

Submission: Proposed New Occupation Code for Bicycle Mechanics in the National Occupational Classification System

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This submission proposes the creation of a new occupation code for **bicycle mechanics**. The proposed category details are found in the next section. Currently, the occupation of bicycle mechanic is covered under the National Occupational Classification (NOC) system's **NOC 73209 - Other Repairers and Servicers**.

This submission includes an analysis of how the bicycle mechanic occupation is considered in other nations and provides background to the recommendations made in this submission.

The analysis includes a review of the six English language websites of national and supranational occupational code systems. This review reveals that Canada's current classification is not aligned to the way the occupation of bicycle mechanics is classified globally. Being better aligned with our major trading partner's occupational codes will support diversification of our international trade.

Furthermore, having an NOC occupation code for bicycle mechanics will allow for the collection of vital economic statistics needed for the Canadian bicycle industry and other stakeholders to make more effective decisions that will stimulate greater economic growth and achieve Canada's sustainability objectives.

The submission is supported by stakeholders from industry, educational, institutional, and environmental organizations. The list of supporting stakeholders is found in Appendix 1.

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Proposal

This submission proposes the establishment of a new NOC occupation code with the following details on the occupation.

NOC Code 72424 - Bicycle mechanics

Bicycle mechanics perform diagnostics, repair, service and assemble non-electric and electric bicycles (e-bikes) and electric kick-scooters (e-scooters). They are employed by bicycle shops, bike service and community hubs, sports retailers, bicycle and e-scooter rental companies, bicycle and parts manufacturers and by bicycle fleet owners and others. Apprentices are also included in this unit group.

Example titles

- Bicycle mechanic
- Bicycle technician
- Bicycle repairer
- Bicycle assembler
- Bicycle tester
- Bicycle inspector
- Bike mechanic
- Bike technician
- E-bike mechanic
- E-bike technician
- Scooter technician
- E-scooter technician

Main duties

This group performs some or all of the following duties:

- Talk with bicycle owners to identify problems with their bicycles
- Perform diagnostics by identifying and troubleshooting mechanical, structural and electronic issues in bicycles using specialised equipment
- Estimate the costs of repairs and provides quotes
- Adjust, repair or replace equipment or accessories such as handlebars, stands, lights and seats
- Build, adjust, repair and replace bicycle wheelsets, and fit, repair and maintain tires
- Adjust, repair or replace bicycle braking, drivetrain and suspension systems and components
- Service and tune electronic gear shifting and other advanced systems for high-end bicycles
- Maintain and repair electric bicycle and electric kick-scooter components such as motors, batteries, controllers and wiring
- Test bicycles to ensure proper and safe performance of all components and systems
- Perform scheduled maintenance and service including lubrication and topping up fluids on bicycles
- Advise customers on work performed and condition of their bicycle
- Assemble and build bicycles from parts or kits, and modify bicycles according to customer specifications, including fitting specialised parts and accessories.

Employment requirements

- Completion of secondary school and training courses or a vocational program in bicycle mechanics is usually required.

- Completion of a two-year apprenticeship with an employer and master bicycle mechanic or through a structured apprenticeship program is usually required.
- College-level courses in customer service, retail sales and operation, and marketing are usually required for advancement.
- Alternative entry into this occupation can be done through several years of on-the-job training and experience.

Additional Information

- Progression to supervisory and management positions is possible with experience and increased education.

Exclusions

- Motorcycle, all-terrain vehicle and other related mechanics (72423) for motor scooters
- Other small engine and small equipment repairers (72429)

Breakdown summary

Broad occupational category

[7 – Trades, transport and equipment operators and related occupations](#)

TEER

2 – Occupations usually require a college diploma or apprenticeship training of two or more years; or supervisory occupations

Major group

[72 – Technical trades and transportation officers and controllers](#)

Sub-major group

[724 – Technical maintenance trades](#)

Minor group

[7242 – Small engine and equipment mechanics and related repairers \(including electrical components\)](#)

Table 1: Recommended Changes to Other Occupational Codes

Code	Name	Typical Job Titles	Recommended Change	Rationale
72014	Contractors and supervisors, other construction trades, installers, repairers and services	Bicycle repair shop supervisor	Remove reference	Bicycle repair shop supervisors are bicycle mechanics and many repair shops only employ one to four mechanics. In the majority of cases, the bicycle repair shop manager (60020) acts as the supervisor.
73209	Other repairers and servicers	Bicycle mechanic, bicycle repairer	Remove reference	Creation of a new occupational code for bicycle mechanics.

92024	Supervisors, other products manufacturing and assembly	Bicycle assembly foreman/woman, bicycle assembly supervisor	Remove reference	Bicycle mechanics is a required skill to supervise and act as foreman/woman for bicycle assembly. Senior or master bike mechanics carry out this position.
94219	Other products assemblers, finishers and inspectors	Bicycle assembler, bicycle inspector	Remove reference	Bicycle assemblers and bicycle inspectors have the same skill sets and qualifications as bicycle mechanics.

Submission Details

1. Introduction

This report is a follow up to a bicycle industry training initiative undertaken by the City of Toronto and partially funded by the Ontario Skill Development Fund in 2022-2023.¹

The bicycle is often referred to as a “bike”. However, to avoid confusion with motorcycles, which are also referred to as “bikes,” we only use the term “bicycles” throughout this report. Similarly, kick scooters (electric and human powered) are often referred to as “scooters”.² Similarly, motor scooters (a “light” version of a motorcycle) are also often referred to simply as “scooters”. This report focuses on bicycles and “scooters” in the sense of kick scooters.

The occupation of bicycle mechanic is currently covered under **NOC 73209 - Other Repairers and Servicers**. This is an occupation code that covers over 100 job titles in very different industry sectors and occupations. Establishing a separate occupation code for bike mechanics will align Canada’s classification system with how the bicycle mechanic occupation is classified in other nations. A review of the six English language websites of national (USA, United Kingdom, Australia, New Zealand) and supranational (the United Nations and the European Union) occupational code systems reveals that Canada is not aligned to the way bicycle mechanics are classified globally. Full details of the classification of the bicycle mechanic occupation in these other nations can be found in Appendix 3.

Table 2: Classification of the Bicycle Mechanic Occupation in Other Countries

Country	Occupation Classification System	Occupation Code	Name of Occupation
Canada	National Occupation Classification (NOC) System 2021	73209	Other Repairers and Servicers
UN Agency: International Labour Organization	International Standard Classification of Occupations 2008 (ISCO-08) ³	7234	Bicycle and Related Repairers
European Union	European Skills, Competences, Qualifications and Occupations (ESCO) 2017	7234.1	Bicycle Mechanic
USA	Standard Occupational Classification (SOC) 2018	49-3091.00	Bicycle Repairers
United Kingdom	Standard Occupational Classification (SOC) 2020	5223/02	Bicycle Mechanics
Australia	Occupation Standard Classification for Australia (OSCA) 2024	351432	Bicycle Technician
New Zealand	National Occupation List (NOL) 2024	321215	Bicycle Technician

While there are a number of economic statistical codes exclusive to the bicycle industry in Canada, including industry codes (NAICS), product codes (NAPCS) and education codes (CIP)⁴ there is a lack of an occupation code (NOC) for the specialty occupation that is exclusive to the industry. Adoption of this proposal rectifies this situation.

2. What is NOC 73209 and why Bicycle Mechanics Should not be Included in it.

NOC 7309 - Other Repairers and Servicers is a collection of occupations that have little relationship to each other. Even just considering NOC 7309 occupations that start with the letter “A” demonstrates the category’s exceptionally broad nature: accordion repairer; adding machine repairer; air compressor repairer; airport equipment maintenance repairer, and archery bow finisher. While the collecting together of this broad list of occupations may have been sensible in the context of historical developments, such as the individual occupations described employing few individuals in Canada, the category ultimately does not meet the NOCS criteria found in the Introduction to the National Occupational Classification (NOC) 2021 Version 1.0⁵ of:

“An occupation is defined as a collection of jobs, sufficiently similar or identical in work or tasks performed to be grouped under a common label for classification purposes,”

As outlined below, the occupation of bike mechanic is found in many NAICS codes and publicly available information indicates that there is a significant number employed in this occupation. Research indicates that these employment numbers are expected to grow dramatically in the coming year.

