

Job Evaluation Plan



Developed by:

McMaster University

and

CAW Local 555

April 2004

REVISED AUGUST 2006 TO INCLUDE CLARIFICATIONS

McMaster University and CAW make no representations with respect to, and accept no responsibility or liability for, the use of this Job Evaluation Plan by parties other than themselves.

This Job Evaluation Plan Revision is a reprint of the original Plan, dated April 2004, and includes clarifications to the Plan which have been developed over time to assist those using the Plan in applying it consistently.

The Clarification sections are clearly labelled and placed on alternating pages of the Plan. Subfactor 5 Guidelines/Extended Clarifications for Education and Experience, are located at the end of the document, following Subfactor 14. Asterisks () have been added to the original Plan to identify that a clarification exists.*

CLARIFICATIONS – APPLIED REASONING AND ANALYTICAL SKILLS

The following definitions and guidelines assist in applying this sub-factor:

Basic Material/Equipment:

Straightforward and readily understood (e.g., work routines, operating procedures, labels, instructions, phone, basic operations of fax, e-mail, basic word processing and spreadsheet applications).

Specialized Material/Equipment:

Has specific vocabulary, codes or specialized procedures to set up/operate office equipment (e.g., advanced operation of photocopier, multifunction fax), research and/or laboratory protocols, medical terms or charts, WHMIS regulations, material safety data sheets, advanced word processing and spreadsheet applications.

Technical Material/Equipment:

Describes the characteristics of machinery or equipment, or specific steps for accomplishing results (e.g., operating manuals, subject-specific texts, multi-media presentation/classroom equipment, video conferencing, description of building code requirements).

To evaluate the appropriate level of applied reasoning and analytical skills it is necessary to consider the complexity of the information and the range of problem-solving skills required.

Simple/Established/Standard Criteria:

Describes situations with a limited number of components. The solution to problems is normally chosen from a limited or broad range of “established” solutions.

Complex Criteria:

Describes situations with multiple components that interact with each other in a predictable way (e.g. housing/classroom needs of a student with multiple disabilities, accounts reconciliation requiring several sources, mechanical/electrical systems disruptions and computer network disruptions).

Extremely/Highly Complex Criteria:

Describes situations with many interactive and/or conflicting components that interact with each other in an *unpredictable* way (e.g., computer network failure, mechanical/electrical systems failure, budget forecasts involving interactive components, suicidal student with family background of substance abuse and traumatic events).

- Continued -

1. APPLIED REASONING AND ANALYTICAL SKILLS

Most jobs require employees to understand, collect, interpret and analyze different kinds of information, and to identify and solve problems. This sub-factor is used to measure the range and complexity of skills relating to the application of information and the degree of problem solving that is required in the job. It measures six related skills: analysis, problem solving, gathering/classifying/cataloguing information, reading, writing, and computation.

This sub-factor measures:

- the level of theoretical or technical complexity of materials (e.g., written, graphic, schematics) used in the job
- the degree of specialization of material (e.g., use of specific vocabulary or codes*)
- the level of skill required to set out and assist in the process of reasoning and/or conveying information (e.g., filling out forms, editing and proofreading, file documentation, note-keeping, authoring specialized reports)
- the required level of skill in using numbers for calculation, formulae, equations and specialized mathematical functions, such as accounting
- the degree of information gathering, processing, analysis and interpretation required in the job
- the required level of skill in operating a computer, using software packages/programs/applications
- the requirement in the job to develop new things or design solutions to problems of varying levels of complexity

This sub-factor does not measure specialized mechanical or physical skills, which are valued under other factors.

Level	Applied Reasoning and Analytical Skills Level Descriptors
1	<p>The job requires applying known solutions to straightforward problems.</p> <p>Requires gathering readily accessible information of a basic* nature; comprehension of basic* materials; writing to fill in basic* forms (where accuracy of spelling and grammar is secondary). Few or no mathematical skills are required.</p>
2	<p>The job requires identifying problems and analyzing situations using simple, established* procedures; solving simple problems by selecting from among an existing set of solutions.</p> <p>Requires gathering information from a few known sources, and/or retrieving files; comprehension of general written and/or graphic information; writing to fill in forms and/or keep records (formal English* not required). Some basic mathematical skills (basic* operations) may be required.</p>

CLARIFICATIONS – APPLIED REASONING AND ANALYTICAL SKILLS continued...

Writing vs. Authoring:

Authoring is more formal (i.e., published materials, new materials, communicating new and original information which is attributed to you as an individual). **Writing** involves communicating information which is not necessarily a new idea (i.e., correspondence). **Writing**, as described in [level 4](#), involves communicating information but not necessarily new concepts (eg. correspondence, publicity articles, speeches, summarizing research, reformulating key concepts, writing procedural manuals and case documentation). **Authoring**, as described in [level 5](#), requires an evaluative component and/or written analysis of specialized matters (eg. developing a business case, research protocols, rationales, etc.). **Authoring**, as described in [level 6](#), is more formal and focused on writing original materials published in peer-reviewed journals or materials which are attributed to the incumbent as original.

Formal English:

'Formal English' is defined as writing in sentences which are complete, coherent, grammatically correct and with correct spelling beyond the level expected of high school graduates.

Use of a Second Language:

[Level 5](#) includes the responsibility for:

- composing text of more than 1 paragraph in length in another language
- corresponding in another language

Programming:

[Level 4](#) refers to **writing programs** that are somewhat complex and would include writing macros, queries with SQL/QMF/Excel, etc.

Programming at [level 5](#) refers to writing computer programs using **multiple inputs** (e.g. integrating in different formats, databases, ascii files, etc.) **and multiple outputs** (e.g. data updates, report creation).

Programming at [level 6](#) refers to writing programs using multiple platforms **and** new methodologies. Programs written are unique and include the writing of a new software program, new network protocol, new systems monitoring programs, etc. Programming at [level 6](#) tends to be very complex **and** integrates various systems of the University.

Correspondence:

At [level 3](#), writing would consist of production of form or template letters (for which correct grammar and spelling is required), with very limited generation of content (e.g., acceptance letters or request for space allocation).

At [level 4](#), **writing documents of a general nature** would include generating the content of routine correspondence with multiple paragraphs (beyond form or template letters) to transmit or request information (e.g., letters to outside organizations, or letters composed for others' signature).

Presentations:

At [level 5](#), the development of **oral presentations** to convey information needs to be considered in the context of the [level 5](#) definition, "identifying problems and analyzing complex situations; evaluating complex information". The level of oral presentations developed must be around complex / specialized, legal/regulatory and/or technical materials that have to be presented. Presentations conveying factual information or delivering canned presentations that are developed around standardized technical/scientific procedures or routine experiments/materials would fit [level 3](#).

3	<p>The job requires identifying problems and analyzing situations and/or information using standard* criteria; solving problems by selecting from a broader range of available options.</p> <p>Requires gathering information using standard* systems; comprehension of general and some specialized materials*; writing formal notes and records. Application of standard mathematical skills (calculations, formulae and/or equations), including generation of standard* accounting reports, may be needed; application of standardized technical/scientific* procedures with some modification to produce routine experiments/materials. Job may require scanning text in another language for specific information or words, copy typing* or transcribing of English text which may include words in another language, scientific symbols or terminology (legal, medical, etc.), where knowledge of content is not required.</p>
4	<p>The job requires identifying problems and analyzing situations and/or information using a broader range of criteria and guidelines; developing solutions in response to problems that are somewhat complex* and may be recurring.</p> <p>Requires gathering material and information using complex multiple systems; comprehension of somewhat complex, specialized, legal/regulatory and/or technical materials*. The job also requires some of the following: accurate editing or adapting of written and/or graphic materials (requiring knowledge of subject matter; may include word processing of text composed of scientific symbols, or in another language; or composing simple, factual text in another language); applying knowledge to process data or develop reports; writing or editing computer programs* that are somewhat complex; writing case documentation to assist the reasoning process, or writing* documents of a general nature; instruction of subject materials within set objectives without assessment of learning but may include marking; execute complex, multi-step research protocols; application of somewhat complex technical/scientific procedures with some modification to produce complex equipment/materials. Application of statistical formulae or procedures and/or production of advanced accounting reports and analysis may be required.</p>
5	<p>The job requires identifying problems and analyzing complex* situations; evaluating complex* information (may include interviewing which requires knowledge of job processes; screening, testing, assessment and/or evaluation processes); developing solutions in response to problems that are more complex*.</p> <p>Requires gathering complex information from a range of sources and/or eliciting/generating some new data; comprehension of complex specialized, legal/regulatory and/or technical materials. The job also requires some of the following: generating or creating specialized* equipment, written* or graphic materials; summarizing documents from another language*; instruction of subject materials within set objectives, including assessment of learning; authoring documents or charts of a specialized and/or technical nature including authoring* procedural instructional materials; developing oral presentations to convey information*; participating with a team in the development of research protocols; modifying/adapting research protocols, application of complex, technical/scientific procedures with extensive designing or modification to produce complex experiments/materials/equipment. Application of complex statistical procedures or formulae may be required.</p>

6	<p>The job requires identifying complex problems by applying sophisticated analytical methods and procedures (analysis and interpretation of test/survey results); developing solutions (often innovative) in response to problems that are extremely complex* and may be unique.</p> <p>Requires probing for information to determine the true nature of the problem or information sought; screening/testing/interviewing (requires knowledge of content area); eliciting/generating new data; comprehension of highly complex*, specialized, legal and/or technical materials. The job also requires some of the following: organizing and writing* specialized reports, plans or policy-related documents; developing oral presentations to convey such complex information*; and authoring* and design of conceptual teaching/learning/research materials/ equipment including information technology system architectures. Conceptualizing and producing complex technical/scientific protocols, materials or equipment. Application of financial analysis, planning and forecasting may be required.</p>
7	<p>In addition to the skills set out in level 6, the job requires some of the following: conceptualization of unique hypotheses; applying the reasoning process to develop unique solutions; developing new methodologies to gather/generate new data; authoring materials that contribute to the growth of a body of knowledge.</p>

CLARIFICATIONS – BREADTH OF KNOWLEDGE

The following definitions and guidelines assist in applying this sub-factor:

Guidelines for the Application of Level Ratings

- Level 1:** The job requires knowledge of **procedures** that are part of the organizational unit or field and familiarity with the context in which the job operates. Requires knowing how to do something and knowing who to contact (referrals).
Examples:
- An Administrative Assistant in an academic department who is the first line of contact with students and needs to be familiar with the services offered in the various student services departments across campus in order to refer students appropriately.
 - A Laboratory Technician who follows standard operating procedures, or a Research Assistant who performs standardized experiments, and may also have to know other procedures such as ordering supplies, shipping specimens or disposing of waste.
- Level 2:** The job requires full knowledge of **operational and administrative processes** relating to the function of the organizational unit or field and working knowledge of content, processes and operations in one or more additional areas. Requires knowing why you are doing something, knowing how it fits in and how to connect the elements.
Examples:
- A Financial Administrator for a unit who is responsible for receiving all invoice incomes, research funds, grants, etc. to be deposited to a variety of operating and/or research accounts; processing all travel expenses, journal entries, invoices, payrolls according to applicable policies and procedures; monitoring and reconciling all of the accounts including credit card and other miscellaneous payments; preparing accounts for financial audits; alerting manager to forecasted shortages; and assisting manager with budget projections.
 - A Laboratory Technician who must have knowledge of lab machinery in order to assist faculty and students with apparatus or equipment failures to service, repair or design a modification to resolve the issue. This requires not only operational knowledge of the equipment but also pedagogical knowledge of the research area in order to adapt, develop or design experiments or research protocols.
 - An Administrative Assistant who is the sole administrative support for a unit whose responsibilities cover a breadth of areas including financial resources, physical space, staffing as well as the daily operation of the unit.
 - A Physiotherapist who works with patients but is also responsible for the management of the unit (including staffing, finances and space) and for coordinating student placements including their evaluations.
 - A Reference Assistant who requires full knowledge of operational and administrative processes relating to the periodical holdings and the reference department in the library as well as a working knowledge of other library departments, federal, provincial and municipal government agencies and departments (especially which level of government and then which department within that level is responsible for different issues), off-campus resources such as international newspapers, and an in-depth knowledge of the search syntax for over 200 databases.

- Continued -

2. BREADTH OF KNOWLEDGE

All jobs require some degree of knowledge of the context in which they work. Some jobs require knowledge of the interactions and relationships between their own and other units, or more broadly, between their organization and other organizations. This sub-factor measures the broader knowledge required, such as familiarity with fields of study, work units, projects, departments, faculties/envelopes, the University as a whole, external organizations, business conditions and economic environment.

(See **CLARIFICATIONS** for Guidelines for the Application of Level Ratings)

Level	Breadth of Knowledge Descriptors
1	The job requires knowledge of processes limited in scope or narrow in range.
2	The job requires full knowledge of processes in the immediate area and some knowledge in other areas.
3	The job requires knowledge of processes in multiple areas or fields of study.

CLARIFICATIONS – BREADTH OF KNOWLEDGE continued...

Guidelines for the Application of Level Ratings (continued)

- Level 3:** The job requires full knowledge of **operational and administrative processes** relating to the function of **multiple** organizational units or fields and working knowledge of content, processes and operations in additional areas.
- Examples:**
- A Research Statistician who is conducting research in the fields of cardiology and diabetes, but must be fully aware of new developments in research methodologies, current research and statistical results in diabetes care, and other research related qualitative indicators.
 - An Industry Liaison Officer, in addition to a solid background in sciences, must have a good understanding of business acumen and market environments in order to identify potential partners in industry, as well as how patents, trademarks and licence agreements are negotiated and drafted.
 - A Clinical Research Nurse who requires full knowledge of operational and administrative processes relating to clinical research trials, and a working knowledge of academic research methodologies in addition to the knowledge to practice as a Registered Nurse.

