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### Examining Academic Integrity Using Course-Level Learning Outcomes

Angela Clark

*Sheridan College*, [angela.clark@sheridancollege.ca](mailto:angela.clark@sheridancollege.ca)

Jamie Goodfellow

*Sheridan College*, [jamie.goodfellow@sheridancollege.ca](mailto:jamie.goodfellow@sheridancollege.ca)

Sandra Shoufani

*Sheridan College*, [sandra.shoufani@sheridancollege.ca](mailto:sandra.shoufani@sheridancollege.ca)

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Fall 09-30-2020

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Angela Clark

*Sheridan College, [angela.clark@sheridancollege.ca](mailto:angela.clark@sheridancollege.ca)*

Jamie Goodfellow

*Sheridan College, [jamie.goodfellow@sheridancollege.ca](mailto:jamie.goodfellow@sheridancollege.ca)*

Sandra Shoufani

*Sheridan College, [sandra.shoufani@sheridancollege.ca](mailto:sandra.shoufani@sheridancollege.ca)*

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# Examining Academic Integrity Using Course-Level Learning Outcomes

## **Abstract**

This paper describes a comprehensive review of academic integrity across course-level learning outcomes for all courses at one institution. The authors developed a taxonomy based on The International Center for Academic Integrity's (ICAI) fundamental values of academic integrity to audit course-level learning outcomes for evidence of academic integrity instruction. Approximately 23% of the 3379 courses examined demonstrated a clear component of academic integrity and instruction varied across Faculties and levels of study. The study provides insights into academic integrity instruction and opportunities for academic institutions to better understand, utilize, and integrate academic integrity instruction into their courses and programs.

Cet article décrit un examen complet de l'intégrité académique à partir des résultats de l'apprentissage au niveau des cours effectué pour tous les cours offerts par un établissement. Les auteurs ont mis au point une taxonomie basée sur les valeurs fondamentales d'intégrité académique du International Centre for Academic Integrity (ICAI) afin d'effectuer une vérification des résultats de l'apprentissage au niveau des cours en tant que preuve de l'enseignement de l'intégrité académique. Environ 23 % des 3379 cours examinés ont montré qu'il existait une nette composante d'intégrité académique et que l'enseignement variait d'une faculté à l'autre et selon le niveau des cours. Cette étude présente un aperçu sur l'enseignement de l'intégrité académique et offre des occasions aux établissements universitaires de mieux comprendre, mieux utiliser et mieux intégrer l'enseignement de l'intégrité académique dans leurs cours et dans leurs programmes.

## **Keywords**

academic integrity, education ethics, learning outcomes, universities, colleges, higher education, college curriculum; intégrité académique, éthique de l'éducation, résultats de l'apprentissage, universités, collèges, enseignement supérieur, programmes de cours des collèges

Key priorities for today's post-secondary institutions include graduating students who are well-prepared for their careers by possessing the skills, abilities, and attitudes required in their respective fields. An emerging priority is to also ensure that these graduates are ethical, contributing members of society. Since Bowers (1964) published the first large-scale study on academic misconduct (cheating), decades of research has demonstrated that cheating is still a serious problem in post-secondary institutions.

When it comes to matters of cheating, increasingly institutions are embracing an integrity strategy, which prioritizes education and prevention over rules and penalties. Although this strategy includes disciplinary consequences for engaging in cheating, punitive measures are not the focus. Instead it aims to foster responsible behavior and character development among student populations (Bertram Gallant, 2008; Whitley & Keith-Spiegel, 2001). Students in college are at a stage where they are establishing their approach to ethical decision-making (McCabe et al., 2012). Although ethical education was once considered to be in the domain of the church and family, it is now perceived to fall within the scope of educational institutions (Christensen Hughes & Bertram Gallant, 2016). To that end, scholars have called for a greater focus on students' ethical development by including related education across the curriculum as well as ample opportunities for students to practice these skills (Brimble & Stevenson-Clarke, 2006; Christensen Hughes & Bertram Gallant, 2016; Nonis & Swift, 2001; Whitley & Keith-Spiegel, 2001).

The International Center for Academic Integrity (ICAI) offers a definition for academic integrity, which is a commitment to five fundamental values: honesty, trust, fairness, respect, and responsibility, in addition to having the courage to act upon these values even in difficult circumstances (ICAI, 2014). Many institutions globally have become members of the ICAI and adopted this definition. Although these values are abstract in nature, the ICAI (2014) advocates applying them in ways that promote ethical decision-making and behavior so that academic communities can "translate their ideals into action" (p. 17).