NOC 73209 represents such a diverse, unrelated list of occupations that the statistical information collected and available to stakeholders⁶ is of limited value in making decisions on workforce attraction and career decision making, for employees establishing wage rates, or the creation of training and apprenticeship programs to meet employment needs.

3. What Industries Employ Bicycle Mechanics?

The occupation of bicycle mechanic is found in an increasingly diverse number of industry classification codes. Tracking the employment of this job occupation requires a dedicated NOC code.

Table 3: Industries that Employee Bicycle Mechanics

Industry	Comments	Example
459113 - Cycling equipment and supplies specialty retailers		Sweet Pete's Bike Shop
336990 - Other transportation equipment manufacturing	Covers different vehicle types, including bicycle.	DeVinci
8114 - Personal and household goods repair and maintenance	Bicycles are listed in the general category but not found in any of the subcategories.	
414470 - Amusement and sporting goods merchant wholesalers	Includes bicycles (except motorized) merchant wholesalers.	Stoneridge Cycle
415190 - Recreational and other motor vehicles merchant wholesalers	This NAICS code includes motorized bicycles.	
Importers of bicycles	Bicycles are often shipped disassembled to reduce shipping costs.	
Bicycle service centers	These firms do not retail but focus on services. Often, these are mobile repair services.	Durham Cycles

Community bicycle hubs	These are operated by a range of organization types.	Sheridan College Bike Hub
Bicycle rental and bike-share organizations		Bike Share Toronto (operated by the Toronto Parking Authority)
Bike fleet owners		Toronto Police Services Bicycle Patrol Unit
Sports retailers		Mountain Equipment Company (MEC); Sporting Life
Big box retailers		Canadian Tire
Bike couriers	While many couriers are part of the gig economy, there are courier companies that own bike fleets that they maintain.	Send It Couriers
Shipping Services		Purolator
Bicycle Tour Guides		Toronto Bicycle Tours
Workforce Employment Training Organizations		Learning Enrichment Foundation

4. Where are Bicycle Mechanics Referenced in other NOC Codes?

A review of NOC codes identified that bicycle mechanic job titles are found in a number of occupational codes and this makes it challenging to collect accurate data on the occupation. This submission recommends that a number of these occupational job titles be rolled into a single NOC code for bicycle mechanics.

Table 4: References to Bicycle Industry Occupations found in the NOCS

Code	Name	TEER	Typical Job Titles
60020	Retail and wholesale trade managers	0	Bicycle shop manager
64100	Retail salespersons and visual merchandisers	4	Bicycle salesperson - retail
64320	Tour and travel guides	4	Bicycle tour guide
65211	Operators and attendants in amusement, recreation and sports	5	Bicycle rental attendant
72014	Contractors and supervisors, other construction trades, installers, repairers and services	2	Bicycle repair shop supervisor Recommendation: Merge
73209	Other repairers and servicers	3	Bicycle mechanic, bicycle repairer Recommendation: New code
92024	Supervisors, other products manufacturing and assembly	2	Bicycle assembly foreman/woman, bicycle assembly supervisor Recommendation: Merge
94219	Other products assemblers, finishers and inspectors	4	Bicycle assembler, bicycle inspector Recommendation: Merge

5. Estimates of Employment in the Bicycle Mechanic Occupation in Canada

The bicycle industry has been experiencing dramatic growth globally. The global bicycle industry had \$45 billion US sales in 2017 which grew by 40% to \$62 billion US in 2023. The market is expected to continue to grow and reach at least \$70 billion US by 2029.⁷ While actual global employment numbers of bicycle mechanics are difficult to obtain, one report from major European bicycle industry associations indicated that there were at least 50,000 bicycle mechanics employed by bicycle retailers in Europe in 2017.⁸

While employment numbers in the bicycle industry are not available in Canada⁹, the City of Toronto produces a directory of the local bicycle industry with a listing of over 270 bicycle retailers and direct related industries and the industry survey done for the directory indicates that firms have an average employment of three workers with about one-third of them being bike mechanics. This indicates there are at least 270 bicycle mechanics in the Toronto region directly employed in the bicycle industry (and does not include those bike mechanics employed in related sectors).¹⁰

The growth in the use of bicycles is an important element of many urban climate change strategies and can help overcome transportation infrastructure deficiencies and reduce congestion. A study done by the City of Toronto in 2024 indicates that for Toronto to achieve its sustainable transportation targets in its climate change strategy it will require the use of bicycles as a transportation mode to increase by 21% annually through to 2040. This will require an employment of 7,500 bicycle mechanics to maintain and service this number of bicycle trips in the year 2040. It should be noted that the levels projected are aligned to many current levels and growth rates already in place in many urban areas with decarbonization pathways Toronto will need to emulate or surpass to reach key targets, such as Paris.¹¹

6. The Value for Having a Separate NOC code for Bicycle Mechanics

As outlined by the Employment and Social Development Canada's NOC website:

"The National Occupational Classification (NOC) is a system for describing the occupations of Canadians. It gives statisticians, labour market analysts, career counsellors, employers, and individual job seekers a standardized way of describing and understanding the nature of work."

Specific NOC codes provide critical information for data collection, labour market analysis and career planning and job seeking.¹² Currently, with bicycle mechanics falling under NOC 73209, it is not possible to derive any information on this occupation from the National Occupational Classification system.

A cursory review of job boards across Canada indicates that there is a significant demand for bicycle mechanics. However, this cannot be tracked or documented through the current NOC classification. A dedicated NOC code for bicycle mechanics will resolve this and provide greater clarity on the demand for bicycle mechanic workers in Canada.

Having a NOC code for bicycle mechanics will provide labour market analysis that will support decision-making for the training and skill development of the occupation. A review of international training requirements for bicycle mechanics reveals Canada lags significantly behind its major trading partners. More details on this are found in the next section of this report.

While Canada has an educational statistic code for bicycle mechanic training (**Classification of Instructional Programs (CIP): 47.0610 - Bicycle mechanics and repair technology/technician**), there is no formalized training for bicycle mechanics in Canada outside of Quebec, which recently introduced

provincially accredited bicycle mechanic training.¹³ As the demand for bicycle mechanics grows in Canada, it will be challenging to set national standards without having a recognizable NOC code that can provide guidance. There is a potential for divergence of trade classifications and standards done at the provincial level without this national framework. A NOC code for bicycle mechanics will potentially prevent interprovincial trade barriers from developing.

A review of trade listings at the provincial level indicates that all trades (red seal, regulated and unregulated) are linked to an occupation code dedicated to that occupation. A critical first step to effectively access government funding to support training and apprenticeship programs for bicycle mechanics is to have the bicycle mechanic occupation acknowledged in the NOC system.

Furthermore, discussions with training and education organizations on developing bicycle mechanic training and apprenticeship programs are hampered with no labour force statistics on the occupation and no supporting funding for the trade due to a lack of a clearly defined federal occupation.