Half levels should not be assigned in the Breadth of Knowledge sub-factor

Field of Study:

A field of study can be thought of as a body of knowledge typically acquired through a school program that prepares you for a job.

Knowledge required for supervision is not considered as a rationale for **level 3** unless the job requires formal study in Human Resources.

CLARIFICATIONS – ADAPTATION TO CHANGE/UPDATING OF LEARNING

The following definitions and guidelines assist in applying this sub-factor:

Advanced Personal Study/Research:

‘Advanced personal study/research’ is meant to describe extensive reading in a field of study which is required to pursue work objectives.

Note that the list of updating methods in 3.3 of the JCQ is not arranged progressively.

Level 2:

Incremental change in technology or knowledge base entails learning of new concepts and/or practices.

Level 2 is understood to mean that professional development activities are required in addition to the incremental changes described in this level descriptor.

Level 2.5:

In this sub-factor, the standard of 2.5 is used to describe jobs where frequent but incremental change is required.

Where the job also requires updating to maintain a required professional designation, (which is an element from level 3), in addition to frequent incremental change, the job will be rated as a level 2.5.

In general, the combination of elements should not result in a higher level than they would individually – e.g., considered separately, the requirement for frequent incremental change results in a rating of 2.5. The requirement for updating to maintain professional designation would also result in a 2.5. If both are required in the same job, they still equate to a level 2.5 and not increase the rating to a level 3, if the job does not fit the definition of a level 3.

Level 3:

Identifies ‘significant’ change and the requirement to learn new concepts or practices. Learning new concepts is a key component of this factor and it is important to understand that new technologies or changes in the knowledge base do not necessarily require learning new concepts. Therefore, a level 3 rationale for this sub-factor should focus on exactly what the new concept is.

Level 4:

Refers to ‘constant change, influenced by evolving technologies’ with an ‘ongoing and substantial change in methods’ and ‘continuous effort to keep knowledge and skills up to date’.

3. ADAPTATION TO CHANGE/UPDATING OF LEARNING

This sub-factor measures the requirement to adapt to changes in work methods and technology and to learn new ways of working. It addresses the challenges of staying current with job-related knowledge as requirements change. This sub-factor does NOT measure the need to process new information using existing procedures.

Knowledge may be updated by:

- studying procedures/manuals
- reading job-related periodicals and journals
- attending seminars, conferences and/or courses
- technical exchanges with colleagues and/or external experts
- advanced individual/personal study/research required by the job*

Level	Adaptation to Change/Updating of Learning Descriptors
1	The technologies or knowledge base used in this job are relatively stable. When necessary, the incumbent may be required to upgrade skills and become familiar with new functions and practices. Adapting to infrequent major change may be required.
2*	There are incremental changes in the technologies or knowledge base used in this job outside of infrequent major changes in these elements. It is expected that incumbent will participate in some professional development activities.
3*	The technologies or knowledge base are changing regularly to adapt to significant change. The incumbent is regularly required to learn new concepts or practices, and may include updating to maintain required professional designation.
4*	The technology or knowledge base is constantly changing, influenced by evolving technologies and/or the business/academic environment. There is ongoing and substantial change in the methods used and knowledge required in the job. Continuous effort is required to keep knowledge and skills up to date.

CLARIFICATIONS – INTERPERSONAL SKILL

The following definitions and guidelines assist in applying this sub-factor:

“Difficult or Challenging”:

Level 3 includes the requirement to “interact with others before a difficult or challenging situation/issue can be referred to others.” This is meant to refer to interactions that are emotionally difficult or challenging, where the expectation is that the incumbent must attempt to solve the problem. Level 2.5 covers the requirement to provide support for upset clients without attempting to solve the cause of their underlying problem. The following is the wording that should be used in the rating note to describe this: *“(The job also requires) interacting with others in emotional or difficult situations (e.g. ...)”*.

“Frequency in Interaction with Others”:

In level 3, “Frequently must interact with others before a difficult or challenging situation/issue can be referred to others or conferred on with others”, the word “frequently” should be disregarded as ‘Skill’ sub-factors do not consider frequency.

“Cooperation”:

A level 3 rating in “cooperation” is understood to refer to “securing the cooperation of others” as opposed to “working cooperatively with others”. A level 3 rating will apply to those jobs that must secure the cooperation of others or coordinate the efforts of others.

“Provide Advice”, “Instruct” and “Train”:

In level 3, “Provide advice” refers to the provision of recommendations for future action. Such recommendations require a thorough understanding of the issue and potential outcomes.

“Instruct” refers to the teaching of subject matter with assessment of learning or the giving of direction to others with assessment of how well the task is performed. “Train” refers to the formal demonstration of a set of applied skills to an individual or group where the trainer must ensure that the trainee(s) understand and can perform the tasks/skills.

“Presentations”:

A rating of level 3 is meant to include the requirement to deliver presentations.

Formal Negotiation:

‘Formal negotiation’ (level 5) refers to the negotiation of contracts, negotiating the price of equipment to be purchased within a contract (e.g., arriving at a deal with supplier/client over price/services), and also refers to behavioural contracts negotiated with a counseling psychologist or social worker. Examples of formal negotiations which are not complex (level 4) include negotiating the best price for equipment with 3 or fewer suppliers. Negotiations which are not formal (level 3) include using persuasion to change schedules or deadlines, or “securing the cooperation or coordination of efforts with others”.

4. INTERPERSONAL SKILL

This sub-factor measures the job requirement to deal effectively with people both within and outside of the organization. This sub-factor considers the type, importance and purpose of contacts and the degree of interpersonal skills required to achieve job objectives. Do not consider contact between supervisors and subordinates (as it is assessed under the Responsibility for Others sub-factor).

Note: If the job requires basic **verbal** interactions (exchanging simple, factual information) in another language (e.g., French, American Sign Language), increase rating by ½ level. If the job requires complex verbal interactions (e.g., performance of full range of duties) in another language, increase rating by 1 full level.

Level	Interpersonal Skill Descriptors
1	<p>Interactions require common courtesy, effective listening and comprehension skills, and the ability to work cooperatively with others.</p> <p>Gives or asks basic directional information and/or response to straightforward inquiries.</p>
2	<p>Interactions primarily require the ability to identify and respond to basic needs or requests.</p> <p>Exchanges basic technical, scientific or administrative information as a normal part of getting the job done. Tact and diplomacy may be required to deal with minor conflicts/complaints. Generally the incumbent can refer or confer on a difficult or challenging situation.</p>
3	<p>Interactions primarily require the ability to identify needs or requests and to provide advice, instruct or train*.</p> <p>Cooperation* or the coordination of efforts with others is required. May relay unpleasant information to others. May give explanations of specialized matters (terminology or expressions) in non-technical terms. Frequently* must interact with others before a difficult or challenging* situation/issue can be referred to others or conferred on with others. Must be aware of, and understand the feelings and motives of others.</p>

4	<p>Interactions primarily require the ability to identify and respond effectively to needs and requests that are difficult to determine (requires probing for information, including in-depth interviewing).</p> <p>Communication may require the skills of persuasion, influence, or motivation to gain the cooperation/coordination of others. Must consider the feelings and motives of others and respond appropriately. May explain ideas or concepts related to highly complex or controversial issues. May require formal negotiation* skills where the issues are not complex and the outcome not contentious.</p>
5	<p>Interactions require a regular use of highly developed and proven effective counselling, mediation, persuasion and/or negotiation* skills where the issues are complex, communication is difficult, and/or the outcome contentious.</p>

CLARIFICATIONS – EDUCATION AND EXPERIENCE

The following definitions and guidelines assist in applying this sub-factor:

Additional guidelines which link specific job skills to the content of current educational programs are appended following Health and Safety, subfactor 14. The expanded guidelines are intended to help clarify academic requirements for jobs current in 2006 at various levels.

Equivalencies:

Job evaluation is a separate process from recruitment and selection. The job evaluation process considers the **minimum combination of formal education and experience required to perform the job competently and ensure the smooth flow of work**. This requirement is based on current educational programs, rather than what the incumbents bring to the job. In the recruitment and selection process, the employer must consider equivalencies to the minimal education and experience as evaluated in this process. In job evaluation, equivalencies are not considered.

Validation:

To verify and validate the Education and Experience requirements for jobs, follow this cross-check procedure to determine or review and confirm the assigned levels. Look first at the specific skills noted in Applied Reasoning and Analytical Skills (subfactor 1), Mental Effort (subfactor 8), Planning and Coordination (subfactor 9), and Accountability for Decisions and Actions (subfactor 11). Further cross-check the highest level activities identified in your Rating Notes as required by the job in these subfactors with where these skills can be obtained (e.g., the level of formal education required). If these skills cannot normally be gained through a formal education program, but are skills learned on the job, then this should be reflected in additional years of pre-job experience.

Special or Unusual Educational Requirements:

When special or unusual educational requirements are reported on the JCQ (e.g., CDI College, an Executive MBA, etc.), incumbents and supervisors need to be queried, as what has been reported may be what the incumbent has achieved as opposed to what is actually required on the job.

The query should be along the lines of: “What is the minimum level of formal education required to perform this job? That is, if the job were to be posted tomorrow, what would be the minimum formal education requirement?” If there is doubt regarding the equivalency of the educational requirement in terms of time, the Job Rating Committee can review recent postings to see what the minimum education level specified in the postings is (e.g., 2 year Community College).

5. EDUCATION AND EXPERIENCE

This sub-factor measures a combination of education and relevant job-related experience required by the job.

The first component, education, measures the minimum level of formal education (or the equivalent of formal education) that is required for someone being hired into the position. It is recognized that some incumbents will not have this formal education but will have developed the necessary skills and competencies through experience. Some incumbents may have more than the required formal education.

The second component measures job-related experience two ways:

1. The experience required to start in the job. How many months and/or years of related experience are required for someone to be hired into the position?
2. On-the-job experience. How much on-the-job experience is required for the incumbent to learn and be exposed to the full scope of the job?

(See CLARIFICATIONS for Guidelines for Education and Experience)

To determine the appropriate combination of education and job-related experience required by the job, refer to the chart on the following page and complete the following steps:

- | | |
|--------|--|
| Step 1 | Under the column marked Minimum Formal Education , select the appropriate level of formal education (or the equivalent) required for someone being hired into the position. |
| Step 2 | Determine the number of months/year(s) of relevant Pre-Job Experience required for someone to be hired into the job. Use the low end of the range chosen (e.g., if 2, 3 or 4 years is selected, use 2 years as the basis of the calculation in step 4). |
| Step 3 | Determine the amount of additional On-the-Job Experience required to perform all the tasks in the job competently and ensure a smooth flow of work. This additional on-the-job experience is to be expressed in months to reflect the business and/or academic cycle. |
| Step 4 | Add together the total number of months/year(s) chosen in Step 2 and Step 3. |
| Step 5 | Use the chart on the following page to determine the level for this subfactor. |

CLARIFICATIONS – EDUCATION AND EXPERIENCE continued...

Calculation of Education/Experience when a Professional Program/Certification is Required:

The Job Evaluation Plan describes the process for calculating the education and job-related experience required by the job. ‘Professional designations’ are those that are awarded by a governing/licensing body and require the completion of courses, testing, and that individuals retain currency in their designation. Examples include CMA, P.Eng., RN, CMLTO, etc.

Positions which require an additional diploma or certificate receive credit for the period of study by adding to the pre-job experience based on a one-to-one correspondence with the length of the full-time program (or length of the program expressed as a full-time equivalent).

The requirement for completion of the InfoTech Certificate is credited with an additional 3 months of pre-job experience (credit for Info Tech Certificate applies as of June 16, 2006, when the Infotech stipend was discontinued).

Supervisory Skills:

Positions which require **ongoing supervision** of staff (levels 4 or 5 in Responsibility for Others, subfactor 10) are credited with an additional 1 year of pre-job experience in addition to the pre-job experience required to perform the other elements of the job.

Positions that function as a **lead hand** (level 3 for continuing employees in Responsibility for Others, subfactor 10) are credited with an additional six months on-the-job experience (to total not less than 12 months) in addition to the on-the-job experience required to perform the other elements of the job.

Minimum Experience Minimum Formal Education	Total Pre-Job and On-the-Job Experience				
	6 months or less*	More than 6 months up to 2 years	More than 2 years up to 4 years	More than 4 years up to 6 years	More than 6 years
Partial secondary school	A1	A2	A3	A4	A5
Secondary school diploma	B1	B2	B3	B4	B5
Secondary school diploma plus completion of up to 1 year post-secondary training program (eg. vocational, office administration, technical, athletic)	C1	C2	C3	C4	C5
Completion of a 2 year formal post-secondary program at a community college (or formal apprenticeship)	D1	D2	D3	D4	D5
Completion of a 3 year formal post-secondary program at a community college (or formal apprenticeship)	D6	D7	D8	D9	D10
Completion of a 4 year formal post-secondary program at a community college (or formal apprenticeship)	D11	D12	D13	D14	D15
Bachelor's degree	E1	E2	E3	E4	E5
Master's degree or equivalent professional designation (eg. MSW, MSc, CMA)*	F1	F2	F3	F4	F5
Doctoral level	G1	G2	G3	G4	G5

CLARIFICATIONS – DEXTERITY AND COORDINATION

The following definitions and guidelines assist in applying this sub-factor:

Fatigue from use of dexterity skills is measured in the sub-factor of Physical Effort. Review the responses to this sub-factor when rating Dexterity and Coordination to assess the intensity with which this skill is used.