The college has adopted an integrity strategy that aligns with the ICAI's fundamental values as it seeks to develop a college-wide culture of integrity. The college's Academic Integrity Office (AIO) was launched in 2017 and is situated within the library. Its purpose is to develop educational resources on academic integrity, maintain a centralized database of academic integrity breaches and provide support for multiple stakeholders to foster the understanding and practice of academic integrity. The first task of the AIO was to produce a general, non-discipline specific tutorial to provide incoming students with a foundational overview of the institution's expectations for academic integrity. The development of this tutorial led to many questions about what topics to include as foundational knowledge but also what information might overlap with what students are learning in the classroom. Despite wide consultation across the college during this process, an accurate picture of how academic integrity was being communicated to students remained unclear.

This led to the study's primary research question: what are students learning about academic integrity in the classroom? Additionally, if academic integrity is addressed, how is it represented? And how is it addressed across disciplines and year of study? Resources produced by the AIO are supplementary in nature: they are intended to help students learn about academic integrity outside of the classroom. However, keeping in mind that student learning is best supported by courses and activities that are designed cohesively so that learning experiences both within the class and outside of the class "build on and reinforce one another" (Suskie, 2009, p. 4). To gain a view of how students are learning about academic integrity inside the classroom, we sought answers to these questions by examining course-level learning outcomes.

## **Learning Outcomes in Ontario Colleges**

Learning outcomes frame what students should be able to demonstrate, know, and do upon completion of a course or program (Goff et al., 2015). They also measure learning effectiveness and allow post-secondary institutions to evaluate program quality. In the province of Ontario, all colleges of applied arts and technology adopt Outcome-Based Education (OBE) principles. The process of developing curriculum and associated learning outcomes begins with the program standards developed by the Ministry of Training Colleges and Universities (MTCU). At colleges, development teams typically employ the constructive alignment approach where learning outcomes and related course assessments are first identified, followed by the planning of classroom activities, teaching methods and resources (Goff et al., 2015). Using this process, courses are planned so that appropriate scaffolding can occur. This would entail students moving from an introductory level to a more advanced one within a program (Goff et al., 2015), gaining progressively more understanding and greater independence throughout the process. This deliberate organization of course-level learning outcomes, therefore, offers a wealth of information about a course and how that course aligns to its program. They are also a more effective place to gain insight into the components of a course as opposed to a course syllabus which may be customized by the professor.

Previous studies of learning outcomes for the purposes of academic integrity instruction were not found in the research, highlighting a major gap in the literature on this topic. It is unclear why this gap exists as learning outcomes provide rich information that can be used to change, modify or build academic integrity topics into a course or program. The scale of such a study may be daunting and perhaps the information may not be as readily available. Additionally, there could be a stigma associated with making this type of information known—institutions might feel that if their learning outcomes do not significantly speak to academic integrity then this reflects poorly on the learning environment. However, the authors believe that to fully understand how academic integrity is being taught in post-secondary institutions, sharing and transparency are needed. Findings from our study can be used by other institutions to gain a better understanding of what academic integrity is and how it is taught in the classroom. The information gathered from this study has provided the AIO with knowledge about programs and courses at the college and a shared language to engage other institutional stakeholders. Having other institutions conduct a similar study would allow for comparisons across post-secondary institutions and foster the ability to learn from one another.

## **Literature Review**

Despite the lack of studies directly comparable to this study, there are several areas of research that were used to support the direction of this paper. There was a small pool of research that focused directly on examining and classifying learning outcomes. Additionally, syllabus studies were helpful in that researchers conducting this work were often looking to ascertain what is being taught in the classroom and how it is represented. While these studies focused on the assignments or activities occurring over the term, some studies noted other aspects of the course syllabus, such as learning outcomes, to provide insight into the course.

## **Learning Outcomes-Based Studies**

Many studies focusing on learning outcomes reviewed the efficacy of those outcomes on student learning. Very few studies were found that identified or categorized learning outcomes on a specific topic. Of those, a study conducted by Duruk et al. (2017) was the most relevant to our research. This study examined learning outcomes related to the scientific process skill-set within grade school level science curricula. The researchers developed a list of criteria they felt were representative of the scientific process and used document analysis to determine the number of learning outcomes that aligned with each. A similar study conducted by Lam and Tsui (2013) mapped two distinct programs to determine the existence and patterns of representation of subject learning outcomes (SLOs). One aspect of this study involved investigating the status of SLOs as reflected in the planned curriculum and the patterns of coverage by program mapping (Lam & Tsui, 2013). Similar to this study, they were looking for representation of the learning outcomes and to determine patterns within that representation. With limited studies relating to academic integrity learning outcomes, we cast our net wider to systematic studies of academic integrity representation in syllabi.

