Computer Science Summary of Degree Requirements

In the fall of 2017, RIT began a **revised semester** calendar. The latest RIT calendar consists of two 14-week semesters (fall and spring) and a 12-week summer session and no longer includes a winter intersession. This new calendar replaces the semester calendar that RIT began using in fall of 2013 that consisted of two 15-week semesters (fall and spring), a 10-week summer session, and a winter intersession of approximately three weeks. For many years prior to 2013, RIT operated on a quarter calendar that consisted of four ten-week quarters (fall, winter, spring, and summer). The requirements for the **Bachelor of Science (BS) degree in Computer Science** under the **revised semester** calendar are depicted on the Computer Science Worksheet.

A typical student must complete 40 "courses" (some lab science sequences involve separately graded lecture and lab components), the YearOne requirement (for students entering directly from high school), the Wellness Education (i.e., Physical Education) requirement, the co-op requirement, and the RIT writing requirement, as well as other requirements set either by RIT (for example, in the area of General Education) or by Computer Science. This document was written to provide students new to our program with a high-level view of the overall degree requirements. Other documents contained in the handbook provide more focused information. It is a good idea for all students to review the entire handbook early on and then to refer frequently to the handbook as specific issues or questions come up.

In order to graduate, a student must successfully complete at least 126 semester units overall and must meet the minimum requirement for semester units in each of the major categories as described below. Major categories that contribute to the BS degree in Computer Science include:

- 38 semester units of **required Computer Science** – these credits stem from 12 courses (for the purposes of the BS degree in Computer Science, we include one required Software Engineering course in this section); one of the required Computer Science courses is approved as the *Writing Intensive* (*WI*) course within the program
- 12 semester units of **Computer Science Electives** – these credits in most cases stem from taking 4 courses, although there can be some variation in the number of courses taken; at least two of the courses chosen in this category must belong to the same *cluster*
- 12 semester units of **Free Electives** – these credits in most cases stem from taking 4 courses, although there can be some variation in the number of courses taken
- 64 semester units of **General Education** – these credits in most cases stem from taking 20 courses, although there can be some variation in the number of courses taken; two of the courses selected must be approved as *Writing Intensive* (*WI*); Computer Science majors ***may not use*** Computer Science courses to satisfy General Education requirements even though some Computer Science courses

are marked in SIS as General Education Electives or meeting some Perspective (** see notes at the end)
- **YearOne** – this required, but non-credit bearing component, is designed to help first-year students make a successful transition to college
- **Wellness Education** (i.e., Physical Education) – students are expected to successfully complete ***two different*** wellness activity courses
- **Co-op** – students are expected to successfully complete a minimum of one summer and two semesters of cooperative education; note, our co-op requirement is expressed in academic terms, not weeks or hours; it is never too early to start thinking about co-op – one important source of useful information, especially with respect to policy and procedures, is the mandatory co-op orientation that we require all of our students to complete prior to their first co-op; students should also consult the handbook section titled "Co-op" and/or speak with their academic advisor for further information

The **General Education requirement** pertains to courses taken primarily from the College of Liberal Arts and the College of Science, although courses offered elsewhere within RIT can be approved for General education credit as well (** see notes at the end). In some cases, specific courses are mandated, in some cases, students have to select a course from a restricted list of courses, and in other cases, students have a wider range of choices available (the Computer Science Worksheet contains additional details). Students choose courses that fit into the following framework:

- **Foundation** – students complete one of the approved First Year Writing courses that are "designed to give students a strong foundation in communication and critical thinking" (taken from the General Education web pages) as well as to help prepare them for future academic work; such courses contain a significant writing component and are approved as writing intensive (*WI*)
- **Perspectives** – students select courses that are defined to meet the general education learning outcomes associated with a number of fundamentally important liberal arts and sciences disciplines (* but, see next item)
- **Immersion** – students more deeply explore one focus area by selecting three related general education courses.
- **Electives** – students must complete additional courses required by a program to fulfill supporting requirements (e.g., in Mathematics or Science) or have the opportunity to select additional general education courses that interest them; the number of general education electives already designated varies by program

RIT supports **minors** (a full list of available minors may be found by searching the main RIT web site). While the term *minor does not appear* anywhere on the Computer Science Worksheet, in many cases it is a simple matter for students to earn a minor while just meeting degree requirements. For example, a student might complete an immersion in an area within Liberal Arts and just need to take two additional courses to extend the immersion to a minor. The two additional courses can be placed under General Education Electives or Free Electives if there is room. Since Computer Science majors are required to take a substantial number of Mathematics and Science courses, minors in these areas are also reasonably easy to achieve, with additional courses

placed under Science, General Education, or Free Electives, depending on the specific minor chosen. In some cases, for example, one of the Business fields, a student may need to complete five courses, four of which can be used to fulfill Free Electives, with one extra course taken above and beyond meeting the specified BS degree requirements.