Level Ratings:

Half levels are not assigned in the Dexterity and Coordination sub-factor.

Mouse Work/Precise Placement:

Use of a mouse is not generally equivalent to “precise placement of objects” at [level 3](#). Errors in mouse placement are generally correctable. In contrast, lack of precision in using a lathe may result in an unusable product. Use of a mouse may achieve [level 3](#) when there are examples of ‘minimal opportunity for correction’.

Use of a Dictaphone:

[Level 3](#) requires some combination of coordination/dexterity and precision such as eye-foot-hand, eye-ear-hand, etc. The use of a [dictaphone](#) would fit into this level.

Dissection:

A rating of [level 2](#) would apply to [dissections](#) where the need for precision is not present. For example, dissection to extract a length of intestine, would be rated as a [level 2](#).

A rating of [level 3](#) would apply to [dissections](#) where precision is required. Consider as an example, the dissection to isolate and extract the heart of an embryonic rat where any erroneous damage/cuts to the heart renders it unusable.

Precise keyboard/keypad use where the possibility of corrections is minimal:

Data is entered in real time and once it’s entered, the information is submitted and correction is difficult (e.g., entering grades on-line) is an example of precise keypad use where the possibility of corrections is minimal.

Cashiering:

Cashiering would be considered [level 3](#) if it were production-type work. Cashiering that is occasional or intermittent part of the day would be considered [level 2](#).

6. DEXTERITY AND COORDINATION

This sub-factor measures the amount of dexterity and coordination (physical skill) required to do the job.

When measuring this factor you should consider large and small muscle movement, coordination (hand-eye, eye-foot, ear-hand, etc.), the requirement to use tools to manipulate and/or repair equipment, precision of movements, and speed (frequency of muscle movement) required to do the job.

The time specifications in questions 6.2 and 6.3 from the Job Content Questionnaire are intended to determine how important dexterity and/or coordination are to the whole job.

Level	Definition	Guidelines and Examples
1	Requires simple, often easy muscular movements.	<ul style="list-style-type: none"> No requirements for precision in dexterity Includes use of computerized equipment to manipulate or retrieve data or use of keypad/wand/photocopier, and limited use of keyboard (mainly e-mail, notes and web browsing)
2	Requires some coordination/dexterity.	<ul style="list-style-type: none"> Uses tools, machines or equipment requiring some coordination/dexterity (e.g., drill press, centrifuge) Full keyboard use (such as for processing a variety of documents or full data input) where corrections permitted after the fact Assembly of course material packages
3	Requires some combination of coordination/dexterity and precision.	<ul style="list-style-type: none"> Uses equipment and machines requiring coordination/dexterity and accuracy and/or precise placement* of objects (e.g., applying injections, operating lathe, oscilloscope, gas chromatograph, offset printer) Precise keyboard/keypad use where possibility for corrections is minimal* (adding machine/calculator, cash register operation*; production-oriented document processing) Accurate mixing of chemicals, preparing sample for light microscopy, manual calibration of equipment or assembling circuit boards, handling laboratory animals Athletic demonstrations
4	Requires high level of coordination and/or dexterity along with precision.	<ul style="list-style-type: none"> Precise placement of objects; sustained precise movements, e.g., blowing glass, preparing sample for electron microscopy, performing physical therapy techniques, animal surgery

CLARIFICATIONS – PHYSICAL EFFORT

The following definitions assist in applying this sub-factor:

Procedure to be Used When an Essential Duty of the Job Requires a Period of Sustained and Repeated Moderate or High Level Physical Effort that is Concentrated in a Portion of the Year:

When a higher level of physical effort occurs in part of the year and is an essential aspect of the job, and as long as that higher level of physical effort is sustained and repeated, assign the higher level as though the activity occurred over the course of the full year.

First calculate the duration of the activity on a weekly basis and apply the following logic to determine the level score:

- If the activity occurs all year, the higher level score is assigned.
- If the activity is performed for **more** than 6 months, the full level score is assigned.
- If the activity is performed for **more** than 2 months and **up to and including** 6 months, the level score will be reduced by ½ level.
- If the activity is performed for **up to and including** 2 months, the level score assigned will be reduced by a full level.

The resulting level cannot be lower than the level that applies to the regularly occurring physical effort in the job.

Definition of Light, Moderate and Heavy Weights:

Light, moderate, and heavy weights may be defined as follows:

Light - Up to 15 lbs. or 6.8 kgs.

Moderate – 16 lbs. to 35 lbs. or 7 to 16 kgs.

Heavy – 36 lbs. and above or 17 kgs. and above

Moving animate or awkwardly sized weights requires more effort.

- Continued - -

7. PHYSICAL EFFORT

This factor measures the frequency and intensity of the physical demands required by the job that would result in fatigue. This would include standing for long periods, walking, lifting, pushing, pulling, carrying and fine hand movements.

Intensity of physical effort is measured as low, moderate or high. Typical examples of low, moderate and high levels of physical effort are found below the table.

Level of Intensity of Physical Effort	Cumulative Duration (Average Hours Per Day - All Activities)*		
	1 to 2 Hours	More than 2 up to 3.5 hours	More than 3.5 hours
Low	N/A	N/A	1
Moderate	1	2	3
High	3	4	4

Low*: Alternating positions of walking, sitting, standing, movement of light* objects, intermittent periods of keyboarding or other finger movements.

Moderate: Moving or carrying moderate*-weight or awkward objects, e.g., large files or printed volumes, measurement equipment, computer hardware or printers; precise placement of objects or movements (including periods of steady mouse clicking, scrolling, and calculator use; pipetting), prolonged periods of keyboarding or other finger and hand movements (typically associated with production word processing), working in awkward or constrained physical positions or confined spaces with possibility of regular breaks (i.e., relief at desired times), including periods of standing.

High: Carrying heavy* objects, moving and/or manipulating large and awkward equipment (e.g., in and out of buildings, vehicles), working in awkward physical position or confined space without possibility of frequent breaks, or any other activity that requires precise large muscle co-ordination (e.g., demonstrating sports, exercises).

CLARIFICATIONS – PHYSICAL EFFORT continued...

To clarify the application of this sub-factor, the following activities are considered to be of low intensity unless they are performed for a sustained period of more than one hour at a time:

Low: Walking, standing, moving light objects, periods of keyboarding or other finger movements, precise placement of objects or movements (including pipetting, mouse clicking, scrolling, and calculator use for short periods of time).

When performed for periods of more than one hour without a break, the same activities are considered to be of **moderate** intensity.

Summing Activities:

This factor is intended to measure fatigue; therefore, only activities which produce fatigue are counted. The use of large muscles demands significant physical energy and is therefore tiring, even in small increments of time. The use of small muscles is considered tiring when the same muscles are used repetitively for prolonged periods. The use of small muscle groups for short periods of time, followed by a change of activity, is not normally considered fatiguing.

Time spent in activities requiring large muscle use is additive (e.g., one hour moving boxes onto skids and two hours pushing a cart for delivery equals three hours of moderate intensity activity).

Time spent in activities requiring small muscle use is only additive when individual activities are performed for more than one hour each at any one time (e.g., one hour calculator use and five hours intermittent keyboarding equals no hours of moderate intensity and six hours of low intensity activity; but two hours of calculator use and two hours of production-style keyboarding equals four hours of moderate intensity activity).

Part-time:

When someone works part-time in a position, the timelines should **not** be pro-rated. This sub-factor measures duration of activities or exposure. It is measuring the effort required and fatigue that results from activities of specific duration. (e.g. a position that works 3.5 hours per day who spends 2.5 hours each day production word processing would score a 2 in physical effort (moderate effort for more than 2 and up to 3.5 hours/day). The job would not be able to score a 3 as the job does not require any activity for more than 3.5 hours in a day.

CLARIFICATIONS – MENTAL EFFORT

The following definitions and guidelines assist in applying this sub-factor:

Procedure to be Used When an Essential Duty of the Job Requires a Period of Sustained and Repeated High Level Mental Effort that is Concentrated in Part of the Work Time: When a higher level of mental effort occurs for part of the year and is an essential aspect of the job, as long as that higher level of mental effort is sustained and repeated, assign an additional half level when such activity is required only at certain times of the year.

Involvement with Content of Work: The amount of mental effort required to perform the tasks of the job is related to the amount of involvement with the content of the products, as well as to the amount of attention to detail.

- Most activities of **routine intensity** require very limited involvement on the part of the employee with the content of the output. For example, the employee needs to attend to accuracy, but not the meaning of the content when performing copy keyboarding, filing, data entry, and relaying information.
- Activities of **moderate intensity** generally require significant understanding of and attention to the content for output (e.g., providing detailed information, modifying letter templates to produce correspondence, conducting interviews based on templates provided).
- Activities of **high intensity** generally require the employee to generate or create the content of what is produced, such as graphic design, therapeutic counselling, summaries of discussions for minutes, and developing solutions to complex problems.

Graphic Design vs. Graphic Layout: Graphic design is the art of using design elements such as typography and images to convey information or create an effect. Graphic design involves creativity to design printed materials with original elements. Graphic layout typically involves using a menu-driven layout with available templates, samples, etc.

Careful Listening: Careful listening should be assigned as “moderate” where the listener must be attentive to discern important details and then infer information to continue to next steps.

Proofreading vs. Scrutinizing: The distinction between ‘proofreading’ and ‘scrutinizing’ depends on the complexity of the document (e.g., proofreading = reviewing a document that you or someone else has typed to check for typos or other errors; scrutinizing = the action of reviewing more complex materials such as articles for journal submission, University Calendar copy, etc., requiring a greater mental effort).

Taking/Transcribing Minutes and Transcription: Taking/transcribing minutes of meetings using a dictaphone can require both high and moderate mental effort depending on the circumstances (e.g., transcription where there are multiple speakers, speakers with language difficulties, or auditory difficulties may require high mental effort to attend to and discern the information). Transcription where there are 1-2 regular speakers and no auditory difficulties may require only moderate mental effort.

- Continued -

8. MENTAL EFFORT

This factor measures the duration and intensity of mental and sensory demands required to perform the job (i.e., the expenditure of mental energy).

- Mental demands are those activities that use concentration and cause fatigue (e.g., thinking, active and passive listening, interpreting, observing).
- Sensory demands are those activities that use one or more of the five senses (sight, taste, smell, touch and hearing) in the course of the job requirements.
- Intensity of mental effort is measured as low*, moderate or high. Examples are found below.

Level of Intensity of Concentration	Cumulative Duration (Average Hours Per Day - All Activities)*		
	1 to 2 Hours	More than 2 up to 3.5 hours	More than 3.5 hours
Low/Routine*	N/A	N/A	1
Moderate	1	2	3
High	3	4	5

Examples of levels of concentration:

Low*: Collecting routine information, filing, basic word processing of routine documents (correspondence, forms, standard formats), inputting data to a spreadsheet (no formatting or creation of formulae), grading multiple choice tests, pipetting, shelving books, monitoring machines, attending to phone conversations and/or routine demands for information. The person generally picks up where he/she left off, there is no backtracking; the need for detailed or precise work is low.

Moderate: Complex word processing or graphical layout*, creation of spreadsheets including new formulae, charting, advising students, conducting interviews, routine grading where standardized answers are provided, participating in meetings, providing detailed information, attending to single or simultaneous tasks where accuracy of details is important, careful listening* to discern relevant information, performing standardized experiments and/or routine calibration to provided standards. The person spends some time in backtracking to determine and pick up where he/she left off, some time is lost; the need for detailed or precise work is moderate.

High: Graphic design, scrutinizing* for small changes, crisis intervention, therapeutic counselling, taking/transcribing minutes* of meetings, grading essays where evaluation of student's understanding must be made, facilitating meetings/groups, instructing, performing scientific/technical observation or intervention, calibrating complex instruments, preparing calibration standards, developing solutions to complex problems where interruptions cause disruption of the thinking process. The person must spend considerable time in backtracking to determine and pick up where he/she left off, considerable time is lost; the need for detailed or precise work is high.

CLARIFICATIONS – MENTAL EFFORT continued...

Simultaneous Activities: When the sum of time periods listed in the JCQ exceeds those in an average work day due to a number of simultaneous activities, consider this in the context of what elements can be performed simultaneously vs. which are mutually exclusive (e.g., careful listening and taking minutes of meetings can be done simultaneously). Conversely, if the JCQ indicates word processing of documents for 6 hours per day and facilitating meetings for 5 hours per day, this is a scenario that would need to be queried for clarification.

Determination of Level Rating: When a duty of the job is reported on the JCQ but does not meet the minimum threshold required, nor does it meet the minimum threshold when combined with similar levels of concentration, it should not be summarily dismissed.

For example, assuming a unit has weekly meetings where individuals share leading/facilitating the meetings with taking/transcribing the minutes, an individual within that unit reports 'taking/transcribing minutes of meetings' for 1 hour per month and 'facilitating meetings/groups' 3 hours per month. Both of these duties are in the "high" level of concentration category but neither meets the minimum threshold of 1 to 2 hours daily. However, the individual has reported and substantiated that they also perform 'complex word processing' for 2 hours daily while the rest of their day requires only low or routine levels of concentration.

Because the 2 hours daily is the breakpoint (i.e. between “1 to 2 hours” and “more than 2 up to 3.5 hours”), the position should be given the benefit of the higher category “more than 2 up to 3.5 hours” because it requires activities performed at the "high" level.