## **Examinations of Syllabi Relating to Academic Integrity**

Unable to find syllabus studies that focused on academic integrity specifically, we examined studies that discussed it in a tangential way. Many syllabus studies that discussed academic integrity simply noted the presence or lack of an academic honesty or dishonesty statement (Griffith et al., 2014; Ison, 2010; Willingham-McLain, 2011). Notably, research performed by Griffith et al. (2014) looked at syllabi for graduate ethics courses and noted learning objectives as well as academic honesty statements but did not link the two.

Stanny et al. (2015) conducted a study on over 1100 syllabi to develop several inventories to promote information literacy and teaching support at their institution with one review focusing on information literacy outcomes and twenty-first century skills. Within their definition of twenty-first century skills, they note “outcomes aligned with personal and social responsibility” (Stanny et al., 2015, p. 901). Such outcomes can be seen to align with academic integrity, or at least represent a component of it. Similarly, Hrycaj (2006) conducted a study of 100 syllabi for introductory library skills courses with an aim to determine Association of College & Research Libraries (ACRL) standards representation. Findings from this research indicate that citation and the related issue of plagiarism rank very highly on the list of syllabi topics underscoring the concern library instructors have with the ethical use of information by students (Hrycaj, 2006).

## **Method**

### **Research Questions**

As stated earlier, the idea for this research arose while developing the college’s academic integrity tutorial. During the content development phase, two of the researchers wondered how much overlap, if any, there would be with the tutorial and what professors were teaching in class. We contemplated how to best serve all faculties with one tutorial when we heard from professors that the topic is treated in different ways across programs. Additionally, because the tutorial was meant to be foundational, we were curious if academic integrity instruction was represented

differently for first-year students as compared to upper-year students. These thoughts guided the research as we sought to answer the following questions:

1. Is academic integrity taught at the course level? If it is:
  - a. How is it represented: What are the major themes/topics?
  - b. Is it addressed across all academic faculties? Is it more predominant in one faculty?
  - c. Is academic integrity addressed across courses in all years of study?

## Sample

The course data used for this project was provided by the Office of the Vice Provost in Excel format, downloaded from the Curriculum Planning database. Over 27,000 learning outcomes from 3,379 courses were reviewed. The following data points were included in the spreadsheet: subject, faculty, course code, course title, and learning outcomes.

## Procedure

Our first step was to create a taxonomy of terms for an initial review of the learning outcomes. The researchers jointly developed a detailed list of words and actions that included terms such as cheating, honesty, plagiarism, and academic integrity. Using this list, we searched the course learning outcomes and it was evident that the taxonomy lacked breadth, depth and structure, requiring refinement and expansion. Since the college is a member of the ICAI and has adopted their values, we decided that using these values as the foundation of the taxonomy made sense. In the initial review of the course-level learning outcomes, we presumed that the ICAI value nomenclature would be present in a limited way, so we decided to brainstorm synonyms for each value. Each suggested synonym was then evaluated by the group for inclusion. Additionally, while developing the academic integrity tutorial, we referred to many behaviours that could lead to an academic integrity breach, for example, poor time management, note-taking, or underdeveloped citation skills, and wanted to ensure that these were included in the taxonomy.

An early concern was to ensure we were separating academic integrity from overall integrity, yet upon review of the learning outcomes and testing the taxonomy it became clear that it is difficult and arguably unnecessary to separate the two. Since paying attention to students' ethical development is becoming a priority in post-secondary education, including terms like morals, ethics, professional ethics and codes of conduct would be appropriate. This decision was made to ensure that we were not excluding topics that our instructors might use as a springboard to discuss academic integrity in the classroom. The result was a taxonomy with four themes (see Table 1). For the complete taxonomy, see the Appendix.

**Table 1**  
*Definitions of the Four Academic Integrity Themes*

Theme	Definition	Example Terms
1	The broadest theme of academic integrity and its synonyms. Theme 1 concepts are occasionally more theoretical and abstract than other themes.	ethics, morals
2	Builds directly upon the ICAI six fundamental values of academic integrity to ensure the study encompass all branches of academic integrity.	honesty, trust
3	Closely tied to Theme 2 and represents synonyms of the values. Some synonyms may have more specificity.	truthful, reliable, code of ethics
4	Behaviours that are concrete, observable and more easily measured (graded) than Themes 1-3. Not following these behaviours can lead to breaches. Encompasses many study skill behaviours.	referencing, paraphrasing, time management

There was significant discussion regarding what to include in Theme 4. After input from the college library, a case was made for information literacy skills to be included for example, database searching, evaluating sources, etc. However, a question was posed that helped to frame this theme: Would not doing something potentially lead to a lower grade? Or would it lead to an academic integrity breach? When considered through this lens, a student who does not have strong mastery of database searching might earn a lower mark on their paper, but they would not be accused of an academic integrity breach. Thinking of it in this way helped develop the Theme 4 terms with clarity.

