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→ Classification of Instructional Programs (CIP) Canada 2016

# Classification of Instructional Programs (CIP) Canada 2016

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## Background

The Classification of Instructional Programs (CIP) was developed in 1980 by the National Center for Education Statistics (NCES) in the United States. NCES released updates in 1985, 1990, 2000 and 2010. CIP Canada 2016 is the third Canadian version of this classification; the first two versions being CIP Canada 2000 and CIP Canada 2011. The CIP Canada 2016 structure, classes and titles are the same as the CIP Canada 2011 structure, classes and titles.

CIP is designed to classify 'instructional programs', which are defined as follows:

A combination of courses and experiences that is designed to accomplish a predetermined objective or set of allied objectives such as preparation for advanced study, qualification for an occupation or range of occupations or simply the increase of knowledge and understanding. (Chismore and Hill, *A Classification of Educational Subject Matter*, 1978, NCES, p. 165).

Although CIP was specifically designed for the classification of instructional programs, it has also been used to classify courses, and will likely continue to be used for that purpose. CIP can also be used to classify and understand other units. For example, one might use CIP codes to classify institutions by programs offered, students and graduates by programs studied or faculty by programs taught.

The organizing principle behind CIP is 'field of study'. At Statistics Canada, a field of study is defined as a "discipline or area of learning or training" (Statistics Canada, ARCHIVED – 2006 Census Dictionary, Catalogue no. 92-566-XIE).

Prior to adopting CIP, Statistics Canada had several field of study classifications. CIP was chosen to replace them because it was a detailed and proven classification with a 20-year history, was up to date, had an established mechanism for updates and a track record of regular updates, and had a proper hierarchical coding structure. As an added advantage, it would provide comparability with the United States. CIP is now the Statistics Canada standard for field of study classification.

## Structure of the Classification

The Classification of Instructional Programs, Canada is a three-tiered hierarchical arrangement of classes with successive levels of disaggregation.

1. The first level is made up of 'series', which are identified using two-digit codes. The series are the most general groupings of related programs. CIP Canada 2016 contains 49 series.
2. The second level is made up of 'subseries', which are identified using four-digit codes. The subseries provide an intermediate grouping of programs that have comparable content and objectives. CIP Canada 2016 contains 387 subseries.
3. The third level is made up of 'instructional program classes', which are identified using six-digit codes. Instructional program classes represent the specific instructional programs and are the most detailed level within CIP. They are the basic unit of analysis used in reporting instructional programs. CIP Canada 2016 contains 1,689 instructional program classes.

The format for class labels at the series level consists of a two-digit code followed by a period, then by the program title. For example: 01. Agriculture, agriculture operations and related sciences.

The format for class labels at the subseries level consists of the two-digit series code, followed by a period, then by a further two digits. The code is followed by the program title. For example: 01.01 Agricultural business and management. There is at least one subseries within every series.

The format for class labels at the instructional program class level consists of the four-digit subseries code, followed by a further two digits. This is followed by the program title. For example: 01.0101 Agricultural business and management, general. There is at least one instructional program class within every subseries.

Program descriptions identify the objectives and content of the instructional programs. Program descriptions using the phrase "any program that focuses on" describes academic and general programs. Program descriptions using phrases such as "program that prepares individuals to" or "program that generally prepares individuals to" describe programs designed to prepare individuals for specific occupations.

**Sample program descriptions:**

01.	<b>Agriculture, agriculture operations and related sciences.</b> This series comprises instructional programs that focus on agriculture and related sciences and that prepare individuals to apply specific knowledge, methods, and techniques to the management and performance of agricultural operations.
01.01	<b>Agricultural business and management.</b> This subseries comprises instructional program classes 01.0101 to 01.0199.
01.0102	<b>Agribusiness/agricultural business operations.</b> This instructional program class comprises any program that prepares individuals to manage agricultural businesses and agriculturally related operations within diversified corporations. These programs include courses in agriculture, agricultural specialization, business management, accounting, finance, marketing, planning, human resources management, and other managerial responsibilities.

Within each subseries, instructional program classes are listed in numerical sequence. Classes with a more general focus appear at the beginning of the sequence. A residual class appears at the end of the sequence to cover instructional programs that belong in the subseries but are not covered by another instructional program class. For example, within subseries 01.01, Agricultural business and management, instructional program class 01.0101 Agricultural business and management, general appears first and instructional program class 01.0199, Agricultural business and management, other appears last.

Occasional gaps may occur in the numerical sequence of classes. They result either from deletions of classes that appeared in previous editions of CIP or from moves of classes to new locations in the classification.