CLARIFICATIONS – PLANNING AND COORDINATION

The following definitions assist in applying this sub-factor:

Definition of “Operational”:

In [level 5](#), planning and coordination that is operational in nature refers to the actions required to organize/direct the activities of a scope equivalent to a faculty, department, major research project, or other significant function.

Booking appointments:

A Medical Secretary responsible for booking appointments within their own unit would be considered a [level 2](#) - “May occasionally coordinate or make arrangements for an event; or may coordinate the calendars or schedules of a limited number of others”. A Medical Secretary responsible for booking medical tests and other appointments that may need to be coordinated with other facilities or health professionals would be considered a [level 2.5](#) - “(The job also requires) coordinating the activities of people and/or resources and/or information within a single team/department/function/event where there are limited inputs and a limited number of tasks”.

9. PLANNING AND COORDINATION

This factor measures the planning and coordinating responsibilities of the position. Planning is proactive while coordination is reacting and organizing in response to planning. Planning and coordinating may involve establishing priorities; scheduling tasks/activities; or designing/ coordinating programs, events, conferences, athletic meets, meetings and calendars. Planning and coordination may be for one's own position, for a work team or department, or for the university as a whole. Those affected by planning and coordination include employees, volunteers, alumni, students, other universities/institutions and the public. Responsibility for supervising the work or activities is considered in a separate sub-factor.

Level	Planning and Coordination Descriptors
1	<p>Planning and coordination are minimal.</p> <p>Duties involve performance of tasks that are repetitive, well-defined, and clear-cut, with specific guidelines and minimal requirement for individual judgment. Order of tasks is generally set. Variations from routine are discussed with the supervisor.</p>
2	<p>Planning and coordination of own workload is required, since activities are established based on department and University deadlines (including beyond day-to-day).</p> <p>Incumbents are expected to plan and prioritize own activities, although methods are established and supervision is readily available to deal with non-routine matters. May occasionally coordinate or make arrangements for an event; or may coordinate the calendars or schedules of a limited number of others. Examples include: scheduling department seminars or staff meetings, arranging for pre-defined labs.</p>
3	<p>Planning and coordination are primarily activity-based.</p> <p>Incumbent decides order and selects or adapts methods for many work assignments. Assignments may involve coordinating the activities of people and/or resources/information within a single team/department/function/event where there are limited inputs and a limited number of tasks. Planning and coordination are typically focussed on completion of assigned activities (e.g., scheduling, coordination of data for reports, set-up of new software in a department to meet business cycle changes) within established deadlines and procedures. Examples include: organizing faculty recruitment interviews, department rounds, coordinating lab resources and facilities with other lab coordinators, coordinating 1 or 2 large conferences annually.</p>

4	<p>Planning and coordination are primarily activity-based, but involves the arranging/coordinating/scheduling of activities/ people/ resources requiring multiple inputs, tasks and/or projects.</p> <p>May require estimates of time and resources needed to coordinate an event or activity. Typically planning and coordination at this level affect a broad range of individuals either within and/or outside the university and is focussed on assigned priorities such as major events including conferences, athletic meets, research projects, summer institutes, and upgrading hardware and software for a multi-site department or faculty.</p>
5	<p>Planning and coordination are typically operational* in nature, requiring large scale or complex estimates of time and resources to complete assigned tasks.</p> <p>Typical planning and coordination at this level involves multiple inputs and complex tasks, frequently requiring coordination of activities/ resources of a number of departments/functions, including coordinating a major research project, a major campus renovation, or a major technology upgrade.</p>
6	<p>Planning and coordination are typically operational, as in Level 5, but require responsibility for multiple, concurrent major projects.</p>

CLARIFICATIONS – RESPONSIBILITY FOR OTHERS

Managing relationships of a customer-supplier nature where the incumbent is the customer should be assessed under Accountability for Decisions and Actions Affecting People, Assets and Information.

Contractors:

In regard to outside contractors, if the incumbent is to stand beside/watch over the work of a contractor and has responsibility to ensure the job is completed adequately, that person is 'responsible' for the contractor and the work they perform.

'Occasionally provides orientation':

The keyword is 'occasionally'. This would apply if an incumbent were responsible for showing a new employee how to do the job.

Functional guidance:

'Provides functional guidance to others on an ongoing basis' – the keyword is 'ongoing'. An example of a job that would provide functional guidance on an 'ongoing' basis would include a job that serves as the day-to-day resource for others, (e.g., a "go-to" position).

Volunteers:

Responsibility for volunteers may be rated as a [level 1](#) or [level 2](#).

Scheduling:

Responsibility to ensure coverage for absences by referring to an on-call schedule and contacting the next available employee to come to work should be rated under Planning and Coordination, [level 2](#).

Number of Employees Supervised:

The key to applying this sub-factor is to determine how many employees are supervised at a time. If there are 40 over the course of a year, but they are short term and there are typically only 2 in place at one time, the job should be rated as a [level 3](#) – "Has ongoing responsibility for supervising (may include selecting) 1-9 casual employees (at any one time)".

- Continued - -

10. RESPONSIBILITY FOR OTHERS

This sub-factor is used to measure the responsibility that the incumbent of the position assumes for the direction and/or supervision of volunteers, external suppliers/contractors and staff.

The following characteristics of the work are to be considered in selecting a level: the nature of supervision given, based either on accountability for results or functional guidance (how-to), and the number of employees or others directed/supervised. Occasional supervision, such as that performed during the absence of the supervisor on vacation or sick leaves, is not to be considered. **This sub-factor does NOT include the academic supervision of students or the activities of others outside of an employee-type relationship.**

Level	Responsibility for Others Descriptors
1	Has no responsibility for others or Occasionally provides orientation* and shows procedures to others.
2	Provides functional guidance* to others on an ongoing basis and/or Ensures adherence to quality standards and procedures for short-term staff (less than 12 months) and volunteers* for events and activities (may include staffing for short-term needs).
3	Has ongoing responsibility for supervising (may include selecting) of 1 - 9 casual employees (at any one time) and/or Has ongoing responsibility for scheduling*, quality of work, etc. for continuing employees (e.g. lead hand type responsibility), but does not hire or make effective recommendations on human resource matters.
4	Has ongoing responsibility for hiring and supervising 10 or more casual employees. and/or Has responsibility for supervising 1-4 continuing employees and makes effective recommendations on human resource matters.
5	Has responsibility for supervising 5 or more continuing employees and makes effective recommendations on human resource matters.

CLARIFICATIONS – RESPONSIBILITY FOR OTHERS continued...

Due to the wording of the questionnaire, incumbents in some positions that provide orientation or functional guidance to others may have bypassed the opportunity to record these requirements in their JCQ because they checked “no” in response to the first question:

10.1 *“Do you have responsibilities for the coordination/direction/supervision of volunteers, casual employees, work/study employees, suppliers, contractors or staff?”*

Information about the responsibility to orient, train or advise others may be found in other sections of the JCQ or in response to queries.

If there is evidence anywhere in the JCQ that the job requires providing orientation, the second default statement should be used in the rationale for a [level 1](#):

“Occasionally provides orientation and shows procedures to others (e.g.,...)”

Similarly, if there is evidence that the job provides functional guidance, [level 2](#) should be selected and an example provided. The rationale should read:

“The job provides functional guidance to others on an ongoing basis (e.g.,...)”

CLARIFICATIONS – ACCOUNTABILITY FOR DECISIONS AND ACTIONS AFFECTING PEOPLE, ASSETS AND INFORMATION

The following definitions and guidelines assist in applying this sub-factor:

Question 11.5 of the JCQ:

Responses indicated in 11.5 of the JCQ should be counted only if the monitoring refers to work completed by the incumbent that is checked by someone other than the incumbent.

Professional Healthcare Treatment:

A rating of **level 4** would apply to those jobs that have a significant long-term effect on the health of individuals **and** provide professional healthcare (mental/physical) treatment in a clinical setting. Treatment may be on an individual basis, with a number of individuals treated over the course of a day.

This application is restricted to the following positions:

- Clinical Psychologists
- Student Health Nurses
- Social Workers
- Physiotherapists

Level 3 and Level 4 Ratings:

A rating of **level 3** would apply to those jobs that have a significant responsibility for a major component of a process, project or program. A rating of **level 3** would also apply to those jobs that have responsibility for a ‘specialized service’.

A rating of **level 4** would apply to those jobs that have a significant responsibility for a large project, multiple projects or a major component of a large project or program (e.g., development or design of a very large, complex data bases for the University). Accountability in **level 4** may apply to shared accountability.

“Specialized Service” in Level 3:

Providing a ‘specialized service’ means providing “expertise” to the understanding of the needs and/or characteristics of a request and tailoring a response, or applying expert knowledge to provide a solution (to a problem that may be referred to the incumbent by others).

“Small Daily Cash Accounts” in Level 1:

Handling small daily cash accounts includes being responsible for smaller amounts such as departmental petty cash with reconciliation as well as larger cash transactions that are reconciled by someone else.

- Continued - -

11. ACCOUNTABILITY FOR DECISIONS AND ACTIONS AFFECTING PEOPLE, ASSETS, AND INFORMATION

It is recognized that all employees have a basic level of individual accountability in the performance of their regular duties. This sub-factor measures the impact of the decisions and actions taken in the position on both the department's and university's goals and objectives. Effects of decisions and actions may be short or long term, and affect one individual at a time, or groups.

Level	Accountability for Decisions and Actions Affecting People, Assets, and Information Descriptors
1	<p>Work results have limited impact beyond immediate work area, including impact on public image. Work and methods are determined by rules of procedure. Most work and methods are subject to verification and monitoring.</p> <p>Incumbent is accountable for exercising care and accuracy in the performance of duties and is responsible for the safekeeping of equipment, machines or vital records while in use, including confidential files. Information used in the job is mostly straightforward with clear rules for location or retrieval; incumbent records or stores information in existing systems or formats. May handle small daily cash accounts*, catalogue or file paperwork related to programs, policies, services or budgets. Examples: a front-line job that provides general information or service to the public, normally one person at a time, including students, data processing and input, cashiering, animal care, ordering supplies.</p>
2	<p>Work results have moderate impact on immediate work area, short-term impact on individuals, and/or limited impact outside the immediate work area or area where work is performed (but not throughout the university or another institution). Some work and methods are not subject to verification or monitoring. Work may affect public image of service or department.</p> <p>Incumbents are accountable for resources within a unit, such as maintaining unit/section inventory and/or machinery/equipment; ensure the accuracy, manipulation, and/or updating of records and information (including procedure manuals); monitor a unit budget(s) (reconciliation only); maintain, store and safeguard sensitive confidential records; or process, search for, and/or develop information sources. Ensures others have information, data or files in the form they need. May facilitate others' work through provision of services or completion of work products, e.g., a front-line job that provides detailed information to the public or to multiple individuals; advising students on housing options, preparing materials for labs, writing code for customized software application; maintaining back up of research data; or scheduling of recitals, conferences or resources.</p>

**CLARIFICATIONS – ACCOUNTABILITY FOR DECISIONS AND ACTIONS
AFFECTING PEOPLE, ASSETS AND INFORMATION continued...**

“Maintaining a Science Lab” in Level 3:

Maintenance of a lab at this level is understood to include the responsibility for:

- Scheduling equipment use (for internal or external uses);
- Scheduling of staff (to ensure lab coverage);
- Ensuring adequate/appropriate supplies are available for upcoming experiments;
- Ensuring resources (people, equipment, expendable resources) are available, as needed;
- Performing or arranging for maintenance of the lab equipment;
- Ensuring the overall smooth running of the lab.

It is not any one of these elements alone that secures the level, but the comprehensive responsibility.

Examples:

- Ensures that all lab equipment is in good working order; places all orders for material required to conduct experiments; and sets up and calibrates all new equipment.
- Accountable for the purchase of all new laboratory test equipment and the modification and/or repair of this equipment, as required; ensures that the lab is maintained and stocked.
- Maintains a computer laboratory which involves ensuring all equipment (computers, monitors, printers) is in good working order; ensures all required software is installed and working on all computers; ensures that all necessary supplies are ordered (e.g., paper and toner for printers); and ensures that staff are scheduled to assist students during scheduled lab hours.

3	<p>Work results have moderate impact on processes or products that extend beyond immediate work area or area where work is performed and/or have significant long term effects on individuals or short-term effects on groups (but generally not throughout the university or another institution). Most work and methods are generally not subject to verification or checks. Work has impact on public image of university.</p> <p>Incumbent shares accountability for a project's or unit's financial and physical assets with at least one other position (responsibility is integral and substantive). May make purchasing decisions of moderate scope; effectively carries out or facilitates programs through the direct provision of specialized services to the public, students or employees*, such as advising students on specifics of course of study; personal counselling; reporting detailed information to granting agencies; maintaining a science lab or workshop*, or monitoring a program/department budget(s), including forecasting of shortfalls; exercising discretion in the release of confidential information.</p>
4	<p>Work results have significant impact beyond immediate work area or area where work is performed or long-term effects on groups, but impact does not generally extend throughout the university or another institution. Most work and methods are generally not subject to verification or checks, and products of work may go outside the university. Work has impact on the public image of the university.</p> <p>Incumbent is accountable* for projects, systems, programs or group of resources within a large department (or unit of equivalent size). May be responsible for the development or modification of policies and procedures that determine the use or disuse of machines and/or equipment or significant change to a program within a unit; purchases of major scope; and/or developing and administering a program budget. Typically carries out the operation of a program or delivery of services, e.g., information in major university publications; accuracy of reproductive health information sessions; development of database for a unit or project.</p>
5	<p>Work results have a substantial and/or long-term impact throughout the university or another institution. The work may be in a technical or specialized area where products cannot be checked before being released.</p> <p>Incumbents may develop and/or plan programs and budgets that support operations or services and affect a wide range of people. May have shared responsibility for overseeing the operations of a unit, functions across several departments, and/or administering the budget of a large unit. May be responsible for initiating, recommending and implementing policies and procedures, or creating or developing a unique product(s), related to a program or service for a unit or functional area, e.g., large-scale financial oversight measures; infection control; security measures; network protection; maintenance of operations in centralized service.</p>

CLARIFICATIONS – PHYSICAL ENVIRONMENT

The following definitions assist in applying this sub-factor:

Assessment of Uncomfortable or Confined Work Space:

Uncomfortable or confined work space should be counted only within the physical effort sub-factor regardless of where the information appears in the JCQ.