Once the taxonomy was finalized, the team collaboratively reviewed several learning outcomes to test if the taxonomy allowed for clear, decisive coding. After finding discrepancies and points that needed further clarification, guidelines were developed to support the taxonomy. When we were satisfied that the taxonomy was clear and exhaustive, one team member was responsible for coding. Where academic integrity instruction was identified in a course learning outcome, a code of 1, 2, 3, or 4 that corresponded to a theme was applied to the learning outcome. To ensure the most accurate coding possible, any learning outcome that left room for interpretation was brought back to the entire research team before a decision was made. Additionally, if more than one theme was present in a learning outcome, both themes were coded. For example, in a law course, the learning outcome “Make reasoned ethical decisions when conflicts of interest arise among the public interest, the employer, professional codes of ethics and personal values” was identified for inclusion in our study. It was coded as “1,3” because of the explicit use of the phrases “ethical decisions” (Theme 1) and “professional codes of ethics” (Theme 3).

We considered the mutual exclusivity of the words/phrases in the taxonomy. For example, how to uniformly code the phrase “professional codes of ethics” as it includes the Theme 1 term “ethics” and the Theme 3 phrase “professional code.” After discussion, it was determined that “ethics” by itself would be coded as Theme 1 because it is broader in scope, relates to an individual’s moral principle and belief system, and is more philosophical in nature. Whereas



“professional code of ethics” relates to a systematic set of guiding principles and conduct expectations for a profession and is more pragmatic in nature. Thus “professional code of ethics” would be coded as Theme 3 because it represents a synonym to responsibility.

Despite our taxonomy, there were some instances where it was unclear if a learning outcome was related to academic integrity. An example of such a learning outcome is “Apply their own authentic leadership style based on their personal strengths and values” which appears in a community leadership course. This includes “authentic” which became part of our taxonomy as a synonym for honesty, but it does not neatly fit into the confines of what we would normally consider to be academic integrity. For these cases, the decision was made to include them. Our rationale was that faculty members ultimately have the greatest understanding of whether a learning outcome was discussing academic integrity and that our preference was to err on the side of caution and include the outcome in our count.

## **Results**

### **The Presence of Academic Integrity in Learning Outcomes**

Over 27,000 learning outcomes across 3,379 courses were reviewed at the time of this study. Of these, a total of 782 courses were found to have a clear academic integrity component, or just over 23%. Below, we share descriptive statistics to present findings. We do not compare the statistical significance between data groups.

### **Themes**

The coding scheme allowed us to easily analyze the results in themes (see Table 2). Theme 2 had the highest number of learning outcomes with 359. This was followed by Theme 1 with 285; Theme 4 had 216, and Theme 3 had the lowest representation with 195 associated learning outcomes. As mentioned in the Methodology, there were instances where one learning outcome addressed more than one theme. In those cases, the learning outcome was coded with multiple themes in order to get a complete thematic representation. This explains why there are 1,055 learning outcomes when counted by theme yet only 782 courses with learning outcomes representing academic integrity.

**Table 2**  
*Total Count of Themes*

Theme	Counts	Percent
1	285	24%
2	359	32%
3	195	21%
4	216	23%
Total	1055	100%

*Note.* Total theme count across all courses included in the study

### Academic Integrity by Faculty (Discipline)

Table 3 illustrates faculty representation of academic integrity learning outcomes in addition to the total number of courses offered in that faculty. In terms of faculty, Business has the highest representation of courses with an academic integrity learning outcome with 50% of course offerings addressing academic integrity. Health & Community Studies follows at 39%; Arts & Design at 27%; Humanities & Social Sciences at 17%; Continuing Education at 10% and Science & Technology has the lowest representation with only 4% of their courses addressing academic integrity.

**Table 3**  
*Analysis of Academic Integrity by Academic Faculty*

Faculty	Courses	With AILO (#)	With AILO (%)
Business	387	193	50%
Health & Community Studies	449	173	39%
Arts & Design	986	269	27%
Humanities & Social Science	311	54	17%
Continuing Education	703	73	10%
Science & Technology	543	20	4%
Total	3379	782	

*Note.* Total number of courses by faculty; Total course count with an academic integrity leaning outcome as a number and as a percentage.