Titles are generally one word or phrase, such as 'Psychology' or 'Civil engineering', that conveys the most commonly used or accepted name describing a program.

In some cases, more than one title may be used for the same instructional program. To reflect this, the title of the corresponding instructional program uses words or phrases separated by slashes. This is done in the following situations:

- two or more commonly accepted names exist for the same program, or
- the same program has different names at different educational levels, or
- the program has undergone a recent name change but many institutions still use the older name for the program.

For example, subseries 26.07. Zoology/animal biology includes programs that focus on the study of zoology and/or animal biology.

**CIP Canada 2016 update methodology**

Statistics Canada's release of CIP Canada 2016 is an update only, it is not a revision of CIP.

There have been no changes to the CIP classes or structure for this update. The update consists of adding new illustrative educational program examples to ensure that CIP remains current.

This update maintains the high degree of commonality between the two national versions of CIP, continues to permit close comparability between Canadian and U.S. educational data, and facilitates a common approach to future classification revisions.

Illustrative examples accompany all CIP Canada 2016 instructional program classes. Illustrative examples are examples of the content that belongs in the corresponding class. They appear under the heading "Illustrative example(s)". As in the past, the examples were developed based mainly on program names provided in response to the previous Census of Population. The wording used thus reflects the way respondents would typically describe these programs. However, CIP Canada 2016 has also tried to include more program titles actually used at Canadian postsecondary institutions.

Inclusions are being introduced to CIP in CIP Canada 2016. Inclusions are borderline cases that belong in the corresponding class. They appear under the heading "Inclusion(s)". Inclusions are similar to illustrative examples, in that they help clarify the content that belongs in each class.

CIP Canada 2016 has only four inclusions: "victimology" in 45.0401 Criminology, "art restoration" in 50.0703 Art history, criticism and conservation, "fundraising" in 52.0206 Non-profit/public/organizational management, and "fundraising management" in 52.0206 Non-profit/public/organizational management.

Exclusions also accompany most instructional program classes. Exclusions clarify the boundaries of the instructional program class by identifying related instructional program classes and similar programs that are classified elsewhere. They appear under the heading "Exclusion(s)". The instructional programs cited in the Exclusions were selected from among the examples of related instructional program classes.

The lists of illustrative examples and exclusions are meant to facilitate the use of CIP, not to be exhaustive.

**Comparison of CIP 2011 and CIP 2016****Classes**

There were no new classes, splits, mergers or deletions. The CIP 2016 classes are the same as the CIP 2011 classes.

**Structure**

There was no restructuring of the classification. The CIP 2016 structure is the same as the CIP 2011 structure.

**Titles**

There were no changes to class titles. The names of the CIP 2016 classes are the same as the names of the CIP 2011 classes.

### Examples

The existing examples were reviewed for usefulness and accuracy, and many examples of new instructional programs were added. Care was taken to ensure that all content illustrated by the examples in one language was also conveyed by the examples in the other language. The examples used are illustrative of possible survey responses and of actual program names.

## Variant of CIP – Primary groupings

A variant of CIP has been developed jointly by Statistics Canada and the National Center for Education Statistics. It is based on work undertaken as a part of the creation of the North American Product Classification System (NAPCS) by Canada, the United States and Mexico.

The variant is comprised of thirteen 'primary groupings' that are a convenient and useful basis for summarizing and analysing more detailed classes. This variant must be used for the presentation or analysis of highly aggregated data.

Two general observations about the primary groupings should be kept in mind:

1. Groupings are based on field of study and are independent of the level at which the study was undertaken. Series 21. Pre-technology education/pre-industrial arts programs and series<sup>CAN</sup> 53. High school/secondary diploma and certificate programs are exceptions to this rule; these two series are included in the Other category.
2. Primary groupings comprise entire series, with one exception: series 30. Multidisciplinary/Interdisciplinary Studies has been split into its constituent subseries. Those subseries have then been grouped with the closest equivalent series.

The primary groupings are as follows:

### Variant of CIP – Primary grouping

Primary groupings	Constituent series and subseries
00 Personal improvement and leisure	32. Basic skills (not for credit)
	33. Citizenship activities (not for credit)
	34. Health-related knowledge and skills (not for credit)
	35. Interpersonal and social skills (not for credit)
	36. Leisure and recreational activities (not for credit)
	37. Personal awareness and self-improvement (not for credit)
01 Education	13. Education
02 Visual and performing arts, and communications technologies	10. Communications technologies/technicians and support services
	50. Visual and performing arts
03 Humanities	16. Aboriginal and foreign languages, literatures and linguistics
	23. English language and literature/letters
	24. Liberal arts and sciences, general studies and humanities
	30.13 Medieval and renaissance studies
	30.21 Holocaust and related studies
	30.22 Classical and ancient studies
	30.29 Maritime studies
	38. Philosophy and religious studies
	39. Theology and religious vocations
	54. History
Primary groupings	Constituent series and subseries
	55. French language and literature/letters
04 Social and behavioural sciences and law	05. Area, ethnic, cultural, gender, and group studies
	09. Communication, journalism and related programs
	19. Family and consumer sciences/human sciences
	22. Legal professions and studies
	30.05 Peace studies and conflict resolution