Frequency of Exposure to Unpleasant Elements:

When considering the definitions of “occasional”, “frequent” and “continuous”, treat the first line in each as the primary statement that is central to the definition. The hours as defined in the plan do not necessarily correlate with the percentages and should be disregarded.

The definitions are amended as follows:

Occasional: Less than 30% of the time on an annual basis

Typically occurs once in a while, but not every day, or every day for less than 30% of the day.

Frequent: 30% - 60% of the time on an annual basis

A regular feature of the job, that occurs during any given day, week or season.

Continuous: More than 60% of the time on an annual basis

Typically occurs for most of the regular work day, all year round (on average).

Equivalents in Frequency:

The Plan provides for equivalencies in frequency of exposure when assigning a level rating. This can be done in two ways, as the following example demonstrates:

Example: 4 occasional elements and 1 frequent element

Method 1: As per the plan, 3 elements occasional is equivalent to 1 element frequent. Therefore, this could be considered as 2 elements frequent (with 1 leftover occasional element) which would be rated as a level 2.

Method 2: 1 frequent element is a least equivalent to an occasional element. Therefore, this could be considered as 5 elements occasional which would be rated as a level 3.

Consider both methods and apply the method which results in the higher level rating.

- Continued -

12. PHYSICAL ENVIRONMENT

This sub-factor measures the degree of unpleasantness of elements inherent to the physical environment where work is performed. Evaluate the challenging physical conditions under which the duties of the position are performed. **Assume that all measures to eliminate discomfort have been applied.** Consider the frequency of exposure to any of the following conditions. Consider equivalents (e.g., exposure to 3 elements occasionally is equivalent to 1 element frequently). Note that hazardous conditions (as opposed to disagreeable ones) are measured in Health and Safety.

- Working outside in a range of weather conditions*.
- Working indoors in extremely hot, wet, cold, or poorly ventilated environments.
- Exposure to unpleasant odours.
- Poor lighting, strong glare.
- Sustained machine or equipment vibration.
- Exposure to dust, dirt, grease or oil.
- Uncomfortable or confined work space*.
- Exposure to loud or irritating noises.
- Exposure to repulsive substances*.
- Requirement to adopt complicated preventive measures or wear protective equipment*.

Occasional*: Less than 30% of the time on an annual basis
Typically occurs once in a while, but not every day, or every day for less than an hour cumulatively.

Frequent*: 30% - 60% of the time on an annual basis
A regular feature of the job, that occurs often during any given day, week or season (for a total on average of more than one hour, but less than half the day).

Continuous*: More than 60% of the time on an annual basis
Typically occurs for most of the regular work day, all year around (on average).

Intensity \ Frequency	Frequency		
	Occasional	Frequent	Continuous
up to 2 elements	1	2	3
3 or 4 elements	2	3	4
5 or more elements	3	4	4

CLARIFICATIONS – PHYSICAL ENVIRONMENT continued...

When physical environmental conditions under which the duties of the position are performed are concentrated in a portion of the year:

When the physical environmental conditions under which the duties of the position are performed exist in part of the year and are an essential aspect of the job, and as long as that higher level physical environment conditions are sustained and recurring, assign the higher level as though the physical environment conditions existed over the course of the full year.

First calculate the duration of the physical environment conditions under which the duties of the position are performed on a weekly basis and apply the following logic to determine the level rating:

- If the physical environmental conditions under which the duties of the position are performed exist all year, the full level score is assigned.
- If the physical environmental conditions under which the duties of the position are performed exist for **more** than 6 months, the full level score is assigned.
- If the physical environmental conditions under which the duties of the position are performed exist for **more** than 2 months and **up to and including** 6 months, the level score assigned will be reduced by a ½ level.
- If the physical environmental conditions under which the duties of the position are performed exist for **more** than 1 month and **up to and including** 2 months, the level score assigned will be reduced by a full level.

The resulting level cannot be lower than the level that applies to the regularly occurring physical environmental conditions of the job.

“Working outside in a range of weather conditions”:

Working outside in a range of weather conditions is different from walking outside in a range of weather conditions. A number of JCQs indicate that the incumbent is walking to other buildings for meetings or to post notices about classes, etc. Walking outside is not considered an unpleasant element and therefore JCQs indicating the incumbent walks to other buildings should not be given credit as a requirement to work outside in a range of weather conditions.

“Exposure to repulsive substances”:

When a JCQ is given credit for “exposure to repulsive substances”, the Rating Notes are to be written to reflect “exposure to biological or repulsive substances”.

“Requirement to adopt complicated preventative measures or wear protective equipment”:

This element, although often broken down, is only one element. The following elements are considered to be disagreeable: face mask, goggles, hearing protection, vests, shields, or Tyvek suits. The requirement to wear a lab coat, gloves alone and/or booties or a hair net, is not considered disagreeable under this element.

CLARIFICATIONS – PSYCHOLOGICAL ENVIRONMENT

The following definitions assist in applying this sub-factor:

Simultaneous vs. Multiple Deadlines:

Simultaneous - 2 activities with deadlines at the same time

Multiple - more than 2 activities with different overlapping deadlines

Procedure to be Used When the Challenging Psychological Conditions Under Which the Duties of the Position are Performed are Concentrated in a Portion of the Year:

When the challenging psychological conditions under which the duties of the position are performed exist in part of the year and are an essential aspect of the job, and as long as that higher level psychological environment is sustained and recurring, the Raters will consider assigning the higher level as though the challenging psychological conditions existed over the course of the full year.

The Raters will first calculate the duration of the challenging psychological conditions under which the duties of the position are performed on a weekly basis and apply the following logic to determine the level rating:

- If the challenging psychological conditions under which the duties of the position are performed exist all year, the higher level score is assigned.
- If the challenging psychological conditions under which the duties of the position are performed exist for **more** than 6 months, the full level score is assigned.
- If the challenging psychological conditions under which the duties of the position are performed exist for **more** than 2 months and **up to and including** 6 months, the level score will be reduced by ½ level.
- If the challenging psychological conditions under which the duties of the position are performed exist for **more** than 1 month and **up to and including** 2 months, the level score assigned will be reduced by a full level.

The resulting level cannot be lower than the level that applies to the regularly occurring psychological environment of the job.

Type and Frequency of Elements:

For consistency purposes, the summary of elements should be formatted as follows and listed with the highest severity and frequency first:

(# of elements intensity/frequency)

Examples:

(1 element moderate/frequent)

(2 elements severe/occasional, 2 elements moderate/continuous)

- Continued -

13. PSYCHOLOGICAL ENVIRONMENT

The sub-factor measures the challenging psychological conditions under which the duties of the position are performed. Consider the frequency with which any of the following conditions occur (note difference in time ranges for frequency measures). Consider equivalents (e.g., exposure to 3 moderate/ongoing elements occasionally is equivalent to 1 moderate/ongoing element frequently).

Moderate / Ongoing	Severe / Acute *
<ul style="list-style-type: none"> Emotionally-charged situations that require listening, assistance, or support or exposure to rudeness. Isolated work spaces, working alone frequently or lack of appropriate privacy in work spaces*. Mental stress caused by unchanging and repetitive work or requirement to remain at work station*. Multiple and/or simultaneous deadlines*; unpredictable or urgent assignments; interruptions; performing tasks based on competing requests from more than one source. Ongoing backlog of work beyond peak periods*. Effects on lifestyle from irregular work hours, frequent overnight travel, or work during evenings or weekends for which no shift premium or other compensatory provisions are provided in the collective agreement, and which is not the result of the voluntary exercise of flexible working hours*. 	<ul style="list-style-type: none"> Exposure to threats to personal safety. Difficult situations that involve conflictive, hostile or violent interactions, including verbal abuse (ongoing). Situations which involve contact with suffering or cause stress due to unresolvable problems where the incumbent cannot change the outcome (ongoing)*.

Occasional: Typically occurs once in a while, but not every day, or every day for less than an hour cumulatively.

Frequent: A regular feature of the job, that occurs often during any given day, week or season (for a total on average of more than one hour, but less than half the day).

Continuous: Typically occurs for most of the regular work day, all year around (on average).

Severity Intensity	Frequency		
	Occasional	Frequent	Continuous
Moderate / Ongoing (1 or two elements)	1	2	2
Moderate / Ongoing (3 or more elements)	2	3	3
Severe / Acute	2	3	4

CLARIFICATIONS – PSYCHOLOGICAL ENVIRONMENT continued...

“Ongoing Backlog of Work”:

A large number of JCQs indicate that incumbents are dealing with an ongoing backlog of tasks. Job evaluation measures those elements of job requirements that distinguish between jobs. The report of ongoing backlog is so widespread that it was not possible to use it as a distinguishing requirement, and the element was therefore eliminated from consideration.

“Lack of Appropriate Privacy”:

The need for privacy is determined by whether the information is sensitive or confidential if overheard by others (e.g., a student advisor who must deal with failing students who are crying in the middle of a busy office shared by others).

“Requirement to Remain at Workstation”:

Jobs that require the incumbent to be physically replaced at the workstation before they can leave would qualify under “requirement to remain at workstation”.

“Effect on Lifestyle”:

If an incumbent is compensated (either in money or time off) for additional hours worked, this would not be counted as an “effect on lifestyle”.

“Situations which...cause stress due to unresolvable problems where the incumbent cannot change the outcome”:

In a case where the position is exposed to clinical trials where patients in some of the trials are chronically ill, with exposure occurring on an occasional basis (e.g., 1-2 hours/2-3 months), the position should be credited with an ‘occasional/severe’ element.

Rating of Severe or Acute Elements:

The following conditions are considered severe or acute:

- Exposure to threats to personal safety
- Difficult situations that involve conflictive, hostile or violent interactions, including verbal abuse (ongoing)
- Situations which involve contact with suffering or which cause stress due to unresolvable problems where the incumbent cannot change the outcome (ongoing)

To be counted as severe/acute, exposure to the condition must be an ongoing and inherent feature of the job. Ongoing is interpreted to mean that the conditions recur in the course of regular performance of the job’s duties. However, the frequency of the occurrence may vary, and is therefore categorized as occasional, frequent, or continuous, according to the definitions for frequency providing in the plan.

CLARIFICATIONS – HEALTH AND SAFETY

The following definitions assist in applying this sub-factor:

Consider the hazards that may be present while doing the job. What is the likely potential for injury, harm or illness to the incumbent? Is the likely harm minor or major? What safety measures are in place (or should be in place) to minimize risk of harm?

All JCQs that are rated as a [level 1](#) in Health and Safety should use the following rationale: “There are minimal health and safety risks inherent in the job.”

“Climbs on Ladders”:

A minimum of 2 times per month is the definition of ‘occasional’. If a job requires the incumbent to climb a ladder 2 or more times per month every month, the job would be scored a [level 2](#). If the job requires the incumbent to climb a ladder 2 or more times per month for 3 sequential months of the year, the job would score a [level 1.5](#).

The following definitions assist in applying this sub-factor.

Minor likelihood:

Possibility for injury, illness or harm exists, but none has been reported.

Limited likelihood:

Some injuries, illnesses or harm have been reported, but most employees do not expect to experience them.

Moderate likelihood:

Over the work life of employees in this position (20 years), there is a likelihood that one or more will experience injury, harm or illness.

Long-term likelihood:

Injuries, illnesses or harm can be expected to occur among some employees in this position over a period of 5 years.

- Continued - -

14. HEALTH AND SAFETY

The University takes seriously its responsibility to maintain a safe working environment for all employees, by implementing a stringent health and safety program. However, a degree of exposure to unanticipated injury still exists. **This sub-factor measures the level of residual risk to the incumbent that is present while doing the job after all safety equipment has been provided and all measures have been taken.** The sub-factor measures hazards that may be difficult to anticipate or avoid and that could cause injury, harm or illness. Effects may be felt immediately or over time. These hazards may include risk of falling, repetitive strain injuries or physical injury from working in area with moving machinery or where an illness or lesion from exposure to toxic or infectious substances could occur.

(See **CLARIFICATIONS for Guidelines for the Application of Level Ratings**)

Minor Health and Accident Hazards	Major Health and Accident Hazards
Generally not requiring lost time (such as mild sprains, abrasions). Exposure to mild infectious diseases, chemicals, fumes. Minor cuts, burns, bruises. Injury causing slight discomfort for a short period of time, little inconvenience to work, and requiring at most a simple protective dressing.	Of a serious nature involving lost time, including disability resulting from RSI (typically involving keyboarding for 3.5 or more hours per day). Exposure to serious infectious disease and/or physical abuse. Severe cuts, burns, bruises, other serious injury. Injury extending beyond the day of occurrence, requiring change in work pattern or medical attention and involving lost time. Work with potentially dangerous equipment or procedures or with hazardous materials.