### Academic Integrity by Theme

Readjusting the lens to look at academic integrity by theme, we found Theme 2 most prevalent with 359 occurrences, Theme 1 followed at 285 and Themes 3 and 4 were relatively even with 195 and 216 learning outcomes respectively. Looking at this data by faculty allowed for deeper analysis. Some faculties followed the pattern of theme representation closely, such as.

Business and Arts & Design while other faculty theme data showed very different patterns, such as Science & Technology which had the greatest number of matches for Theme 1 (36%) and the least for Theme 4 (15%). See Table 4 for further analysis of theme representation

**Table 4**  
*Faculty Analysis of Academic Integrity by Theme*

Faculty	Theme 1		Theme 2		Theme 3		Theme 4		Total Themes #	Total Courses #
	Total	%	Total	%	Total	%	Total	%		
Arts & Design	102	32%	134	41%	38	12%	52	16%	326	269
Business	54	20%	132	50%	28	10%	53	20%	267	193
Health & Community Studies	69	28%	48	19%	97	39%	41	17%	255	173
Continuing Education	31	30%	23	23%	20	20%	28	27%	102	73
Humanities & Social Sciences	17	25%	12	18%	2	3%	37	54%	68	54
Science & Technology	12	36%	10	30%	10	30%	5	15%	37	20
Subtotal	285		359		195		216			
Total	1055								1055	782

*Note.* Academic faculties broken out by Themes; Total Themes per faculty as a number and as a percentage.

## Academic Integrity by Year of Study

Table 5 summarizes academic integrity-related learning outcomes by year of study. Course codes at the college are numbered between 1-9. Course codes beginning with 1-4 indicate skill level while codes 5-9 indicate courses within the continuing education faculty, post-graduate certificates, departmental courses and other internal categories that are outside the scope of the analysis by year of study. To support this analysis, all course codes were associated with a year, though there are some exceptions to this rule. For example, a course code beginning with 2 was considered to be a second-year course, where occasionally the course might be required as a first-year credit in a program. This was viewed as the best way to categorize the data to allow for a picture of courses by year of study, although it was recognized that there will be some exceptions. Looking at the distribution of the 654 courses across year of study that have an academic integrity-related learning outcome, 39% are in first year, 31% are in second year, 18% are in third year, and fourth year has the fewest at 12%. However, when analyzing the 654 courses as a percentage of all the courses offered by year of study, a different picture emerges. The percentage of courses that have at least one learning outcome related to academic integrity in the first three years of study averages at 27% (first year, 31%; second year, 27%; third year, 24%) while in fourth year, this number jumps to 38%.

**Table 5**  
*Academic Integrity Learning Outcomes by Year of Study*

Year of study	Total courses	Courses with an AILO (#)	Distribution by year with AILO (%)	Courses with an AILO (%)
First	824	256	39%	31%
Second	749	205	31%	27%
Third	483	117	18%	24%
Fourth	201	76	12%	38%
Subtotal years 1-4	2257	654	100%	
Other (codes 5-9)	1122	128		11%
Total	3379	782		23%

*Note.* Study focuses on 1<sup>st</sup> to 4<sup>th</sup> year courses with academic integrity learning outcomes, courses with codes 5-9 are outside the scope.

## Discussion

### Representation of Academic Integrity in Course-Level Learning Outcomes

Our study shows that representations of academic integrity exist within course-level learning outcomes: 23% of courses at the college have learning linked to academic integrity. With no other studies to compare this to, it is difficult to judge whether this is a high, low or average number, nor was this the point. As institutions look at new ways of incorporating academic integrity instruction, or look to create a culture of integrity, questions about what to teach and when the skills and knowledge should be introduced will likely be an integral part of the discussion.

## Representation of Academic Integrity: Major Themes

The four themes appear somewhat evenly across the learning outcomes. Theme 2 (ICAI values of academic integrity) had the largest number of learning outcomes with 359. Specifically, responsibility and respect comprised the bulk of this theme accounting for over two-thirds while the other terms (honesty, trust and fairness) made up the remainder. Responsibility and respect appear frequently in the learning outcomes, although the intent was likely not to teach academic integrity. For instance, the outcome, “responsibility for self-direction” appeared in 76 courses. Despite the intention, these words link well to academic integrity as students should understand their role in upholding it. The other values in this theme did not appear often; one possible reason is that learning outcomes need to be measurable, and it is easier to create outcomes that measure respect and responsibility than it is to measure honesty, trust and fairness.