7. What is the Training, Education, Experience and Responsibility (TEER) Level for Bicycle Mechanics?

Identification of the appropriate TEER level is an important part of this submission as it guided the development of training and apprenticeship programs for bicycle mechanics, as well as identifies the placement of the new occupation code in the NOC system.¹⁴

Bicycle technology has advanced considerably in the last 20 years with improvements including hydraulic disc brakes, advanced electronic gears, belt transmissions and suspension systems. Many of these mechanical/electrical/electronic systems were previously only found on motorcycles and automobiles. As the technology has advanced, so has the requirement for more skilled work training and workplace learning. This has been reflected in various nations’ occupation listings for bike mechanics increasing their skill level ratings in recent years. This includes the USA¹⁵ in March 2025 and Australia¹⁶ in December 2024, which now grade bicycle mechanics as having the same skill level of Automobile Service Technicians and Mechanics, Plumbers, and Pharmacy Technicians (USA) and automotive mechanic (Australia)

Our review (found in Appendix 2.2) of the training, education, experience and responsibility (TEER) level associated with the bicycle mechanic occupational codes of other nations indicates that internationally the occupation is at the TEER 2 Level. Currently NOC 73209, where bicycle mechanics is found, is TEER Level 3.

Note that most provinces do not consider bicycle mechanics as a skilled trade, even though internationally bicycle mechanics is identified as a skilled trade with a TEER level of 2. Having a NOC code for bicycle mechanics is an important first step in having occupation acknowledged as a trade in Canada.

Table 5: Comparison of Skill Levels found in Bicycle Mechanic Occupations Globally

Country	Occupation Classificati on System	Occupation Code	Name of Occupation	TEER Level
Canada	NOC 2021	73209	Other Repairers and Servicrs	Level 3
UN	ISCO-08	7234	Bicycle and Related Repairers	Skill levels not identified

European Union	ESCO 2017	7234.1	Bicycle Mechanic	Done at the country level: Denmark – Level 2 Holland – Level 2 Germany – Level 2 with incremental training starting at Level 3
USA	SOC 2018	49-3091.00	Bicycle Repairers	Level 2
United Kingdom	SOC 2020	5223/02	Bicycle Mechanics	Level 2 or 3
Australia	OSCA 2024	351432	Bicycle Technician	Level 2
New Zealand	NOL 2024	321215	Bicycle Technician	Level 2

8. Inclusion of E-bikes and Other Micromobility Vehicles in the new Bicycle Mechanics NOC Code

This submission includes those workers that have the necessary skills to work on non-motorized and electric power-assisted bicycles commonly referred to as electric bicycles or e-bikes. Battery power assisted bicycles sales have increased dramatically in the last five years and was not a major part of the industry prior to the late 2010s. This will make the occupation aligned with the product code NAPCS 442121 – Bicycles which includes electric power-assisted bicycle. This is also aligned with other nation's bicycle mechanic occupational codes that have been updated since 2020 (United Kingdom – 2020; Australia – 2024; New Zealand – 2024) that includes e-bikes.

Table 6: Inclusion of E-bikes in the Bicycle Mechanic Occupation

Country	Occupation Classification System	Occupation Code	Name of Occupation	References to E-Bikes and motorized bicycles
Canada	NOC 2021	73209	Other Repairers and Servicers	None
UN	ISCO-08	7234	Bicycle and Related Repairers	Only non-motorized transportation equipment mentioned
European Union	ESCO 2017	7234.1	Bicycle Mechanic	Not mentioned
USA	SOC 2018	49-3091.00	Bicycle Repairers	Not mentioned
United Kingdom	SOC 2020	5223/02	Bicycle Mechanics	E-bikes are included
Australia	OSCA 2024	351432	Bicycle Technician	Electric bikes (e-bikes) are mentioned as a specialization
New Zealand	NOL 2024	321215	Bicycle Technician	Servicing of electric motors is included

The types of human and low-powered vehicles has expanded considerable over the last decade. This submission proposes to include those micromobility vehicles that are human powered, power assisted or low power (speed limited) vehicles that are regularly used for utilitarian or commuter travel. This primarily includes electric kick-scooters (e-scooters) but would exclude, as examples: roller blades, skate boards, hover-boards.

9. Location of the Proposed Code for Bicycle Mechanics in the NOC Hierarchy

A review of the location of the bicycle mechanic occupation in other nations' occupation classification system was undertaken for this submission.

Table 7: Occupational Grouping of Bicycle Mechanics in Occupation Classification System

Country	Occupation Classification System	Occupation Code	Name of Occupation	Location of Occupation Code in the Classification's Hierarchy
Canada	NOC 2021	73209	Other Repairers and Servicers	732 - Building maintenance installers, servicers and repairers
UN	ISCO-08	7234	Bicycle and Related Repairers	723 – Machinery, Mechanics & Repairers
European Union	ESCO 2017	7234.1	Bicycle Mechanic	723 - Machinery mechanics and repairers
USA	SOC 2018	49-3091.00	Bicycle Repairers	49-3000 - Vehicle and Mobile Equipment Mechanics, Installers, and Repairers
United Kingdom	SOC 2020	5223/02	Bicycle Mechanics	52 - Skilled metal, electrical and electronic trades
Australia	OSCA 2024	351432	Bicycle Technician	351 - Automotive Technicians and Trades Workers
New Zealand	NOL 2024	321215	Bicycle Technician	3212 - Motor Mechanics

This review shows that the occupation's placement in the hierarchy of occupational categories is not consistent. However, the growth in the use of bicycles is based on utilitarian or commuter travel, rather than recreational or sports use, and hence this submission asserts that the new NOC should be placed in the category closely associated with NOC code for motorcycle mechanics. The review for this submission found that in many other countries, the training often progressively moves through different skill levels of two-wheel vehicles; from non-motorized bicycles through to motorized two wheeled vehicles, such as e-bikes, mopeds, and then motorcycles, such as in Germany.¹⁷

NOC Categories

7242 Small engine and equipment mechanics and related repairers (including electrical components)

72423 Motorcycle, all-terrain vehicle and other related mechanics

72429 Other small engine and small equipment repairers

It is noted here that the second digit of the NOC code is related to its TEER rating, which is covered in a section above.

This submission proposes that the occupation of bicycles mechanics be assigned **NOC code 72424**.

Appendix 1: Listing of Supporting Stakeholders

The following is the list of stakeholders that support this submission for the proposed changes in the NOC system to include a NOC code specific to the bicycle mechanics occupation.

Table 8: List of Stakeholders that Support this Submission

Organization Name	Sector	Location	Contact Name	Position	Email
Members of the Bike Training Collective Canada					
The Centre for Active Transportation at Clean Air Partnership	Environmental NGO	ON	Sophie Callahan	Project Manager	tcat@cleanairpartnership.org
Point A	Environmental NGO	ON	Dorinda So	Executive Director	dso@pointa.ca
CultureLink Settlement and Community Services	Community Services	ON	Namrah Kan	Project Manager	bikehub@culturelink.ca
Charlie's Freewheels	Community Bike Hub	ON	Stephanie Orlando	Executive Director	stephanie@charliesfreewheels.ca
The Learning Enrichment Foundation	Workforce Development	ON	Peter Frampton	Executive Director	pframpton@lefca.org
Other Stakeholders					
Canada Electric Bike Association	Industry Association	ON	Michael Pasquali	Executive Director	info@cebassociation.ca
Cycle Toronto	Cycling NGO	ON	Michael Longfield	Executive Director	info@cycleto.ca
Foresight	Environmental NGO	BC	Jeanette Jackson	Chief Executive Officer	jjackson@foresightcac.com
Labour Market Information Council	Economic Research	ON	Ken Chatoor	Director of Research and Strategic Foresight	ken.chatoor@lmic-cimt.ca
Ontario Clean Technology Industry Association	Industry Association	ON	Paul Connor	Executive Director	pconnor@octia.ca
Our Community Bikes	Community Bike Hub	BC	Laine Hughes	Shop Manager	lhughes@ourcommunitybikes.org
School of Cities, University of Toronto	Educational Institution	ON	Lanrick Bennett	Urbanist-In-Residence	lanrick.bennettjr@utoronto.ca

Appendix 2: Comparisons of Bicycle Mechanic Occupation in other National Occupational Classification Systems