	30.10 Biopsychology
	30.11 Gerontology
	30.14 Museology/museum studies
	30.15 Science, technology and society
	30.17 Behavioural sciences
	30.20 International/global studies
	30.23 Intercultural/multicultural and diversity studies
	30.25 Cognitive science
	30.26 Cultural studies/critical theory and analysis
	30.28 Dispute resolution
	30.31 Human computer interaction
	30.33 Sustainability studies
	42. Psychology
	45. Social sciences
05 Business, management and public administration	30.16 Accounting and computer science
	44. Public administration and social service professions
	52. Business, management, marketing and related support services
06 Physical and life sciences and technologies	26. Biological and biomedical sciences
	30.01 Biological and physical sciences
	30.18 Natural sciences
	30.19 Nutrition sciences
	30.27 Human biology
	30.32 Marine sciences
	40. Physical sciences
	41. Science technologies/technicians
07 Mathematics, computer and information sciences	11. Computer and information sciences and support services
	25. Library science
	27. Mathematics and statistics
	30.06 Systems science and theory
	30.08 Mathematics and computer science
	30.30 Computational science
08 Architecture, engineering, and related technologies	04. Architecture and related services
	14. Engineering
	15. Engineering technologies and engineering-related fields
	30.12 Historic preservation and conservation
	46. Construction trades
<b>Primary groupings</b>	<b>Constituent series and subseries</b>
	47. Mechanic and repair technologies/technicians
	48. Precision production
09 Agriculture, natural resources and conservation	01. Agriculture, agriculture operations and related sciences
	03. Natural resources and conservation
10 Health and related fields	31. Parks, recreation, leisure and fitness studies
	51. Health professions and related programs
	60. Dental, medical and veterinary residency programs
11 Personal, protective and transportation services	12. Personal and culinary services

	28. Military science, leadership and operational art
	29. Military technologies and applied sciences
	43. Security and protective services
	49. Transportation and materials moving
12 Other	21. Pre-technology education/pre-industrial arts programs
	30.99 Multidisciplinary/interdisciplinary studies, other
	53. High school/secondary diploma and certificate programs

## Assigning CIP (Classification of Instructional Programs) codes to instructional programs

To ensure consistency at the national level, Statistics Canada codes program data submitted from household surveys and from administrative data in institutions' files. This coding is done with the help of software that has been developed to provide a combination of auto-coding and computer-assisted coding. The basic approach is described below. This will be of particular interest to institutions or organizations that need to do their own CIP coding.

The basic coding tool is the classification manual available in electronic format.

In addition to the manual, those coding programs using CIP should ensure that they also have the following information:

- program title
- program description
- type of institution
- duration of study
- nature of the academic award

With this information at hand, the coding of a single-discipline instructional program is relatively straightforward. The coder selects all likely series and from among those chooses the most applicable. The process is then repeated at the subseries level, and again at the instructional program class level. This top-down process is facilitated by referring to the illustrative examples and exclusions in the manual.

Several examples are presented to show the coding process.

Suppose the coder has the following information:

- program title: Canadian history
- program description: five-credit MA through department of history, faculty of arts and sciences
- type of institution: university
- duration of study: one year postgraduate
- academic award: MA

The academic award confirms that the program is a credit course. The coder will next try to identify the appropriate two-digit series. In this case, from the title and description, series 54. History is the clear choice. Within series 54., only subseries 54.01 History exists. Within 54.01, instructional program class 54.0107 Canadian history is selected. By referring to the illustrative examples, the coder will find that Canadian history is explicitly part of this class. This confirms the results of the top-down process. The institution type and duration of study were not used.

In a second case, the coder has the following information:

- program title: Mathematical physics
- program description: five-credit MSc through department of physics, faculty of science
- type of institution: university
- duration of study: postgraduate
- academic award: MSc

The academic award confirms that the program is a credit course. The coder will next try to identify the appropriate two-digit series—in this case, series 27. Mathematics and statistics, series 40. Physical sciences and series 41. Science technologies/technicians are possibilities. Based on the program title and description, the program is not pure mathematics, nor is it technological in nature. This rules out series 27. and 41. Within series 40., subseries 40.08 Physics is most applicable. Within 40.08, instructional program class 40.0810 Theoretical and mathematical physics is selected. By referring to the illustrative examples, the coder will find that Mathematical physics is part of this class. Use of the illustrative examples in this way confirms the results of the top-down process. The institution type and duration of study were not used.