Theme 3 (ICAI synonyms and codes of ethics) was added to the taxonomy on the assumption that the ICAI’s values would not be highly represented. While we were incorrect in our assumption, the results (195) validate our decision to include synonyms for the ICAI terms. Additionally, we see a significant number of learning outcomes that speak to a professional code of ethics or practice within an industry. By ensuring that these learning outcomes are represented in our study, we are adopting a more inclusive definition of academic integrity, one that is not separated from the expectations for ethical behaviour in a students’ future career. Furthermore, if we look at themes 2 and 3 together (ICAI terms and their synonyms) we see the highest number of academic integrity representations in learning outcomes (554). The ICAI states that “when the fundamental values are embraced, utilized, and put into practice they become touchstones for scholarly communities of integrity” (ICAI, 2014, p. 17). Our findings are an encouraging indicator that the fundamental values as outlined by the ICAI are already part of our shared dialogue, whether we are aware of them as academic integrity instruction or not.

Theme 1 (academic integrity and its synonyms) also had good representation (285) among the learning outcomes. The word “ethics” and its variations accounted for the highest number of learning outcomes within this theme while the phrase “academic integrity” was found in only 7 learning outcomes. The absence of the phrase in the learning outcomes confirms our approach of employing a well-rounded and inclusive definition of academic integrity that considers values and behaviours.

Theme 4 (academic behaviours that could lead to a breach of academic integrity) had fair representation among the learning outcomes (216). Within this theme we see a large representation of outcomes related to research, reference and citation and interestingly time management, which relates to a major reason why students cheat. Learning outcomes must be measurable and should be linked to an assessment within the course (Lopes, 2015). Given this, if learning outcomes are meant to be task-based, requiring a student to be able to demonstrate that learning has occurred, it makes sense that our fourth theme of behaviours would be well represented because they are both observable and measurable.

Finally, numbers were captured on theme representation within each faculty as well. While each theme was visible to some degree in all the Faculties, some inferences can be drawn from the data. For example, as noted in Table 4, Theme 4 was relatively evenly distributed among all the Faculties except for Humanities & Social Sciences. For this faculty, 54% of their academic integrity learning outcomes are represented by this task-based theme while only 3% of their learning outcomes are found in Theme 3. Another outlier can be seen when looking at the Business faculty, where 50% of their academic integrity learning outcomes are found in Theme 2 centered

largely on the words responsibility and respect. This may be due to broader discussions of ethical decision-making within business professions.

### **Predominance of Academic Integrity in Faculties**

Our study found that academic integrity instruction exists in each of the faculties, but to varying degrees. Our data suggests that 23% of courses have an academic integrity component, but numbers between Faculties indicate that some have greater representation than others. When looking at the data, we took careful note of a) the total number of academic integrity learning outcomes within a faculty and b) the total number of absolute courses within a faculty for comparative purposes. This distinction can be highlighted by the example of the Arts & Design faculty. Of the 782 academic integrity-related learning outcomes, this faculty has the second highest number of courses with 269. However, it also has the greatest number of courses (986), meaning it accounts for only 27% of Arts & Design courses.

Business has the highest number of associated academic integrity learning outcomes when compared to their course offerings. Our numbers show that 50% of their courses touch on academic integrity in some way, with the majority focusing on Theme 2. Anecdotal evidence suggests that this faculty has been working on embedding academic integrity into curriculum, and this may reflect that work.

Perhaps unsurprisingly, Health & Community Studies has the second highest number of associated learning outcomes when compared to their course offerings largely due to outcomes directly related to professional codes of ethics and professional practice. This makes sense when looking at the types of programs offered within this faculty: Nursing, Police Foundations, Personal Support Worker, Pharmacy Technician, etc. Careers in these fields place a strong emphasis on ethical professional practice and may require ethical compliance to a specific association so we would expect to see indications of this at the course level.

While interesting as a benchmark, our data here presents more questions for future research and discussion. For example, our Faculty of Science & Technology numbers show that 4% of their courses have an academic integrity component. Is this low? Does this faculty have more breaches than other faculties? If so, an argument could be made for more academic integrity-related learning outcomes in the curriculum. Oddly, Theme 1 has the greatest representation in this faculty and Theme 4 has the lowest. Perhaps this indicates more emphasis on the abstract principles of academic integrity (Theme 1) without exploring behaviours that support it (Theme 4). Again, further research within the Faculties is needed before any conclusions can be drawn.

### **Academic Integrity across Years of Study**

Our distribution data shows academic integrity instruction across all years of study and that it is more predominant in first-year courses (39%). Given that younger students are more likely to cheat (Bertram Gallant et al., 2015) and the majority of first-year students tend to be younger, we would expect to see academic integrity addressed early in a students' academic career with targeted instruction. Our results show a significant drop after second year as only 18% of third-year courses and 12% of fourth-year courses contain outcomes related to academic integrity.