Appendix 2.1: Table 9: Comparison of Occupation Descriptions

Country	Occupation	Description
Canada	73209: Other repairers and servicers	<i>Other repairers and servicers repair and service a wide variety of products, such as cameras, scales, musical instruments, coin machines, vending machines, sporting goods and other miscellaneous products and equipment. They are employed by product specialty repair shops and service establishments.</i>
Canada	72423: Motorcycle, all-terrain vehicle and other related mechanics	<i>Motorcycle, all-terrain vehicle and other related mechanics test, repair and service motorcycles, motor scooters, snowmobiles, outboard motors, forklifts and all-terrain vehicles. They are employed by service shops of motorcycle dealers and retailers and by independent service establishments. Apprentices are also included in this unit group.</i> https://noc.esdc.gc.ca/Structure/NOCProfile?GocTemplateCulture=en-CA&code=72423&version=2021.0
UN	7234: Bicycle and Related Repairers	<i>Bicycle and related repairers fit, maintain, service and repair the mechanical and related equipment of bicycles, rickshaws, baby carriages, wheelchairs and similar non-motorized transport equipment.</i>
EU	7234.1: Bicycle Mechanics	<i>Bicycle mechanics maintain and repair a variety of bicycle models and component parts. They may perform customized alterations, according to their client's preferences.</i>
USA	49-3091.00: Bicycle Repairers	<i>Repair and service bicycles.</i>
UK	5223/02: Bicycle Mechanics	<i>Bicycle mechanics maintain and repair bicycles and component parts. They may perform customised alterations.</i>
Australia	351432: Bicycle Technician	<i>Performs diagnostics, repairs, assembly and servicing of electric and regular bicycles and scooters.</i>
New Zealand	321215: Bicycle Technician	<i>Undertakes bicycle diagnostics and assembles and services electric and mechanical components of a bicycle including electronic gear shifting systems or motors.</i>
Proposed Canada	Bicycle Mechanics	<i>Bicycle mechanics perform diagnostics, repair, service and assemble non-electric and electric bicycles (e-bikes) and electric kick-scooters (e-scooters). They are employed by bicycle shops, bike service and community hubs, sports retailers, bicycle and e-scooter rental companies, bicycle and parts manufacturers and by bicycle fleet owners and others. Apprentices are also included in this unit group.</i>

Appendix 2.2: Table 10: Comparison of Skill Levels and Requirements

Country	Occupation	Skill Level
Canada	73209: Other repairers and servicers	Some secondary school education is usually required. Completion of college or other courses relevant to a particular equipment or product repair or completion of several months of on-the-job training is usually required. TEER Level: 3
Canada	72423: Motorcycle Mechanic	• Completion of secondary school and training courses or a vocational program is usually required. • For motorcycle mechanics, completion of a three- to four-year apprenticeship program or a combination of over three years of work experience and high school or college courses in motorcycle repair is usually required to be eligible for trade certification. • Motorcycle mechanic trade certification is compulsory in Ontario and Alberta and available, but voluntary, in Newfoundland and Labrador, Nova Scotia, Prince Edward Island, New Brunswick and British Columbia. • Red Seal endorsement is also available to qualified motorcycle mechanics upon successful completion of the interprovincial Red Seal examination. • For recreation vehicle technicians, completion of a two- to four-year apprenticeship program or college, high school or industry courses combined with several years of related work experience or several years of on-the-job training are required. • Trade certification for recreation vehicle service technicians is compulsory in Alberta and available, but voluntary, in Newfoundland and Labrador, Nova Scotia, Prince Edward Island, New Brunswick, Quebec, Ontario, Manitoba, British Columbia and the Yukon. • Red Seal endorsement is also available to qualified recreation vehicle service technicians upon successful completion of the interprovincial Red Seal examination. • Other mechanics in this unit group may require several years of on-the-job training. TEER Level 2
UN		Not listed
EU		It is left to each member state to establish the skill levels and qualifications of the occupations. Details of country requirements can be found in end notes. ¹⁸ TEER Level 2
USA		Note: this has recently been updated to require an apprenticeship program at the same level as an automotive mechanic. TEER Level 2 Education: These occupations usually require a high school diploma. Related Experience: Some previous work-related skill, knowledge, or experience is usually needed. For example, a teller would benefit from experience working directly with the public.

		Job Training: Employees in these occupations need anywhere from a few months to one year of working with experienced employees. A recognized apprenticeship program may be associated with these occupations. Occupations with similar skill levels: Automobile Service Technicians and Mechanics (TEER 2), Plumbers (TEER 2), and Pharmacy Technicians (TEER 2).
UK		<u>You can get into this job through:</u> • a college course • an apprenticeship • working towards this role • specialist private training courses College: You could take a course to get a qualification and some of the skills needed to be a cycle mechanic. Courses include: cycle maintenance; cycle mechanics. Entry requirements for these courses vary. Apprenticeship: You could apply for a place on a Bicycle Mechanic Level 2 Intermediate Apprenticeship. This can take between 1 and 2 years to complete. Entry requirements: You'll usually need: some GCSEs, usually including English and maths, or equivalent, for an intermediate apprenticeship Work: You could start as a retail assistant in a bike shop or bike hire outlet. You could then apply for a job as a trainee mechanic if they have a repair workshop. You'll need good customer service skills, a keen interest in cycling and some knowledge of cycle repairs. Other Routes: You could study for technical cycle maintenance qualifications offered by an industry body like Cytech. Not clear which TEER Level: 2 or 3
Australia		Skill level: 3 The OSCA has 5 skill levels with Level 1 being the highest. Skill Level 3 occupations have a level of skill commensurate with: AQF Certificate III which includes at least two years of on-the-job training, or AQF Certificate IV. At least three years of relevant experience may substitute for the formal qualification. In some cases, relevant experience and/or on-the-job training may be required in addition to the formal qualification. Occupations at Skill Level 3 include: Automotive Electrician (TEER 2), Bookkeeper (TEER 2), Butcher (TEER 3), Dressmaker or Tailor, Early Childhood Educator (TEER 2), Electrical Fitter (TEER 2), Firefighter (TEER 2), Hairdresser (TEER 3), Real Estate Agent, and Senior Beef Cattle Station Worker.

New Zealand		Skill Level 3 The NOL has 5 skill levels – with #1 having the highest skills. Skill Level 3 requires a Bachelor degree or higher qualification, or at least five years of relevant experience may substitute for the formal qualification (New Zealand Qualifications and Credentials Framework (NZQCF) Level 7-10/NOL Skill Level 1) TEER Level 2
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Table 11: Canadian TEER categories and examples of jobs

TEER: training, education, experience and responsibilities

TEER	Occupation types	Examples
TEER 0	Management occupations	Advertising, marketing and public relations managers Financial managers
TEER 1	Occupations that usually require a university degree	Financial advisors Software engineers
TEER 2	Occupations that usually require a college diploma apprenticeship training of 2 or more years, or supervisory occupations	Computer network and web technicians Medical laboratory technologists
TEER 3	Occupations that usually require a college diploma apprenticeship training of less than 2 years, or more than 6 months of on-the-job training	Bakers Dental assistants and dental laboratory assistants
TEER 4	Occupations that usually require a high school diploma, or several weeks of on-the-job training	Home child care providers Retail salespersons and visual merchandisers
TEER 5	Occupations that usually need short-term work demonstration and no formal education	Landscaping and grounds maintenance labourers Delivery service drivers and door-to-door distributors

Appendix 3: Details of the Bicycle Mechanic Occupation in National Occupational Classification Systems

Table 12: List of Occupation Codes for Bike Mechanics

Country	Occupation Classification System	Occupation Code (with hyperlink)	Name of Occupation	Comments
Canada	National Occupation Classification (NOC) System 2021	73209	Other Repairers and Servicers	Bike mechanic is mentioned here amongst over 100 different occupations and job titles
UN Agency: International Labour Organization	International Standard Classification of Occupations 2008 (ISCO-08)	7234	Bicycle and Related Repairers	No direct link to the occupation – search from here.
European Union	European Skills, Competences, Qualifications and Occupations (ESCO) 2017	7234.1	Bicycle Mechanic	
USA	Standard Occupational Classification (SOC) 2018	49-3091.00	Bicycle Repairers	
UK	Standard Occupational Classification (SOC) 2020	5223/02	Bicycle Mechanics	No direct webpage could be found for the UK's SOC's occupation descriptions.
Australia	Occupation Standard Classification for Australia (OSCA) 2024	351432	Bicycle Technician	
New Zealand	National Occupation List (NOL) 2024	321215	Bike Technician	This is the general list - need to scroll to the code.