In a third case, the coder has the following information:

- program title: Film law
- program description: Master of Laws through faculty of law with specialization in film law
- type of institution: university
- duration of study: postgraduate
- academic award: Master of Laws (LLM)

The academic award confirms that the program is a credit course. The coder will next try to identify the appropriate two-digit series. Possible candidates are series 22. Legal professions and studies and series 50. Visual and performing arts. Series 50. focuses on the actual performance. Series 22. prepares individuals for the legal profession and related research. Based on the program title and description, series 22. is the clear choice. This is an advanced law degree and therefore within series 22 the program belongs in subseries 22 02 Legal research and advanced professional studies (Post-

advanced law degree and diploma), main series 22, the program belongs in subseries 22.02 Legal research and advanced professional studies (LLB/JD). Within 22.02, instructional program class 22.0212 Intellectual property law (LLM, LLD, JSD/SJD) is selected. Referring to the illustrative examples confirms this.

In a fourth case, the coder has the following information:

- program title: Truck and coach mechanic
- program description: This apprenticeship certificate program completes the in-school requirements for the truck and coach technician apprentices. Students are offered instruction in subjects such as trade practices and auxiliary systems, engine systems, electrical systems, fuel systems, drive trains, and steering, suspension, and brake systems.
- type of institution: community college
- duration of study: one year
- academic award: certificate

The academic award and duration of study, together, confirm that the program is a credit course. The top-down process continues as previously. Using the institution type, program title and program description, the coder will choose series 47. Mechanic and repair technologies/technicians, subseries 47.06 Vehicle maintenance and repair technologies, and then instructional program class 47.0613 Medium/heavy vehicle and truck technology/technician. By referring to the illustrative examples, the coder will find that Truck and coach mechanic is part of this class and thereby confirm the coding choice.

The coding of combined majors, also called 'double majors' or 'joint majors,' and multidisciplinary programs follows the same top-down approach. The difference here involves the choice of residual class in the event that there is no specific class for the combined program. The approach to combined majors and multidisciplinary studies is as follows:

- Proceeding top-down, the coder tries to find an instructional program class that explicitly covers the combined program. If such a class is found, the program can normally be assigned directly to that class. For example, a double major involving 11.0501 Computer systems analysis/analyst and 27.0301 Applied mathematics, general would be coded to 30.0801 Mathematics and computer science.
- Otherwise, if the component disciplines belong to the same subseries-but not the same instructional program class-the program can normally be coded to the residual category (a class ending in 99) within that subseries. For example, a double major involving 14.0902 Computer hardware engineering and 14.0903 Computer software engineering would be coded to 14.0999 Computer engineering, other.
- Otherwise, if the component disciplines belong to the same series-but not the same subseries-the program can normally be coded to the residual category (a class ending in 9999) within that series. For example, a double major involving 14.0902 Computer hardware engineering and 14.1101 Engineering mechanics would be coded to 14.9999 Engineering, other.
- Otherwise, if the component disciplines belong to different series, the program is normally coded to instructional program class 30.9999 Multidisciplinary/interdisciplinary studies, other. For example, a double major involving 14.0902 Computer hardware engineering and 27.0301 Applied mathematics, general would be coded to 30.9999 Multidisciplinary/interdisciplinary studies, other.
- An exception to the use of 30.9999 involves combined/joint language majors. Language studies are covered by series 16. Aboriginal and foreign languages, literatures and linguistics, series 23. English language and literature/letters and series 55. French language and literature/letters. Where programs involve combinations belonging to two or more of these series, the combined programs are coded to residual instructional program classes within series 16. Aboriginal and foreign languages, literatures and linguistics. For example, a combined French/Spanish major is coded to 16.0999 Romance languages, literatures and linguistics, other. For similar reasons, a combined French/German major or a combined French/English major is coded to 16.9999 Aboriginal and foreign languages, literatures and linguistics, other.

## Revision cycle

CIP (Classification of Instructional Programs) has a 10-year revision cycle. Revising a statistical classification involves a complete review of the conceptual basis of the classification as well as a review of user needs and available tools. Part of that review involves determining whether proposed changes would work better than the current practices and thus warrant a revised version of the classification.

Between revisions, updates can be made to incorporate new instructional programs being offered.

### Date modified:

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