However, when one looks more closely at the absolute course numbers in fourth year, a trend emerges: 76 out of a possible 201 fourth year courses include academic integrity instruction. This is the equivalent to 38% of courses, the highest occurrence of any year of study. This may be

due to higher expectations around Theme 4 learning outcomes in fourth year, such as student adherence to referencing, copyright and evaluating information.

It is promising to see that academic integrity is addressed in every year of study. Further work could determine if it is included in an intentional way within specific programs, or to investigate the differences between diploma programs (2 or 3 years in length) and honours degree offerings (4 years in length) at the college.

### **Limitations**

This research has some limitations, the foremost being our definition of academic integrity and the taxonomy we used. Apart from the ICAI's values, there are no standard terms used to define academic integrity, creating a certain level of subjectivity. We carefully selected the terms we found to be the most appropriate and useful for our institution, but we recognize that other terms or definitions may be better suited in other institutional contexts. In addition, faculty members were not consulted during the research process and they may have differing views on whether a learning outcome is related to academic integrity. Furthermore, faculty members would likely have identified other aspects of course delivery where academic integrity is explicitly taught or embedded, for example in materials integrated within the Learning Management System (LMS) as well as in assignments and rubrics. Finally, while the codes were developed as a process involving all the authors, ultimately, one author was responsible for coding all learning outcomes in our study. Despite unanimity among the authors in coding a sample at the beginning of our research, there may be a chance of increased bias and reduced reliability due to the nature of our methodology. Despite these limitations, our study provides valuable data that can shed light on academic integrity instruction.

The topic of academic integrity is nuanced and as such, this shows why it is important to have a solid definition and shared understanding within an institution. Without this understanding, faculty members may not recognize or make the connection that certain words (e.g., respect, trust) and behaviours (e.g., citation skills, primary research) can be associated with academic integrity. Having this shared understanding helps establish and promote a culture of integrity. Academic misconduct statements on syllabi and in course handbooks are typically recommended to attempt to dissuade students from cheating (Staats & Hupp, 2012) and may shape how a faculty member conceives of academic integrity, with cheating and plagiarism as the main focus. However, when we are able to communicate how other academic skills and behaviours (e.g., time management, note taking skills) may impact academic integrity, then we can better understand how academic integrity weaves itself into our everyday lives and activities.

### **Conclusion**

Our study aimed to answer a few distinct questions related to academic integrity instruction: Is it taught, how is it represented, and is it taught across all Faculties and years of study? We found that 23% of courses at the college include some form of academic integrity instruction across the four themes in our taxonomy. We noted that there are values that were under-represented, for example, honesty, trust and fairness. We propose that in future program reviews, these values be incorporated more deeply so that students can examine each in depth and consider their applicability. In terms of faculties, the Business and Health & Community Studies have the highest occurrence of learning outcomes related to academic integrity. These faculties are leaders

when it comes to incorporating academic integrity within their curriculum and other Faculties could look to them in adopting their approach. While we do see academic integrity being addressed across all years of study, we found this to be more predominant in first year (31%) and fourth year (38%) when analyzed as a percentage of all the courses offered by year of study. Our results made sense as students in first year are acclimatizing to college life and are learning about the college's expectations for academic work. In fourth year honours degree courses, this could be because these programs are more academically rigorous as students are preparing for the workforce or graduate studies. It could also be viewed as the final opportunity to graduate individuals with the skills to make decisions with integrity.

A consideration in including integrity within course learning outcomes is to utilize constructive alignment so that the learning on this topic is carefully planned and scaffolded within a program to ensure that instruction occurs in a timely and manageable way. In addition, it is important that in-class and supplementary learning material are coherent and serve to reinforce each another (Suskie, 2009). The college's AIO regularly develops educational programming for students to help educate them about academic integrity's importance, such as the aforementioned academic integrity tutorial. Ideally, a more informed and coordinated effort between the AIO and program review committees could work to help provide a coherent and integrated treatment of academic integrity. Our study focused on course-level learning outcomes, and it is our hope that program development and program review teams recognize and understand academic integrity-related terminology and draw upon it when building and revising programs. We also hope to bring awareness and utilization of partners across the institution, for example, the Library or the Writing Centre, especially when it comes to more task-based (Theme 4) behaviours. Through these means we ultimately hope to empower faculty members to address academic integrity more consistently and frequently in the classroom.

### **Further Study**

We see opportunities for further inquiry in three areas. Firstly, this study's results could be compared to academic integrity breach data collected and reported annually at the institution. Specifically, do faculties with high numbers of learning outcomes associated with academic integrity experience the fewest breaches? Conversely, do faculties with fewer academic integrity-related outcomes have higher breach incidents?