Canada NOC 2021 – 73209: Other repairers and servicers

<https://noc.esdc.gc.ca/Structure/NOCProfile?GocTemplateCulture=en-CA&code=73209&version=2021.0>

Other repairers and servicers repair and service a wide variety of products, such as cameras, scales, musical instruments, coin machines, vending machines, sporting goods and other miscellaneous products and equipment. They are employed by product specialty repair shops and service establishments.

Index of titles

Accordion repairer; Adding machine repairer; Air compressor repairer; Airport equipment maintenance repairer; Archery bow finisher; Archery bow finisher - sporting goods manufacturing; Archery bow repairer; Archery bow repairer - sporting goods manufacturing; Automobile wrecker; Automotive dismantler; Automotive maintenance equipment servicer; Awning and tent repairer; Beer-dispensing equipment repairer; **Bicycle mechanic; Bicycle repairer**; Billiard and bowling equipment installer-repairer; Billiard cue weigher; Billiard table repairer; Billiard table servicer; Boat propeller repairer; Bow repairer; Bows repairer - stringed instruments; Camera repairer; Camera repairman/woman; Dictaphone repairer; Dictaphone servicer; Domestic sewing machine mechanic; Domestic sewing machine repairer; Electric sign repairer; Electric toy repairer; Farebox repairer; Fire equipment repairer; Fire equipment servicer; Fire extinguisher repairer; Gas meter repairer; Gas meter servicer; Gas meter tester; Golf club head adjuster; Golf club repairer; Guitar repairer; Gyroscope repairer; Gyroscope repairman/woman; Hand tool repairman/woman; Hydraulic unit repairer; Industrial belt repairer; Instrument salvage inspector; Juke box mechanic; Machinery salvager; Mechanical meter repairer; Meter repairer; Meter servicer; Musical instrument repairer; Musical instrument tester; Musical instrument tuner; Neon sign repairer; Net mender; Net repairer; Organ tuner; Oriental rug repairer; Parking meter repairer; Parking meter servicer; Percussion instrument repairer; Photofinishing equipment repairer; Piano action adjuster; Piano action regulator; Piano repairer; Piano stringer; Piano technician; Piano tone regulator; Piano tuner; Piano tuner-technician; Pipe organ tuner and repairer; Pipeline safety valve repairer; Pipeline valve repairer; Pneumatic tool repairer; Pneumatic tube repairer; Pneumatic unit tester and repairer; Pressure control calibrator; Railway rolling stock air valve repairer; Respirator servicer and fitter; Scaffold repairer; Scale mechanic; Scale repairer; Service technician - home health care equipment; Sewing machine servicer – domestic; Shaker repairer; Sieve repairer; Ski equipment repairer; Speedometer repairer; Sporting goods repairer; Sports equipment repairer; Spray gun repairer; Steam meter repairer; Stone saw setter; Stringed instrument repairer; Surveying and optical instrument repairer; Surveying and optical instrument technician; Survival equipment repairer; Taximeter repairer; Thermostat repairer; Torque wrench calibrator; Transcribing machine servicer; Vending machine mechanic; Vending machine repairer; Violin repairer; Water meter repairer; Wind instrument repairer

Main duties

This group performs some or all of the following duties:

- Inspect products to determine the requirement for repair
- Repair or replace defective or worn-out parts and components using hand, power or specially designed tools
- Test and adjust repaired products for proper functioning
- Perform routine maintenance
- May calibrate products using hand tools.

Employment requirements

Some secondary school education is usually required.

Completion of college or other courses relevant to a particular equipment or product repair or completion of several months of on-the-job training is usually required.

Additional information

Progression to supervisory positions is possible with experience.

Some mobility may occur among workers in this unit group.

Exclusions

Contractors and supervisors, other construction trades, installers, repairers and servicers (72014) locksmith (in 72999 Other technical trades and related occupations)

UN ISCO-08 - 7234: Bicycle and Related Repairers

7234	Bicycle and Related Repairers
Index of occupational titles	Mechanic, bicycle Mechanic, perambulator Mechanic, rickshaw: cycle Mechanic, wheelchair Repairer, bicycle Repairer, pedal cycle Repairer, perambulator Repairer, wheelchair
Major group	7 Craft and Related Trades Workers
Sub-major group	72 Metal, Machinery and Related Trades Workers
Minor group	723 Machinery Mechanics and Repairers
Definition	Bicycle and related repairers fit, maintain, service and repair the mechanical and related equipment of bicycles, rickshaws, baby carriages, wheelchairs and similar non-motorized transport equipment.
Tasks include	Tasks include - (a) examining, servicing and repairing bicycles and other non-motorized transport equipment; (b) cleaning and lubricating bearings and other moving parts; (c) replacing and repairing components and accessories, such as brakes, gears, driving chain mechanism, wheels, and handle bars; (d) changing tyres and controlling air pressure; (e) spray-painting frames; (f) assembling new bicycles, wheelchairs and similar non-motorized equipment.
Included occupations	Examples of the occupations classified here: - Bicycle mechanic - Bicycle repairer - Perambulator repairer - Wheelchair repairer
Excluded occupations	Some related occupations classified elsewhere: - Moped repairer - 7231 - Motorized rickshaw mechanic - 7231

European Commission ESCO 2017- 7234.1 Bicycle Mechanic

<https://esco.ec.europa.eu/en/classification/occupation?uri=http%3A%2F%2Fdata.europa.eu%2Fesco%2Foccupation%2F336cf331-8082-4a0c-bf5f-e7c54706211c>

Craft and related trades workers -> Metal, machinery and related trades workers -> Machinery mechanics and repairers -> Bicycle and related repairers -> bicycle mechanic

Description

Bicycle mechanics maintain and repair a variety of bicycle models and component parts. They may perform customized alterations, according to their client's preferences.

Alternative Labels

bicycle fixer	bicycle maintenance technician	bicycle repairer
bicycle repairman	bicycle shop assistant	bicycle shop attendant
bicycle shop worker	bicycle technician	bike mechanic
bike repairer	bike shop assistant	bike shop attendant
bike shop worker	bike technician	cycle mechanic
cycle repairer	cycle technician	scooter mechanic
scooter repairer	scooter technician	

Skills & Competences

Essential Skills and Competences

apply company policies, assemble bicycles, maintain braking system, maintain customer service, maintain equipment, maintain work area cleanliness, perform repairs on bicycles, purchase supplies, replace defect components, tune bicycles, use repair manuals, wash bicycles