Level	Health and Safety Descriptors
1	There is a minor* likelihood of a minor injury* or illness or harm to the incumbent.
2	There is a moderate* likelihood of minor injury or a minor* likelihood of a major injury, harm or illness to the incumbent.
3	There is a limited* likelihood of major injury*, harm or illness to the incumbent.
4	There is a moderate* likelihood of major injury, harm or illness to the incumbent. Extra safety measures are in place to prevent harm.
5	There is a long-term* likelihood of major injury, harm or illness to the incumbent. Conditions could be life-threatening or potentially disabling. More stringent safety measures are in place to prevent harm, illness or injury.

CLARIFICATIONS – HEALTH AND SAFETY continued...

Guidelines for the Application of Level Ratings

Levels for the Health and Safety Sub-factor are to be applied as indicated in the following chart:

Level	Health and Safety Descriptors	Guidelines for Application of Level Ratings
1	There is a minor likelihood* of a minor injury or illness or harm to the incumbent.	<p>A rating of level 1 should be assigned when the risk to the incumbent is no higher than for the general population.</p> <p>Examples:</p> <ul style="list-style-type: none"> • most office workers • front line jobs that assist visitors who may have colds, etc. • jobs where the incumbent is required to sometimes drive in the local Hamilton area or occasionally drive to Toronto/London, etc. • jobs where the keyboarding is intermittent even though the incumbent spends the majority of the day at their desk • jobs in customer service areas that have panic buttons in place and require dealing with clients who may be upset or rude • front line jobs that require regular and repeated reaching to handle goods
1.5		<p>A rating of level 1.5 should be assigned when a job meets the criteria for level 2 where the risk is substantive <u>but</u> concentrated in part of the year.</p> <p>Examples:</p> <ul style="list-style-type: none"> • jobs that require driving extensively for the period September to December to visit provincial high schools and must lift heavy boxes in and out of the car (e.g., Liaison Officers) • jobs that require driving within the local Hamilton area <u>every</u> day

CLARIFICATIONS – HEALTH AND SAFETY continued...

Guidelines for the Application of Level Ratings continued...

2	There is a moderate likelihood* of minor injury or a minor likelihood of a major injury, harm or illness to the incumbent.	<p>A rating of level 2 should be assigned to most lab jobs or jobs that are very physical:</p> <p>Examples:</p> <ul style="list-style-type: none">• most lab jobs that involve working with chemicals, radioactive samples, biological samples/waste, bunsen burners, soldering irons or other heat-producing items• jobs that require moving heavy equipment and machinery regularly (e.g. Fitness Coordinator)• jobs that require the incumbent to occasionally climb on ladders (does not include use of step stools)*• jobs that use equipment with moving parts that do not have guards (e.g. lathe)• jobs that require working in wet areas (such as glass washing or cage washing areas) and where risk of falls is constant throughout the day• jobs that counsel upset/distressed individuals in closed-in areas for all or most of every day (e.g. Counselling Psychologist. Does not apply to Student Advisors or Career Counsellors.)• jobs that are very physical (e.g. Mail Sorter that regularly lifts bags of mail)• jobs such as binders that make repetitive wrist and arm movements for most of the day <u>and</u> have potential for cuts from knives and cutters• jobs that require working with people who are ill <u>and</u> require the handling of bodily fluids, specimens, etc. (e.g. Clinic Aide, Nurse)• jobs that require working with animals <u>and</u> have some risk of bites (e.g. Animal Health Technician)• jobs that require the incumbent to drive significant distances throughout the province on a regular basis throughout the year
2.5		<p>A rating of level 2.5 should be assigned when a job meets the criteria for level 3 where the risks are multiple (3 or more), sustained and substantive <u>but</u> concentrated in part of the year.</p> <p>Examples:</p> <ul style="list-style-type: none">• jobs that require significant data entry for more than 3.5 hours each day for January through March of each year

CLARIFICATIONS – HEALTH AND SAFETY continued...

Guidelines for the Application of Level Ratings continued...

3	There is a limited likelihood* of major injury, harm or illness to the incumbent.	<p>A rating of level 3 should be assigned to jobs that: have multiple risks (3 or more) that are sustained and substantive; or require repetitive movements for more than 3.5 hours each day; or for specific jobs in the Nuclear Reactor areas as listed below:</p> <p>Examples:</p> <ul style="list-style-type: none"> • jobs that have multiple (3 or more) risks that are sustained and substantive (e.g. offset press operator job that handles printing solvents regularly, handles machinery with moving parts and lifts heavy boxes) • prolonged production keyboarding for more than 3.5 hours each day (e.g. data management assistant, programmers) • prolonged pipetting for more than 3.5 hours each day • Reactor Operator and iodine production jobs, as identified by the JJESC
3.5		<p>A rating of level 3.5 should be assigned when a job meets the criteria for level 4 where the risks are concurrent, significant and sustained <u>but</u> are concentrated in part of the year.</p>
4	There is a moderate likelihood* of major injury, harm or illness to the incumbent.	<p>A rating of level 4 should be assigned to jobs that require working with concurrent, significant and sustained risks or hazards:</p> <p>Examples:</p> <ul style="list-style-type: none"> • jobs that require the majority of the day be spent on a ladder or scaffolding while operating hand tools or equipment
4.5		<p>If a rating of 4.5 is being considered, the raters are to assign the level rating, record the rationale and then flag the JCQ for discussion with the JJESC.</p>

CLARIFICATIONS – HEALTH AND SAFETY continued...
Guidelines for the Application of Level Ratings continued...

5	There is a long-term likelihood* of major injury, harm or illness to the incumbent. Conditions could be life-threatening or potentially disabling.	If a rating of 5 is being considered, raters are to assign the level rating, record the rationale and then flag the JCQ for discussion with the JJESC.
---	--	---

Guidelines/Extended Clarifications for Education and Experience
Subfactor 5, Job Evaluation Plan
August 2006

These guidelines for Education and Experience, subfactor 5, are intended as a supplement to the Job Evaluation Plan (including its clarifications) to assist in determining the appropriate Education and Experience level for positions in the CAW Local 555 Bargaining Unit.

These guidelines have been developed to reflect the knowledge obtained in current (2006) educational programs and also to describe the pre-job and on-the-job experience required for various types of skills and responsibilities.

When classifying jobs, the following job evaluation groupings were assigned: Accounting, Administrative, Athletics, AV/Print, CAF/Animal Care, Construction, Data Management, Engineer, Healthcare, Instructional, IT, Lab Tech, Library, Mail Services, Medical Secretary, Museum, PR/Alumni, Program, Purchasing, Reactor, Receiver, Registrar, Research Admin, Research Coordinator, Research Lab, Retail, Student Services, and Technician.

Guidelines were written for some of the above job evaluation groupings. The general principles can be applied to other job family groupings.

Internet searches were used to determine the content of current educational programs. These websites have been particularly helpful: www.ontariocolleges.ca for Ontario colleges and www.aucc.ca for Canadian universities. Institutions in or near Hamilton were given preference. Appended to these guidelines are course lists from typical, local programs illustrating the content of various programs cited here.

Job Evaluation Grouping, Accounting

Jobs in the Accounting group include a spectrum of positions dealing with financial processes. This includes jobs responsible for processing a variety of financial transactions and standard report generation, positions that have overall administration and oversight of a large number and variety of accounts, and accountant level positions.

Education:

Skills that correspond to a **1 year Community College** program include entry level jobs that may be responsible for completing expense forms, processing journal entries, totaling deposits, generating standard reports and reconciling statements. Specific accounting related functions, such as payroll, require completion of specific courses, but not completion of a full Community College diploma program. The CPM certificate, or certification from the Canadian Payroll Association, is a three semester program beyond secondary school and is credited as a 1 year Community College program.

Skills that correspond to a **2 year Community College** diploma in an Accounting/Financial Administration program include advanced spreadsheet functions, advanced report generation, tracking of accounts and expenses, and troubleshooting anomalies. To determine whether a job requires a 2 year diploma, look for a cluster of such general skills or specialized financial skills.

Skills that correspond to a **Bachelors degree** include more complex writing, generating detailed financial statements and reports, trend and problem analysis and resolution, independent decision-making, and longer term planning and forecasting.

Pre-Job Experience:

Entry level jobs require **minimal** pre-job experience. Typically these jobs require transaction verification, processing and data entry.

Jobs requiring greater knowledge of University-specific office procedures beyond entry level are credited with **1 year** pre-job experience.

Jobs requiring more thorough understanding of University processes or software operation that are not specifically taught in the community college programs are credited with **2 years** pre-job experience.

Jobs that require oversight of a large number of processes and a variety of accounts are credited with **3 years** of pre-job experience.

On-the-Job Experience:

Jobs that provide entry level, routine services are credited with **6 months** on-the-job experience.

Jobs that require familiarity and proficiency with the full-year business cycle and organizational procedures used at the University (beyond the department level) are credited with **12 months** on-the-job experience.

Jobs that require learning a range of procedures with complex alternatives that can only be learned on-the-job are credited with **24 months** of on-the-job experience.

Job Evaluation Grouping, Administrative and Medical Secretary

Jobs in the Administrative job evaluation grouping provide a variety of clerical, secretarial, administrative and coordination support for a variety of academic, administrative, and medical/clinical units, programs, departments and faculties throughout the University.

Education:

Some jobs may be credited with a **High School** diploma. Typically these jobs involve reception, mail distribution, and basic record keeping skills, which do not have formal educational requirements.

Skills that correspond to a **1 year Community College** diploma program in Office Administration include a range of word processing and spreadsheet functions, data entry, internet searches and website updates, communication skills and basic office procedures, including completing correspondence from templates.

Medical transcription or medical terminology courses do not take a full year, but when added to the 1 year Community College diploma in Office Administration, are evaluated at the **2 year Community College** level.

Skills that correspond to a **2 year Community College** diploma in Office Administration include advanced word processing and spreadsheet functions, time management, organizing meetings, arranging travel, scheduling multiple appointments, taking minutes or other transcription work, processing a range of financial transactions, preparation of schedules for multiple individuals, supervisory skills, database development and management, and oral presentation skills. To determine whether a job requires this level diploma, look for such general skills or the specialization of medical support. Program specialties available with a 2 year diploma program include Office Administration, Medical Office Administration and Legal Office Administration. The Medical program prepares students for a range of duties related to medical/clinical environments including Ministry of Health and health insurance billing, hospital unit procedures and investigative procedures in addition to medical transcription and medical terminology.

Some jobs that, in addition to providing administrative support, also provide specialized services in areas such as marketing, communications or executive support to a senior administrative position, may require a **3 year Community College** diploma in the area of the specialty.

Skills that correspond to a **Bachelors degree** include more complex writing and composition, complex problem analysis and resolution, independent decision-making, and longer-term planning and forecasting. A degree in a specific area or major may be required for some positions.

Pre-Job Experience:

Entry level jobs require **minimal** pre-job experience. Typically, this includes a limited range of administrative or secretarial functions: reception, general or limited front-line services, one of several people performing similar functions within a department, appointment booking, processing of limited billing, transcriptions, very limited or no medical knowledge and not the overall operation of a medical office or service.

Jobs requiring greater knowledge of University office procedures (beyond entry level) will require **1 year** pre-job experience.

Jobs requiring more thorough understanding of University processes or software operations that are not specifically taught in the Community College programs will require **2 years** pre-job experience. A combination of administrative, clinical or research support and covering a broad spectrum of duties would require the 2 years of pre-job experience.

Jobs that function as the sole administrative support for an office, a program, a department, a unit or faculty or that require very specialized skills are credited with **3 years** pre-job experience.

On-the-job experience:

Jobs that provide entry level, routine services require **6 months** on-the-job experience.

Jobs beyond entry level require **12 months** on-the-job experience, to include a full annual cycle.

Job Evaluation Grouping, Information Technology

Jobs in the Information Technology Grouping require a wide range of specialized skills including entry level help desk and technical support, programming, configuration, web administration, database implementation, systems evaluation and testing, network analysis and systems administration in a variety of academic, administrative, research and medical/clinical units.

Education:

Skills that correspond to a **High School** diploma involve basic customer service, responding to basic telephone inquiries and basic record keeping skills and do not have formal educational requirements.

Skills that correspond to completion of a **2 year Community College** technician program include: help desk functions, technical support jobs, macros for common application packages, system configuration (e.g., desktop), database management, project management, network connectivity, business concepts. This level would include help desk and entry level tech support positions.

Skills that correspond to completion of a **3 year Community College** technologist program include: systems or application programming, advanced mathematics, interfaces between applications and hardware, system configuration (e.g., servers, security), web services, database design, software engineering, solutions to business problems, systems evaluation and testing. This level would include IT generalists such as an entry-level programmer, entry-level network analyst or web administrator.

Skills that correspond to completion of a **Bachelors degree** include: advanced skills and theory related to software engineering and architecture, graphical interface design, network design, systems architecture, systems integration, database design and architecture for complex, enterprise-wide systems, computer simulation, algorithm design, systems performance analysis, configuration of systems for special purpose computing. Such training prepares employees for more independent thinking, more complex writing, more complex system or process design (beyond the level of computer programming), and report and trend analysis, as well as longer-term systems needs planning and forecasting. This level would include network analysts, systems administration and working-level programmer/analysts.

Pre-Job Experience:

Entry level positions require **minimal** pre-job experience.