Secondly, an approach could include a document analysis where topical outlines, formal assessments/rubrics and LMS content are examined to see if there is divergence between what the course-level learning outcomes require for academic integrity instruction and what this material includes. Lastly, it would be valuable to explore how these learning outcomes are facilitated in the classroom setting, and to that end, consultation with faculty members would provide insight into how they negotiate assigned academic integrity-related learning outcomes and determine if specialized training is required. Possible methodologies could include using a mixed-method of content analysis and faculty surveys as well as classroom observation.

It is our hope that other post-secondary institutions will conduct related studies on learning outcomes and academic integrity. These studies would contribute to this field of inquiry and enhance the understanding of how institutions plan and envision academic integrity instruction. On a macro level, further studies by other institutions would provide a richer collection of course-level learning outcomes, and in this way, the taxonomy could be refined and/or expanded to reflect a wider variety of academic integrity instruction. On a micro level, faculty members could build



taxonomies based on their subject matter expertise and on their experiences with academic misconduct. Such specialized knowledge amongst faculty members could lead to building a more accurate picture of what academic integrity instruction is required within a program, how to best integrate it into courses, and better support student learning on this topic. Overall, while learning outcomes do not tell the whole story, we believe they provide a meaningful first step in data gathering as it relates to academic integrity instruction, and a strong launch pad for further research.

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## Appendix Study Taxonomy

Theme Number	Theme Grouping	Search Terms
1	Academic Integrity Terms	Academic Integrity (7) Integrity (36) <ul style="list-style-type: none"> <li>• Ethics (258)</li> <li>• Ethical (266)</li> <li>• Moral (22)</li> </ul>
2	ICAI Values	Honest* (7) Trust* (30) Fair* (24) Responsib* (509) Respect* (166) Courag* (20)
3	ICAI Value Synonyms	Synonyms for Honest* <ul style="list-style-type: none"> <li>• authentic* (24)</li> <li>• genuin* (2)</li> <li>• sincer* (0)</li> <li>• truth* (24)</li> <li>• veracity (0)</li> </ul> Synonyms for Trust <ul style="list-style-type: none"> <li>• accurate (153)</li> <li>• believable (24)</li> <li>• beliefs (16)</li> <li>• credib* (17)</li> <li>• dependibl* (0)</li> <li>• reliable (18)</li> <li>• reliance (4)</li> <li>• trustworthy (0)</li> </ul> Synonyms for Fair <ul style="list-style-type: none"> <li>• bias* (24)</li> <li>• equal (37)</li> <li>• equit* (109)</li> <li>• unbiased (0)</li> <li>• virtuous (0)</li> </ul>

Theme Number	Theme Grouping	Search Terms
3 (cont)	ICAI Value Synonyms	<p>Synonyms for Responsib*</p> <ul style="list-style-type: none"> <li>• accountab* (31)</li> <li>• authority (14)</li> <li>• conduct (289)</li> <li>• unauthorized (4)</li> <li>• uphold (1)</li> <li>• upstanding (0)</li> <li>• code* of conduct (7)</li> <li>• code* of ethics (42)</li> <li>• ethical code* (1)</li> <li>• professional code* (4)</li> <li>• professional ethics (8)</li> <li>• professional practice (204)</li> <li>• professional requirement* (2)</li> <li>• professional responsibilit* (7)</li> <li>• professional standard* (39)</li> <li>• practice standard* (11)</li> <li>• standard* of practice (17)</li> </ul> <p>Synonyms for Respect*</p> <ul style="list-style-type: none"> <li>• civil (67)</li> <li>• courte* (7)</li> <li>• dignity (3)</li> <li>• honour (0)</li> </ul> <p>No synonyms were selected for Courage as such terms did not relate to academic integrity</p>
4	Academic Tasks/Behaviours	<p>Academic research (3)</p> <p>APA/MLA/AMA/Chicago/ACS/McGill (38)</p> <p>bibliograph* (7)</p> <p>citation (11)</p> <p>conduct research (28)</p> <p>copyright (21)</p> <p>evaluat* information/evaluat* research (17)</p> <p>integrat* information/integrat* research (14)</p> <p>note taking (43)</p> <p>paraphras* (5)</p> <p>plagiar* (1)</p> <p>primary research (3)</p> <p>references, referencing (62)</p> <p>research practice (4)</p> <p>research ethics (5)</p> <p>scholarly research (2)</p> <p>study habits/study skills (2)</p> <p>time management, manage time (69)</p>

*Note.* Number in brackets indicates number of matches found for each taxonomy term. A match does not indicate that the learning outcome was counted as relevant to the study.