Essential Knowledge

bicycle mechanics

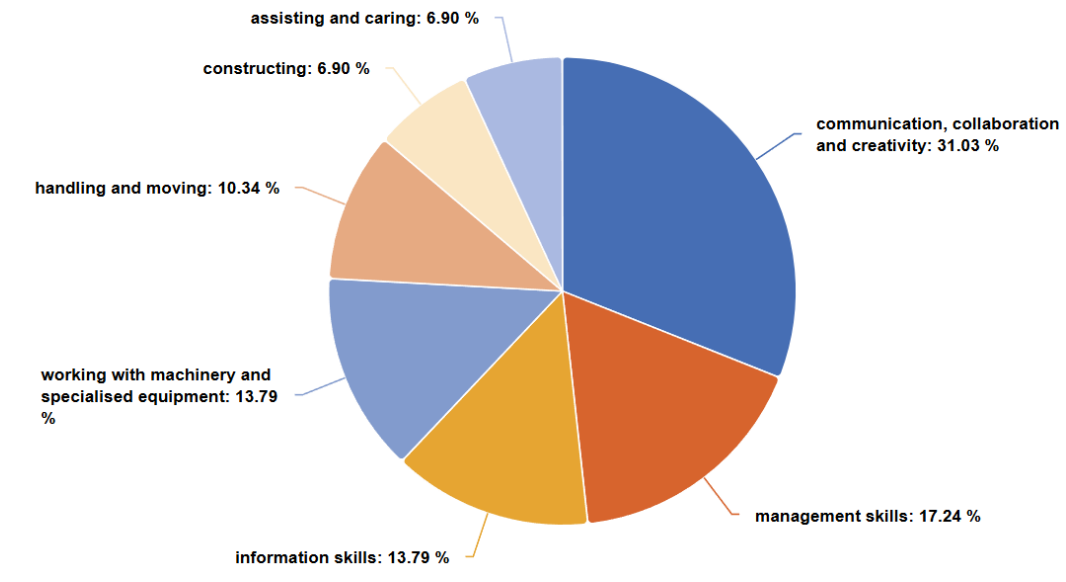
Optional Skills and Competences

administer appointments apply technical communication skills assist customers create solutions to problems develop professional network ensure compliance with warranty contracts issue sales invoices keep personal administration keep stock records maintain professional administration maintain records of maintenance interventions maintain relationship with suppliers manage a small-to-medium business manage schedule of tasks repair electric bicycles sell bicycles train employees

Optional Knowledge

electric bicycles, electric drives

Skills & Competences



USA SOC 2018 – 49-3091.00: Bicycle Repairers

<https://www.onetonline.org/link/summary/49-3091.00>

Repair and service bicycles.

Sample of reported job titles: Bicycle Fitter, Bicycle Mechanic, Bicycle Repair Technician, Bicycle Repairman, Bicycle Service Technician, Bicycle Technician, Bike Mechanic

Occupation-Specific Information

Tasks

- Install and adjust brakes and brake pads.
- Related occupations
- Help customers select bicycles that fit their body sizes and intended bicycle uses.
- Related occupations
- Align wheels.
- Related occupations
- Assemble new bicycles.
- Related occupations
- Sell bicycles and accessories.
- Related occupations
- Install, repair, and replace equipment or accessories, such as handlebars, stands, lights, and seats.
- Related occupations
- Install new tires and tubes.
- Related occupations
- Install and adjust speed and gear mechanisms.
- Related occupations
- Clean and lubricate bicycle parts.
- Related occupations
- Order bicycle parts.
- Related occupations
- Disassemble axles to repair, adjust, and replace defective parts, using hand tools.
- Related occupations
- Build wheels by cutting and threading new spokes.
- Related occupations
- Shape replacement parts, using bench grinders.
- Related occupations
- Repair holes in tire tubes, using scrapers and patches.
- Related occupations
- Estimate costs of repairing bicycles and write service tickets.
- Related occupations
- Make adjustments to bicycles to improve customer fit and riding position.

Occupational Requirements

Work Activities

- Selling or Influencing Others — Convincing others to buy merchandise/goods or to otherwise change their minds or actions.
- Performing for or Working Directly with the Public — Performing for people or dealing directly with the public. This includes serving customers in restaurants and stores, and receiving clients or guests.
- Updating and Using Relevant Knowledge — Keeping up-to-date technically and applying new knowledge to your job.
- Getting Information — Observing, receiving, and otherwise obtaining information from all relevant sources.
- Handling and Moving Objects — Using hands and arms in handling, installing, positioning, and moving materials, and manipulating things.
- Assisting and Caring for Others — Providing personal assistance, medical attention, emotional support, or other personal care to others such as coworkers, customers, or patients.
- Communicating with Supervisors, Peers, or Subordinates — Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.
- Repairing and Maintaining Mechanical Equipment — Servicing, repairing, adjusting, and testing machines, devices, moving parts, and equipment that operate primarily on the basis of mechanical (not electronic) principles.
- Identifying Objects, Actions, and Events — Identifying information by categorizing, estimating, recognizing differences or similarities, and detecting changes in circumstances or events.
- Making Decisions and Solving Problems — Analyzing information and evaluating results to choose the best solution and solve problems.
- Documenting/Recording Information — Entering, transcribing, recording, storing, or maintaining information in written or electronic/magnetic form.
- Guiding, Directing, and Motivating Subordinates — Providing guidance and direction to subordinates, including setting performance standards and monitoring performance.
- Inspecting Equipment, Structures, or Materials — Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects.
- Organizing, Planning, and Prioritizing Work — Developing specific goals and plans to prioritize, organize, and accomplish your work.
- Performing General Physical Activities — Performing general physical activities includes doing activities that require considerable use of your arms and legs and moving your whole body, such as climbing, lifting, balancing, walking, stooping, and handling materials.
- Establishing and Maintaining Interpersonal Relationships — Developing constructive and cooperative working relationships with others, and maintaining them over time.
- Judging the Qualities of Objects, Services, or People — Assessing the value, importance, or quality of things or people.
- Providing Consultation and Advice to Others — Providing guidance and expert advice to management or other groups on technical, systems-, or process-related topics.
- Controlling Machines and Processes — Using either control mechanisms or direct physical activity to operate machines or processes (not including computers or vehicles).
- Scheduling Work and Activities — Scheduling events, programs, and activities, as well as the work of others.
- Resolving Conflicts and Negotiating with Others — Handling complaints, settling disputes, and resolving grievances and conflicts, or otherwise negotiating with others.
- Training and Teaching Others — Identifying the educational needs of others, developing formal educational or training programs or classes, and teaching or instructing others.

- Communicating with People Outside the Organization — Communicating with people outside the organization, representing the organization to customers, the public, government, and other external sources. This information can be exchanged in person, in writing, or by telephone or e-mail.
- Coordinating the Work and Activities of Others — Getting members of a group to work together to accomplish tasks.

Detailed Work Activities

- Install vehicle parts or accessories.
- Adjust vehicle components according to specifications.
- Explain technical product or service information to customers.
- Assemble mechanical components or machine parts.
- Align equipment or machinery.
- Sell products or services.
- Order materials, supplies, or equipment.
- Perform basic equipment maintenance.
- Disassemble equipment for maintenance or repair.
- Grind parts to required dimensions.
- Repair tires.

Work Context

- Indoors, Environmentally Controlled — 99% responded “Every day.”
- Telephone Conversations — 100% responded “Every day.”
- Frequency of Decision Making — 98% responded “Every day.”
- Spend Time Using Your Hands to Handle, Control, or Feel Objects, Tools, or Controls — 95% responded “Continually or almost continually.”
- Deal With External Customers or the Public in General — 85% responded “Extremely important.”

Education

These occupations usually require a high school diploma.

Related Experience

Some previous work-related skill, knowledge, or experience is usually needed. For example, a teller would benefit from experience working directly with the public.

Job Training

Employees in these occupations need anywhere from a few months to one year of working with experienced employees. A recognized apprenticeship program may be associated with these occupations.

Worker Requirements Skills

- Repairing — Repairing machines or systems using the needed tools.
- Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions, or approaches to problems.

