical form of the document, which may occur in almost any subject.

Notation	Description
=...	Common auxiliaries of language. Table 1c
(0...)	Common auxiliaries of form. Table 1d
(1/9)	Common auxiliaries of place. Table 1e
(=...)	Common auxiliaries of human ancestry, ethnic grouping and nationality. Table 1f
"..."	Common auxiliaries of time. Table 1g helps to make minute division of time e.g.: "1993-1996"

Notation Description

-0...	Common auxiliaries of general characteristics: Properties, Materials, Relations/Processes and Persons. Table 1k.
-02	Common auxiliaries of properties. Table 1k
-03	Common auxiliaries of materials. Table 1k
-04	Common auxiliaries of relations, processes and operations. Table 1k
-05	Common auxiliaries of persons and personal characteristics. Table 1k this table is repeated

UDC Synthetic Structure

UDC is an analytico-synthetic and/or faceted classification. It allows an unlimited combination of attributes of a subject and relationships between subjects to be expressed. UDC codes from different tables can be combined to present various aspects of document content and form, e.g. 94(410)"19"(075) History (main subject) of United Kingdom (place) in 20th century (time), a textbook (document form). Or: 37:2 Relationship between Education and Religion. Complex UDC expressions can be accurately parsed into constituent elements.

Example:

Tourist maps of Grafton County (USA, Maine) from 1970s as a pdf file will be expressed as a combination of simple UDC numbers as follows:

348.48(734.211.4)"197"(084.3)(0.034.2PDF)

This expression is created from the following simple UDC numbers:

348.48 Tourism

(734.211.4) auxiliary number of place: Grafton County [USA, Maine]

"197" time auxiliary number for 1970s

(084.3) auxiliary number of form - map

(0.034.2) auxiliary number of form - carrier - digital file

UDC Notation

The symbols chosen for a UDC notation are language independent and universally recognizable - the arabic numerals, supplemented by a few other signs familiar from mathematics and ordinary punctuation. The signs and symbols in UDC are used to break the number sequence and allow the separation (i.e. parsing of) pre-combined concepts into constituent simple concepts.

UDC uses a decimal, hierarchically and syntactically expressive notation.

Decimal notation

The arrangement is based on the decimal system: every number is thought of as a decimal fraction with the initial point omitted, and this determines the filing order, but, for ease of reading, it is usually punctuated after every third digit. Thus, after 61 'Medical sciences' come the subdivisions 611 to 619; under 611 'Anatomy' come its subdivisions 611.1 to 611.9; under 611.1

come all of its subdivisions before 611.2 occurs, and so on; after 619 comes 62. One advantage of this system is that it is infinitely extensible, and when new subdivisions are introduced, they need not disturb the existing allocation of numbers.

Hierarchically expressive notation

UDC notation is hierarchically expressive. Hierarchically expressive notation mirrors the hierarchy and each digit or letter of the notation will represent one level in division. The deeper in the hierarchy the concept is, the longer the notation. Classifications with hierarchically expressive notations are much friendlier to navigate and use. When presenting a classification hierarchy in print or online there will be no need to show the indentation of subordinate classes as this will be obvious from the notation itself, e.g.

599.74	Carnivora (carnivorans)
599.744	Canidae. Ursidae. Musteloidea
599.744.2	Ursidae
599.744.21	Ursus (genus)
599.744.211	Brown bears (grizzly)
599.744.212	Polar bears

Syntactically expressive notation

UDC is an analytico-synthetic classification. This means that individual UDC classmarks can be used to build more complex expressions similar to the way we use words to create complex sentences. Special symbols that are used to connect, start or end simple UDC numbers enable the parsing and understanding of complex expressions. This type of notational system is called syntactically-expressive notation. The synthesis of UDC numbers follow fixed syntactic rules that are valid and can be applied to the entire UDC system. Because of the syntactic rules and strict application of notational symbols, UDC complex expressions can be deconstructed accurately into simple UDC numbers.

599.744.212	Polar bear (main number)
57.017.7	Respiration. Metabolism (special auxiliary number)
"327.502"	February (common auxiliary number of time)

This can be combined as **599.744.212.017.7"327.502"** , meaning: **polar bears - metabolism - month of February.**