Jobs requiring an intermediate understanding of University standards and procedures and a more in-depth understanding of the functioning of academic, business and computing environment are credited with **1 year** pre-job experience.

Jobs requiring greater knowledge and familiarity with the University's standards and procedures and the academic, business and computing environment are credited with **2 years** pre-job experience.

Jobs requiring a more thorough understanding of university processes in order to work on projects of greater scope and complexity, and requiring higher levels of specialization and ability to anticipate consequences and outcomes of major systems changes (skills not specifically taught in community college or university programs) are credited with at least **3 years** pre-job experience.

On-the-Job Experience:

Jobs that are entry level and provide help desk and general technical support require **6 months** on-the-job experience to gain familiarity with in-house systems.

Jobs that require familiarity with the University's standards and procedures plus the academic, business and computing environment are credited with **12 months** on-the-job experience to gain familiarity with the academic and business cycles of the University.

Jobs that require considerable familiarity with University processes and for learning of unique in-house systems designed for specialized functions are credited with **24 months** on-the-job experience.

Job Evaluation Grouping, Library

Jobs in the Library grouping include a range of positions from entry level circulation, reserve, stacks and general positions requiring a basic knowledge of library functions, to specialized expertise in library organization and procedures (e.g., special collections or cataloguing), to research/search skills methodology and a familiarity with a broad range of academic content and areas of research.

Education:

A **2 year Community College** diploma in Library and Information Technology is the minimum educational requirement for most positions in the Library. Skills that correspond to this program include interlibrary lending, classification procedures, specialized collections plus word processing, database management and spreadsheet functions.

Jobs that require investigative thinking, research/search skills methodology, and/or familiarity with a broad range of academic content and areas of research may require a **Bachelors degree** in addition to the 2 year library tech diploma.

Pre-Job Experience:

Entry level positions require **minimal** pre-job experience, as the Community College program includes two or more field placements. This level pre-job experience includes circulation/reserve and stacks positions.

Jobs with duties beyond basic library functions may require **1 year** pre-job experience. This level pre-job experience includes interlending, document supply and acquisitions work.

Jobs requiring more thorough understanding of library processes or software operations that are not specifically taught in the Community College program will require **2 years** pre-job experience. This level pre-job experience includes management of electronic resources.

Jobs that require providing special expertise or functional guidance to others on library procedures require **3 years** pre-job experience. This level includes working with special collections, cataloguing and regular Reference Desk shifts. Jobs that require a Bachelors degree plus the Library and Information Technology diploma or the 2 year Archivist diploma are credited with 2 years pre-job experience for the program completion in addition to 1 year pre-job experience.

On-the-Job Experience:

Entry level positions are credited with **6 months** on-the-job to become familiar with specific library and university procedures. This level of experience includes circulation/reserve and stacks positions.

Jobs that require providing special expertise or functional guidance to others on library procedures require **12 months** on-the-job experience to learn the full scope of applications of the functions of the library and other university systems and procedures and to experience the entire annual cycle.

Job Evaluation Grouping, Program, Registrar and Student Services

Jobs in the Program, Registrar and Student Services groupings include a range of skills related to the support of students in their academic program and career pursuits such as admissions, examination and records administration, skills development, academic advising, career counseling and job placement.

Education:

Skills that correspond to a **1 year Community College** diploma program in Office Administration include a range of word processing and spreadsheet functions, data entry, records management and communication skills.

Skills that correspond to a **2 year Community College** diploma in Office Administration include advanced word processing and spreadsheet functions, time management, scheduling examinations or courses or multiple student placements, rotations or internships, transaction processing and record keeping, and database development and management.

Some jobs that, in addition to providing administrative support, also provide specialized services in areas such as marketing or communications may require a **3 year Community College** diploma in the area of the specialty.

Skills that correspond to a **Bachelors degree** includes formal student advising, complex problem analysis and resolution, advanced writing skills, independent decision-making and development of specialized programs to assist students. A degree in a specific area or major may be required for some positions.

Skills that correspond to a **Masters degree** include psychological testing, career counseling, academic skills counseling, physical and learning disability specialists that require in-depth interviewing and assessment skills, therapeutic counseling, advanced program or information evaluation and some strategic planning. Typically writing skills are more advanced than Bachelors level skills.

Some jobs require a **Doctoral degree** for in-depth knowledge of a highly specialized field such as the specialized level of counseling and intervention at a psychologist level, full knowledge of course content at the graduate level at McMaster University and other institutions. Strategic planning is of a high level.

Pre-Job Experience:

Jobs that require more focus on advanced knowledge of theory and the academic development of a field learned in a university program rather than on specific procedures typically require **minimal** pre-job experience as the focus is on applying the educational knowledge learned rather than on specific procedures learned in a typical work-setting.

Jobs requiring greater knowledge of University procedures (beyond entry level) will require **1 year** pre-job experience.

Jobs requiring more thorough understanding of university processes or software operations that are not specifically taught in the Community College programs will require **2 years** pre-job experience.

Jobs that function as the sole administrative support for a program or that require very specialized skills are credited with **3 years** pre-job experience.

Some jobs involving complex work or projects of extremely large scope require **4 years** pre-job experience.

On-the-Job Experience:

Jobs that provide entry level, routine services require **6 months** on-the-job experience.

Jobs beyond entry level require **12 months** on-the-job experience, to include the full annual cycle.

Job Evaluation Grouping, Research Coordinator

Jobs in the Research Coordinator grouping require a wide range of skills related to academic and clinical research, ranging from jobs that require knowledge of research grants and funding processes, to coordination of multi-centre, large-scale or multiple, interdisciplinary and/or international research studies including knowledge of research methodology (e.g., design of a research study including qualitative and/or quantitative analysis). Supervisory skills may or may not be required. Clinical Research Nurse positions may require a combination of research and nursing skills in addition to knowledge required for clinical trials.

Education:

Jobs that require more focus on administering research such as writing grant proposals, ethics and partnering with industry, or the advanced knowledge of theory and the academic development of a field rather than on specific procedures typically require a **Bachelors** degree. This could include the coordination of a research centre, and jobs that require independent decision-making problem-solving and advanced writing skills.

Jobs requiring full knowledge of research methodology (e.g., design of a research study including qualitative and quantitative analyses) require a **Masters** degree as research methods are not generally taught as part of a Bachelors level program. Research material authoring and qualitative and quantitative data analysis skills are also learned at this level.

Jobs that require an in-depth knowledge in a highly specialized field, combined with knowledge of leading edge technology/methodology and the needs of the field (e.g., industrial applications), and whose work contributes to the growth of knowledge in a field of study require a **Ph.D.**

Pre-Job Experience:

Jobs that require more focus on advanced knowledge of theory and the academic development of a field learned in a Bachelors program rather than on specific procedures typically require **minimal** pre-job experience as the focus is on applying the educational knowledge learned rather than on specific procedures learned in a typical work-setting.

Clinical Research Diploma (1 year beyond the Bachelors) counts as **1 year** pre-job experience in addition to any pre-job experience required by the individual position. Becoming familiar with various research studies requires **1 year** pre-job experience.

Jobs requiring coordination of multi-centre, large-scale or multiple projects require **3 years** pre-job experience, to be familiar with varying skill sets required by different projects.

Some jobs involving projects of extremely large scope require **4 years** pre-job experience.

Jobs which contribute to the growth of knowledge in a field of study requires at least **5 years** pre-job experience in addition to the educational requirements to gain knowledge of leading edge technology/methodology and the needs of the field (e.g., industrial applications).

On-the-Job Experience:

Jobs that require more focus on advanced knowledge of theory and the academic development of a field learned in a university program rather than on specific procedures typically require **minimal** on-the-job experience as the focus is on applying the educational knowledge learned rather than on specific procedures learned in a typical work-setting.

Jobs requiring research methodology and coordination of multi-centre, large-scale, or multiple projects require **6 months** on-the-job experience to familiarize themselves with a number of projects.

Jobs that require more thorough understanding of specific research processes will require **12 months** or one full annual cycle on-the-job experience.

Technical Support (Academic and Research)

Jobs from these areas provide support for a variety of undergraduate lab courses, provide technical support for engineering or other similar research projects requiring a wide range of skills from basic scientific and lab knowledge to more advanced knowledge required to deal with environmental issues, quality control, research, sampling and monitoring, production and process control, as well as techniques used in analytical, organic and physical chemistry, chemical engineering and process automation. Some jobs work in areas referred to as wet-labs and provide a range of technical support for research. Responsibilities typically include some of the following: performing standardized experiments, modifying, adapting or designing experiments, analysis of data, literature searches, supervising a lab. Examples of job evaluation groupings include Research Lab, Lab Tech, Engineer and CAF.

Education:

Skills that correspond to a **1 year Community College** program range from basic health and safety training, collecting blood and standard processing of clinical specimens, computer applications and the understanding of a variety of basic lab fundamentals and equipment functions to acquire hands-on skills needed in a lab environment.

A **2 year Community College** technician program provides training focused on working in a laboratory, learning skills to perform tests and analyses, developing knowledge in analytical lab techniques, animal health care, chemical instrumentation and microbiology, the fundamentals of general scientific and technical knowledge as well as scientific methods and experimental techniques, in accordance with accepted principles of quality assurance and manufacturing in industry.

Skills learned in a **3 year Community College** technologist program include chemistry, chemical engineering, environmental engineering, quality control, research production and process control, biology and pathology fundamentals, veterinary procedures, principles and performance of standard lab practices. Clinical Lab Technology (including Medical Laboratory Technology) is a 3 year program which includes training to prepare tissues, study cells and micro-organisms under the microscope and dissection and trains on procedures and techniques for biological, chemical and physical analyses.

Some jobs require a **Bachelors degree**, especially for jobs requiring specialized content, pedagogical knowledge (e.g., the requirement to design advanced university course materials, such as fourth year course projects), develop systems for curating and/or classifying specialized materials, design and fabricate specialized devices, equipment or instruments, or more advanced writing, problem solving or planning skills

There are some specialized skills for which there is no course work available in the respective academic programs at the Bachelors level (e.g., specialized circuits for scientific applications). Jobs requiring such specialized knowledge, problem solving, analysis, creative design, etc. in addition to research methods, advanced writing and analysis skills are credited with a **Masters degree**, but typically require less pre-job experience (e.g., they may be “first jobs” out of school) than their counterparts requiring a Bachelors degree.

A **Doctoral degree** may be required for collaborations to develop new technologies and/or methodologies which contribute to the growth of a body of knowledge in academic and/or research areas especially when an understanding of the underlying scientific principles at the PhD level is required.

Pre-Job Experience:

Entry level positions require **minimal** to **6 months** pre-job experience.

Working level positions require **1 year** pre-job experience to learn to handle production-related activities, to develop hands-on experience working in a lab, and to gain familiarity with a variety of instruments and techniques.

Supervising or coordinating a lab requires **2 years** pre-job experience, to revise lab manuals, design appropriate lab experiments (beyond first year courses). If a job requires field work not included in the respective undergraduate curriculum, consideration should be given to increasing the pre-job experience to 2 years.

On-the-Job Experience:

Entry level positions require **minimal** on-the-job experience.

Working level positions require **12 months** on-the-job experience to gain familiarity with the full annual cycle. Positions which supervise or coordinate a lab require 12 months on-the-job experience to gain familiarity with the academic environment and to experience the full annual cycle.

APPENDIX

Course Lists, by Job Evaluation Grouping

Job Evaluation Grouping, Accounting

Centennial College – 1 year Accounting Program

This 1 year Accounting Program provide solid knowledge of managerial and financial accounting, taxation, accounting systems and the use of accounting software.

Microsoft Applications – Access & Excel	Reading and Writing Prose
Intermediate Accounting 1, 2, 3	Accounting Systems 1
Accounting Microcomputer Applications 1, 2	Personal Tax
Management Accounting 1, 2	Advanced Business Communications

Mohawk College – 2-year Accounting Program

This 2-year Accounting Program prepares students for careers as Controllers, Accountants, Cost Accountants, and Payroll Accountants, Accounting and Related Clerks, Accounting Assistants, Technicians and Junior Staff Accountants, Junior Financial Analysts and Financial Cost Analysts, Office Administrators. Further career opportunities exist in Senior Management positions for those graduates continuing to pursue a professional designation.

Financial Accounting	Business Mathematics
Communication (Langs)	Contemporary Accounting Issues
Career Development	Cost & Managerial Accounting
Microeconomics	Taxation
Business Software Applications	Business Finance
Mathematics	Macroeconomics
Marketing	Business Statistics
Applied Accounting Systems	Business Law
Active Citizenship	Intro Organizational Behaviour
Applied Computer Systems	Researching & Reporting

CGA, CA, CMA Requirements

Professional Designations in accounting provide preparation for accounting positions requiring specialized training in auditing and taxation, and for more senior management positions.

CGA Requirements

Financial Accounting 1,2,3,4
Economics
Law
Quantitative Methods
Management Accounting 1,2
Communications

Finance
Management Information Systems
Business Case 1,2
Taxation
Accounting Theory
Auditing

CA Requirements

A University degree is required to obtain a CA designation. Many University business programs provide a full list of accounting courses that will provide the necessary training required to apply to write the CA exam.

CMA Requirements

Students interested in obtaining a CMA designation can do so through many University MBA programs that provide the required accounting training in preparation for writing the CMA exam.

Job Evaluation Grouping, Administrative

Mohawk College – 1 year Office Administration

This 1 year program provides training in routine office tasks such as document preparation, filing, microtranscription, reception of visitors, answering the telephone and basic record keeping; develops capabilities in microcomputers and current business applications software, including Windows XP, MS Office and WordPerfect. The program includes a two-week, program-related work experience placement.