- Troubleshooting — Determining causes of operating errors and deciding what to do about it.
- Equipment Maintenance — Performing routine maintenance on equipment and determining when and what kind of maintenance is needed.
- Equipment Selection — Determining the kind of tools and equipment needed to do a job.
- Service Orientation — Actively looking for ways to help people.
- Speaking — Talking to others to convey information effectively.
- Quality Control Analysis — Conducting tests and inspections of products, services, or processes to evaluate quality or performance.
- Social Perceptiveness — Being aware of others' reactions and understanding why they react as they do.
- Complex Problem Solving — Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.
- Reading Comprehension — Understanding written sentences and paragraphs in work-related documents.

United Kingdom SOC 2020- 5223/02: Bicycle Mechanics

<https://nationalcareers.service.gov.uk/job-profiles/cycle-mechanic>

Note – there is no webpage for the UK SOC's occupation descriptions but there is an online spreadsheet - <https://www.ons.gov.uk/file?uri=/methodology/classificationsandstandards/standardoccupationalclassification/soc/standardoccupationalclassificationsoextensionproject/extendedsoc2020structureanddescriptionexcel220224.xlsx>

Cycle mechanic

Alternative titles for this job include bike mechanic, bicycle technician, e-bike repairer

Cycle mechanics build, repair and service all kinds of bikes, e-bikes and e-scooters.

You can get into this job through:

- a college course
- an apprenticeship
- working towards this role
- specialist private training courses

College

You could take a course to get a qualification and some of the skills needed to be a cycle mechanic.

Courses include: cycle maintenance; cycle mechanics

Entry requirements for these courses vary.

Apprenticeship

You could apply for a place on a Bicycle Mechanic Level 2 Intermediate Apprenticeship.

This can take between 1 and 2 years to complete.

Entry requirements: You'll usually need: some GCSEs, usually including English and maths, or equivalent, for an intermediate apprenticeship

Work

You could start as a retail assistant in a bike shop or bike hire outlet. You could then apply for a job as a trainee mechanic if they have a repair workshop. You'll need good customer service skills, a keen interest in cycling and some knowledge of cycle repairs.

Other Routes

You could study for technical cycle maintenance qualifications offered by an industry body like Cytech.

Skills and knowledge

- the ability to use, repair and maintain machines and tools
- problem-solving skills
- to be thorough and pay attention to detail
- customer service skills
- to be flexible and open to change
- the ability to sell products and services
- knowledge of engineering science and technology
- the ability to work well with your hands
- to be able to carry out basic tasks on a computer or hand-held device

Day-to-day tasks

- talk to customers to identify problems with their bikes
- estimate the cost of repairs and give quotes
- carry out repairs and maintenance tasks like safety checks
- build new bikes to customer specifications
- order spare parts, keep a log of stock and process paperwork
- attend cycling events to provide repairs and technical support

Australia OSCA 2024 – 351432 Bicycle Technician

<https://www.abs.gov.au/statistics/classifications/osca-occupation-standard-classification-australia/2024-version-1-0/browse-classification/3/35/351/3514/351432>

Performs diagnostics, repairs, assembly and servicing of electric and regular bicycles and scooters.

Alternative titles: Bicycle Mechanic; Bicycle Repairer

Specialisation: Electric Bike (e-bike) Technician

Skill level: 3

The OSCA has 5 skill levels with Level 1 being the highest. Skill Level 3 occupations have a level of skill commensurate with: AQF Certificate III which includes at least two years of on-the-job training, or AQF Certificate IV. At least three years of relevant experience may substitute for the formal qualification. In some cases, relevant experience and/or on-the-job training may be required in addition to the formal qualification.

Occupations at Skill Level 3 include: Automotive Electrician, Bookkeeper, Butcher, Dressmaker or Tailor, Early Childhood Educator, Electrical Fitter, Firefighter, Hairdresser, Real Estate Agent, and Senior Beef Cattle Station Worker.

Main tasks

- Performs advanced diagnostics by identifying and troubleshooting mechanical and electronic issues in bicycles using specialised equipment
- Assembles bicycles from parts or kits, and modifies bicycles according to customer specifications, including fitting specialised parts
- Builds bicycle wheels, and fits and maintains tyres
- Repairs and overhauls bicycle hydraulic braking and drivetrain systems
- Services and tunes electronic gear shifting systems for high-end bicycles
- Maintains and repairs electric bicycle and scooter components such as motors, batteries, controllers and wiring

New Zealand National Occupation List (NOL) 2024 – 321215: Bicycle Technician

Skill Level 3 (Note: the NOL has 5 skill levels – with #1 having the highest skills. Skill Level 3 requires a Bachelor degree or higher qualification, or at least five years of relevant experience may substitute for the formal qualification (New Zealand Qualifications and Credentials Framework (NZQCF) Level 7-10/NOL Skill Level 1)

Synonyms: Bicycle Mechanic, Bicycle Technician

Definition

NZQCF Level 4 qualification, or at least three years of relevant experience may substitute for the formal qualification (NZQCF Level 4/NOL Skill Level 3).

Undertakes bicycle diagnostics and assembles and services electric and mechanical components of a bicycle including electronic gear shifting systems or motors.

Exclusion

This occupation excludes the following:

Bicycle Repairer

Small Engine Mechanic

New Zealand National Occupation List (NOL) 2024 – 899911: Bicycle Repairer

Note that the NOL has two occupation codes related to bicycle servicing. 899911 has a lower skill level.

Skill Level 5

Definition

NZQCF Level 1 qualification, or compulsory secondary education (NZQCF Level 1/NOL Skill Level 5).

Repairs and adjusts bicycles, excluding e-bikes, and assembles bicycle kits.

End Notes

¹ City of Toronto's Micromobility Workforce Development Initiative -

<https://tcat.ca/tcat-report-on-micro-mobility-workforce-development-in-the-city-of-toronto-in-now-available/>
Report: *Micro Mobility Workforce Development Report: Pathways and Policy for Bicycle Industry Development and Bicycle Mechanics Training*; TCAT; 2023: <https://tcat.ca/wp-content/uploads/2023/06/FINAL-BIKE-MECHANIC-REPORT-PDF.pdf>

² Definition of different types of scooters

"A **motor scooter** is a motorcycle with a step-through frame, a seat, a transmission that shifts without the operator having to operate a clutch lever, a platform for their feet."

[https://en.wikipedia.org/wiki/Scooter_\(motorcycle\)](https://en.wikipedia.org/wiki/Scooter_(motorcycle))

"An **electric kick-scooter (e-scooter)** is a vehicle that has:

- two wheels (one at the front and one at the back)
- a platform to stand on
- a handlebar for steering
- an electric motor that does not exceed 500 watts
- a maximum speed of 24 km/h on a level surface"

<https://www.ontario.ca/page/electric-kick-style-scooters-e-scooters>

³ It is worth noting that there are many countries that have phased out their unique national occupational classification system and are now using ISCO (e.g., Austria and Switzerland).

⁴ A list of economic codes that are directly tied to the bicycle industry in Canada includes:

Classification System	Code and Title	Comments	Weblink
Classification of Instructional Programs (CIP)	47.0610 - Bicycle mechanics and repair technology/technician		https://www23.statcan.gc.ca/imdb/p3VD.pl?Function=getVD&TVD=1486532&CVD=1486488&CPV=47.0610&CST=15052022&CLV=4&MLV=4
North American Product Classification System (NAPCS)	442121 - Bicycles	Electric power-assisted bicycle are included	https://www23.statcan.gc.ca/imdb/p3VD.pl?CLV=3&CPV=442121&CST=17022022&CVD=1385180&Function=getVD&MLV=4&TVD=1384502
NAPCS	4511211 - Bicycle Parts		https://www23.statcan.gc.ca/imdb/p3VD.pl?Function=getVD&TVD=1384502&CVD=1386659&CPV=4511211&CST=17022022&CLV=4&MLV=4
NAPCS	5614111 - Bicycles and biking equipment and accessories, at retail		https://www23.statcan.gc.ca/imdb/p3VD.pl?Function=getVD&TVD=1384502&CVD=1386659&CPV=5614111&CST=17022022&CLV=4&MLV=4
NAPCS	5511471 - Bicycles at wholesale		https://www23.statcan.gc.ca/imdb/p3VD.pl?Function=getVD&TVD=1384502&CVD=1386659&CPV=5511471&CST=17022022&CLV=4&MLV=4
North American Industry Classification System (NAICS)	459113 - Cycling equipment and supplies specialty retailers		https://www23.statcan.gc.ca/imdb/p3VD.pl?CLV=5&CPV=459113&CST=27012022&CVD=1370970&Function=getVD&MLV=5&TVD=1369825

⁵ <https://www.statcan.gc.ca/en/subjects/standard/noc/2021/introductionV1#a3>

⁶ The below labour force information websites are a good example of the limited value of statistical information for NOC 73209 as it covers such a wide range of occupations with different skill sets, training needs in very different industry. Some reference the occupation as automotive maintenance equipment servicer, respirator servicer and fitter or do not mention that bicycle mechanics are include in this occupational classification.