RIT also supports **double majors** and **dual degrees** (referred to in some contexts as accelerated dual degree programs). These terms also *do not appear* anywhere on the Computer Science Worksheet. Unlike minors, these options are ***far more complicated*** and require careful planning with your advisor as well as approvals from representatives of both programs involved. In some cases, specific combinations are ruled out by applicable RIT policy. As part of the approvals process, careful consideration is given to timing and scheduling, so some combinations of distinct majors may be denied if students cannot complete both majors within a timely fashion.

The Undergraduate ***Double Major*** Policy is designed so that students may develop a program of study "that meets the requirements of two distinct majors in a single Bachelors degree." Both majors in this case would have to be of the same degree type (i.e., both majors would have to lead to a Bachelor of Science (or B.S. degree) or both majors would have to lead to a Bachelor of Fine Arts (or B.F.A. degree). There is an ***Undergraduate Dual Degree*** Policy that permits students to earn both a B.S. degree and a B.F.A. degree as part of a single program of study. There is no option for a student to earn a dual degree when both programs of study lead to the same type of degree at the undergraduate level. RIT does support ***(accelerated) dual degree programs*** (also referred to at times as simply ***B.S./M.S. programs***) that allow students to earn both a B.S. degree and an M.S. degree in less time than it would normally take to complete each degree separately. Specific program combinations must be registered with and approved by the state of New York. Students interested in any of these possibilities should begin discussions with the Computer Science academic advisor who is assigned to work with double majors.

Computer Science Electives belong to one or more groupings called *clusters*. Undergraduate students with the proper prerequisites are permitted and *encouraged* to take graduate-level Computer Science courses. Students should note, however, that in some cases, a graduate-level course should ***not*** be selected if the student has completed a similar undergraduate-level course. Such details may be found in the course catalog description. Students should also consult the handbook section titled "Computer Science Electives" and/or speak with their academic advisor before selecting Computer Science electives.

Undergraduate programs are required to permit students to take some number of open electives within their degree program, meaning that students are free to select courses for which they are qualified. For Computer Science students, there are a small number of situations that may serve to limit student choices in this regard. Before choosing courses that you intend to use as **Free Electives**, consult the handbook section titled "Forbidden Course Choices and Science Electives" and/or speak with your academic advisor to avoid taking courses that will not count toward your degree requirements.

(**) We have stated this elsewhere, but it is worth repeating. While we have provided students with considerable information regarding their program of study, there are many other rules and regulations that apply to students. Often information is presented through multiple sources and stated in different ways, so that sometimes you seem to get contradictory messages. It is always best if you check with your academic advisor to confirm some of the decisions that you make regarding your academic program rather than just assuming that what you've chosen to do will be accepted.

As a case in point, consider the following. RIT generally operates on the principle that when you take a specific course, it may count toward your degree requirements in only one place. As you've seen above, in order for students to complete the B.S. degree in Computer Science, students must take a set of required Computer Science courses. They must also complete courses that count for General Education, among other things. That seems straightforward, but confusion can set in if you're not careful.

With the Student Information System, students may look for classes that meet various characteristics. If one searches for classes that can be used as General Education Electives, for example, among the classes returned by the search will be a number of Computer Science courses. However, you need to know that for Computer Science majors, Computer Science courses ***may not be used*** to satisfy General Education requirements. The only exception to this is for students who have taken college level introductory Computer Science courses which are not part of our curriculum but which meet elective standards. You will need to speak to your academic advisor for further clarification.

Since you are required to take Computer Science courses, you will have to select other courses to meet General Education requirements. Elsewhere on the Computer Science web site you will find an entry titled "CS Courses used for Gen Ed" which leads you to a document that lists all Computer Science courses that qualify as General Education Electives as well as some that meet Perspectives. We point out on this document that earning General Education credit for Computer Science courses does not apply to Computer Science majors. While we'd be delighted if you stayed in Computer Science, it is true that some students change majors. In the future, if you leave Computer Science as a major, knowing that some of your Computer Science courses could be used to satisfy General Education requirements in your "new" major may turn out to be useful to know!