Communications for Office Admin
Spreadsheet Concepts
Word Processing Concepts
Internet & Web Page Design
Keyboarding & Speed Dev.
Professionalism – Work Environment
Admin. Skills

Document Processing
Recordkeeping for Business
Advanced Communication (Langs)
Software Applications
Professional & Portfolio Development
Office Applications
Microtranscription

Mohawk College – 2-year Office Administration

This 2-year program prepares graduates for careers as Office Administrators, Office, Executive or Administrative Assistants and Administrative Coordinators.

Communication for Office Admin	Accounting – Executive
Human Relations	Interpersonal Communication (Adv.)
Internet & Web Page Development	Word Processing; Word
Computer Skill Bldg	Spreadsheet Applications
Professionalism – Work Environment	Using and Managing Databases
Admin. Skills	Executive Office and Office Management
Document Processing	Skills
Advanced Communication (Langs.)	Active Citizenship
Information Management	Portfolio Development & Career Search
Excel and Powerpoint Concepts	Integrated Office Simulations
Skills Bldg. Speed & Accuracy	Executive Computer Skills
Doc. Process & Simulation	Keyboarding Requirement
Microtranscription	

Mohawk College – 2-year Office Administration - Medical

A 2-year Office Administration – Medical program is offered through Mohawk College, which teaches skills to support a busy hospital unit, including medical transcription, medical terminology and anatomy, meditech training and insurance billing, preparing students for positions that include: unit clerks, medical transcriptionists, patient registration clerks, MOH billing clerks, administrative positions in hospitals and medical offices.

Communication - Office Admin	Accounting – Executive
Human Relations	Interpersonal Commun. (Adv.)
Internet and Web Page Development	Software Applications
Computer Skill Bldg.	Health Insurance Billing
Prof. – Work Environment	Medical Terminology
Admin. Skills	Hospital Unit Procedures
Document Processing	Medical Transcribing
Adv. Communication (Langs)	General Education
Information Management	Active Citizenship
Excel & Powerpoint Concepts	Automated Hospital Systems
Skill Bldg Speed & Accuracy	Software Applications
Doc Processing & Simulation	Investigative Procedures
Microtranscription	Work Exp. – Medical (2 weeks)

Sheridan College – 7 week Program Medical Secretarial – Medical Terminology/Transcription

A seven-week Medical Secretarial Program, covering topics including medical terminology; medical office procedures; medical machine transcription. A variety of careers are available in doctors' offices, clinics and hospitals as medical administration assistants and medical office administrators. Training includes:

Windows XP	Medical Transcribing 1
MS Word for Windows – Level 1	Medical Transcribing 2
Microtranscription	Medical Transcribing 3
Medical Terminology 1	Medical Transcribing 4
Medical Terminology 2	

Job Evaluation Grouping, Information Technology

Mohawk College – 2-year Computer Systems Technician (Networks Technician)

This program teaches the following and prepares students for careers in End User Support, Database/Network Server Management, Systems/Network Administration.

Programming Fundamentals	Active Citizenship
Critical Thinking in Computer Science	Mathematics of Finance
Server Administration	Email Admin. 1, 2
UNIX A	Network Infrastructure
Web Languages & Tools 1	Web Server Administration
Database Fundamentals	Automated Microsoft Admin.
Introduction to Networking	Microsoft Server Admin. 2
Mathematics 1, 2	Statistics
Communications (Langs.)	Wireless Networking
Introduction to UNIX	Client Support
TCP/IP Internet Services	Cisco 1
Microsoft Server Admin.	Admin. Scripting 1
Novell Network Administration	Script Programming
	General Education 1

Mohawk College – 3-year Computer Systems Technology – Software Engineering

This program prepares students for careers such as Database Administrators, Application Programming, Systems Design and Development, Website Design and Development, Systems Integration, and includes the following program of study:

Programming & Web Programming Critical
 Thinking in Computer Science
 Web Languages & Tools
 Database Fundamentals
 Networking
 Mathematics 1, 2
 Communications (Langs)
 Intro – Systems Analysis and Design
 Functional Programming In C
 Data Base Theory & Applications
 Entrepreneurial Training
 Active Citizenship
 Software Engineering
 Object-Oriented Systems
 3gl Programming – Cobol
 Mathematics of Finance
 Strategic Systems

Computer Organization & Function
 Object-Oriented Programming
 Technical Report & Presentation
 Script Programming – Unix
 Technology & Programming For E-
 Commerce
 Statistics
 Advanced Visual Programming
 Java Programming
 Operations Research Methods
 Numerical Analysis
 Web Site Platforms 2
 Internetworking – TCP/IP
 Training – Design & Delivery
 Web Applications Ms.net
 Simulation, Modeling & Game
 Programming

George Brown – 3-year Computer Programmer/Analyst Program

This program prepares students for careers in Database Administration, Systems Analysis and Design, Consulting, Application Design and Development, Internet Application Design and Development, Programmer/Analysts, and includes the following program of study:

Desktop Software Installation and Support
 Database Applications
 Programming
 Math for Technology
 College English
 Current Issues in Health Care Deliver in Ontario
 Windows Application Development
 Networking Technologies for Developers
 Database Management
 Internet Programming
 Math for Information Technology
 Data Structures and Algorithms
 Object-Oriented Systems Analysis
 OS for Client/Server Environments

Professional Communications
 Design and Development of Web Services
 with C#.NET
 Client/Server Application Development
 Advanced Internet Programming – Java
 Interview Skills Development
 Presentation Skills Development
 Systems Analysis Using CASE
 Rapid Application Design Using CASE
 Systems Implementation Project
 Advanced Internet/Intranet Application
 Development
 Database Administration and Support

McMaster University – Bachelor of Computer Science Degree

3-year undergraduate program of study provides training in the following areas:

Imperative Programming/Basic Data Structures
Object Oriented Programming
Digital Systems, Architecture & Organization
Theory of Computation
Communication Skills

Software Design, Specification & Requirements
Information Security
Data Bases
Human Computer Interaction
Web Systems and Web Computing
Computer Networks & Distributed Computer Systems

McMaster University – Bachelors of Engineering Degree in Software Engineering

4-year program of study provides training in the following areas:

Software Design
Data Structures and Algorithms
Digital System Principles & Logic Design
Discrete Math for Software Engineering
Logic of Software Engineering
Math Modelling of Systems
Dynamic Models/Control of Physical Systems
Design & Selection of Prog. Languages
Machine-Level Computer Programming
Computer Architecture & Graphics Processors
Data Bases

Communication Skills & Systems
Intro to Thermo Dynamics & Heat Transfer
Software Development for Computer Eng.
Software Requirements, Inspection, Testing
Scientific Computation & Math Simulation
Real-time Systems & Control Systems
Design of Human-Computer Interfaces
Performance Analysis of Computer Systems
Operations Research
Programming
Networks and Security
Systems Performance Analysis
Parallel/Distributed Computer Systems
Continuous Optimization Algorithms
Distributed Systems Architecture

Job Evaluation Grouping, Laboratory Technician/Technologist

Centennial College – 1 year Laboratory Assistant (Industrial) Program

1 year Community College program provides a full range of techniques, including health and safety, computer applications, various chemical instruments, and microbiological techniques, in addition to hands-on lab skills, and prepares for careers in labs and for handling production-related assignments in a variety of industries. The 1 year program provides training in the following areas:

Biological Systems
Chemistry
Technology Mathematics
Occupational Health & Safety
Microbiology & Microbiology Techniques

Lab Instrumentation
Analytical Chemistry
Microcomputer Applications for Technology A

Sheridan – 2-year Chemical Laboratory Technician Program

2-year Community College program provides students with the opportunity to train to work in a modern laboratory. Students learn to do tests, analysis, developing knowledge in analytical lab techniques, chemical instrumentation and microbiology. Chemical laboratory technicians work with chemists and engineers in research and development labs, quality control and technical service labs, government agencies and educational institutions.

Applied Chemistry
Laboratory Techniques
Electricity
Technology: Apocalypse/Eden
Mathematics & Applied Math
Microbiology
Industrial Systems
Physics for Chemical Sciences

Applied Calculus
Analytical Chemistry
Organic Chemistry
Inorganic Chemistry
Instrumental Analysis
Culture of Quality
Environmental Science
Instrumental Analysis

Mohawk College – 3-year Chemical Engineering Technology Program

3-year Community College Program provides students with the fundamentals of chemical or environmental engineering, that includes training in the areas of quality control, research, production and process control, understanding the theoretical and practical lab skills required to develop a wide range of traditional and instrumental techniques used in the field such as analytical, organic and physical chemistry, chemical engineering and process automation, and an understanding of the concept of Sampling and Monitoring to reduce the impact of technological growth on the environment. Training provides opportunities for careers as Supervisors or Managers of large lab or production facilities, statistical analysts, chemical technologists, environmental researchers and consultants. The 3-year program provides training in the following areas:

General, Analytical, Physical Chemistry
Organic and Inorganic Chemistry
Communications (Langs.)
Essential Computer Skills
Intro to Career Education
Mathematics
Physics
Materials Technology
Statistics
Active Citizenship
Chemical Engineering
Visual Programming
Electricity
Lab and Process Automation

Environmental Biology & Toxicology
Environmental Regulation
Air Pollution Engineering
Hazardous & Solid Waste Mgmt
Wastewater Engineering
Instrumental Analysis
Co-op Work experience

McMaster University – 4-year Biochemistry Program

Biochemistry is the study of the chemical or molecular basis of life and builds on a strong foundation of the other natural sciences. The science of Biochemistry ranges from the study of structures and properties of individual chemicals and molecules (such as proteins and DNA) to their function and integration into the whole organism. It deals with the chemical and physical properties of living organisms and understanding vital biological processes.

Level I

Human Biochemistry I
Human Biochemistry II

Level II

Nucleic Acid Structure and Function
Protein Structure and Enzyme Function
Inquiry in Biochemistry I
Metabolism and Physiological Chemistry
Inquiry II

Level III

Biochemical Research Practice
Cellular Biochemistry
Metabolism and Regulation
Biochemistry and Macromolecules
Clinical Biochemistry
Biochemistry Laboratory I
Nutrition and Metabolism
Biochemistry Laboratory II
Introduction to Computational Biochemistry

Level IV

Senior Project in Biochemistry and Molecular Biology
Inquiry in Biochemistry II
Recombinant DNA Technology and Gene Expression
Advanced Topics in Gene Expression
Senior Thesis in Biochemistry and Molecular Biology
Biotechnology and Drug Discovery
Biochemical Immunology
Structure and Function of Membranes & Macromolecules
Advanced Biochemistry Laboratory
Biotechnology and Genetic Engineering Laboratory
Research Project in Biochemistry and Molecular Biology
Biochemical Pharmacology
Computational Biology

McMaster University – Master’s Biochemistry Program

A candidate for the M.Sc. degree is required to spend at least one calendar year in full-time study at McMaster University. The candidate is required to complete satisfactorily not fewer than one full graduate course (which must be at the 700-level). The candidate must also present a thesis which will embody the results of original research. The thesis must be defended in an oral examination. The candidate will be required to participate in the departmental seminar program designed to hone lecturing and presentation skills. The Master's program student will have committee meeting intervals of 6 months, with close supervision ensured by the graduate committee chosen by the student and his/her supervisor. The Biochemistry and Biomedical Sciences Master's program of study is intensive and thesis research driven, with a goal of publication in a respected peer-review journals by the second year of study.

Job Evaluation Grouping, Library

Seneca College – 2 year Library and Information Technician Program

2 year Community College Program whose focus is practical and experience-based, with a high proportion of time using computers and software specific to the library and information industry, to organize and retrieve information, providing a wealth of opportunities in the information sector including internet applications, training and customer support. The program provides opportunities for a careers in business corporations, professional firms, cultural organizations, financial institutions, schools and public libraries.

The 2 year program provides training in the following areas:

College English	Database Searching I, II
Introduction to Computers & Applications	Field Placement 1, II, III
Introducing Libraries	Descriptive Cataloguing
Library Catalogues and Bibliographies	Subject Collections
Basic Library Skills	Library Promotion and Programming
Computers in Libraries	Internet Applications for Library Techs
Derivative Cataloguing	Professional Issues in Libraries
Placement and work skills	Human Relations in Libraries
Acquisitions	User Information Services
Circulation and Interlibrary Loan	Library Automation
Ready Reference	Subject Cataloguing & Classification

Job Evaluation Grouping, Research Coordinator

McMaster University – 1 year (15 units) Certified Clinical Research Associate Program (CCRA)

The program is designed to develop the concepts, skills, strategies, attitudes and knowledge required to perform clinical trials, developing an understanding of administration and progress of a clinical trial while understanding the ethical and legal ramifications. Training includes protocol development, data collection, analysis, monitoring, recording, auditing, ethics and regulations, liabilities and responsibilities of conducting research with human subjects, while gaining knowledge of the Canadian health care system, health care legislation, procedures and practices for regulating the development of health care products. Clinical Trial Researchers are professionals from a variety of academic backgrounds, including health sciences, medicine, nursing, health informatics or epidemiology.

Clinical Trial Research Coordinator
Clinical Trial Methodologies in Practice
Critical Analysis & Advancement of Writing and Communication Skills
Research Ethics
Statistics

Job Evaluation Grouping, Research Laboratory

See lists under Job Evaluation Grouping, Laboratory Technician/Technologist