- <https://www.services.labour.gov.on.ca/labourmarket-ui/jobProfile?nocCode=73209>
- <https://www.jobbank.gc.ca/marketreport/outlook-occupation/26183/ON.jsessionid=478C65CA89D08A83BBB1330B34079DFE.jobsearch74>
- <https://www.jobbank.gc.ca/wagereport/occupation/25936>

⁷ Global bicycle sales

2017 - https://en.m.wikipedia.org/wiki/Bicycle_industry

2013 and forecast - <https://www.statista.com/statistics/1356736/bicycle-market-forecast-global/#:~:text=In%202023%2C%20the%20global%20market,was%2061.7%20billion%20U.S.%20dollars.>

⁸ This report estimates that there are over 50,000 bike shops in Europe with employment of 150,000 in 2017.

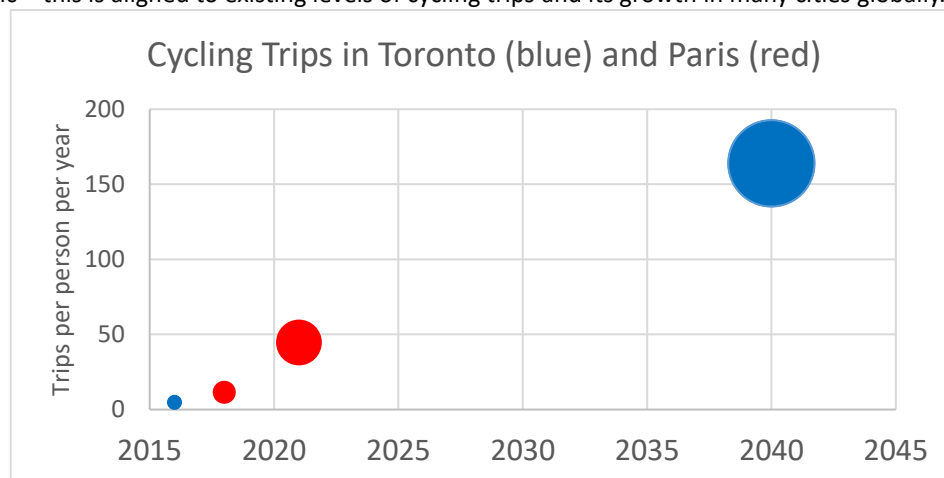
Research in Toronto indicates that about 1/3 of the employees in bike shops are bike mechanics - <https://ebma-brussels.eu/wp-content/uploads/2019/03/OPEN-EU-Bicycle-Industry-Employment-and-Investment-Study-2019-with-2018-data.pdf>

⁹ National statistics (June 2024) on the number of bike shops estimate about 600 retailers in Canada which is likely an underestimate (Toronto has 99 shops in 2024): <https://www.statista.com/statistics/454745/number-of-cycling-equipment-and-supplies-stores-by-region-canada/>

¹⁰ Report: *Directory of the Toronto Bike Industry (2024)*; 2024 - <https://www.toronto.ca/wp-content/uploads/2024/11/9758-Toronto-Bike-Directory-2024-5E-AODA.pdf>

¹¹ Report: *Economic Potential and Workforce Requirements in Toronto's Net Zero Strategy*; 2024 - <https://www.toronto.ca/wp-content/uploads/2025/01/78ab-EconomicPotentialWorkforceRequiremtsAODAFeb-24.pdf>

The report's cycling market section estimates that the number of cycling trips (between 1 and 5 km) will need to increase from 13 million in 2021 to 648 million trips in 2040 annually to meet the Net Zero Strategy's sustainable transportation target. This would increase the number of bicycle mechanics employed in the city of Toronto from an estimated 220 in 2024 to 7,500 in 2040. Note that while the increase in cycling trips (and employment) appear to be dramatic – this is aligned to existing levels of cycling trips and its growth in many cities globally.



¹² This is a useful page to understand the value of NOC codes - <https://noc.esdc.gc.ca/Tutorial/TutorialApplications>

¹³ The Quebec training program
13 June 2025

This program offers a certificate of professional studies (AEP) and is the first program officially recognized by a Canadian ministry of education. The program is organized in collaboration with the Continuing Education Office and the Montreal School of Motorized Equipment Trades. The training program has 645 hrs of instruction (approximately 18 weeks)

These two sites provides a good overview of the program –

<https://formation-continue.cssdm.gouv.qc.ca/2022/09/21/mecanique-velo/>
<https://ecole-metiers-motorise.cssdm.gouv.qc.ca/programme/mecanique-velo/>

¹⁴ TEER – this provides good information on the 5 levels. <https://noc.esdc.gc.ca/Tutorial/TutorialTeerCategory>

¹⁵ USA

Article - *US Department of Labour recognizes Bicycle Technician Apprenticeship*. Bicycle Retailer e-magazine; May 22, 2025 - <https://www.bicycleretailer.com/industry-news/2025/05/22/departement-labor-reconnait-bicycle-repair-technician-apprenticeable>

“Apprenticeship occupations generally are learned through a program of on-the-job supervised training combined with instruction to meet industry standards. Other apprenticeship occupations are Automobile Service Technicians and Mechanics, Plumbers, and Pharmacy Technicians.”

¹⁶ Australia

Blog article: *How to become a bicycle mechanic*; January 1, 2025 BMCR

<https://bmcr.com.au/articles/how-to-become-a-bicycle-mechanic/>

This is a useful blog about the status of bicycle mechanics in Australia.

“As of December 6th 2024, ANSZCO has been replaced by the new Occupation Standard Classification for Australia (OSCA) rankings. 'Bicycle mechanic' has now been reclassified to Level 3, the same as an automotive mechanic. This is a huge win for the Australian bike industry, who have been lobbying for years to get bike mechanics the professional recognition they deserve. As bicycle mechanic is now finally classified a skilled trade, the Bicycle Industry Association can also apply for it to be recognised as a skill shortage area.”

¹⁷ Germany training of motorcycles and bicycles mechanics is a combined process progressing from a technician to a mechanic and then increased skill requirements to allow work first on human-powered bicycles and then more technically advanced motorcycles. <https://www.anerkennung-in-deutschland.de/html/en/5956.php>

¹⁸ Bike Mechanic Training and Apprenticeship Details in Europe

European Country	Training Period	Weblink
Denmark	40 weeks of classroom plus 2-year apprenticeship	https://copenhagenize.com/2008/03/become-professional-cycle-freak.html
Holland	3 years (4800 study hours) total (classroom and apprenticeship)	https://www.s-bb.nl/media/ygvhz3fh/eerste-fietstechnicus-95442-1112-en.pdf
Germany	This qualification is a dual vocational education and company training (2-year training course).	https://www.dqr.de/dqr/shareddocs/qualifikationen-neu/en/Bicycle-mechanic.html