

Course Syllabus Spring 2019
CP212 Windows Application Programming
Department of Physics & Computer Science, Faculty of Science
Wilfrid Laurier University

Course Instructor

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Office Hours: by appointment.

Course Overview and Approach

This course is designed for students who have a basic understanding of spreadsheets, word processors, and databases as well as introductory programming experience. The course introduces methods to automate repetitive tasks and create user-friendly applications in spreadsheets, word processors, and databases using the powerful macro language, Visual Basic for Applications (VBA). Topics include: a review of programming constructs such as data types, looping, conditional statements, and arrays; the design of graphical interfaces with the typical "look and feel" of Windows software; the design of dialog boxes with controls and event handling code that responds to user input; automating tasks; consolidating data; providing user friendly reports.

Prerequisite: CP102 and previous programming experience, or CP104

Credit: 0.50

3 lecture hours, 1 lab hour weekly

Lecture Schedule:

Section	Days	Times	Room
Lecture -D	MW	10:00 am - 11:20 am	Dr. Alvin Woods Building. Room 2-106

Lab Schedule:

Section	Days	Times	Room
Lab L1	R	08:30 AM - 09:20 AM	BA113
Lab L2	R	11:30 AM - 12:20 PM	BA113

Course Objectives

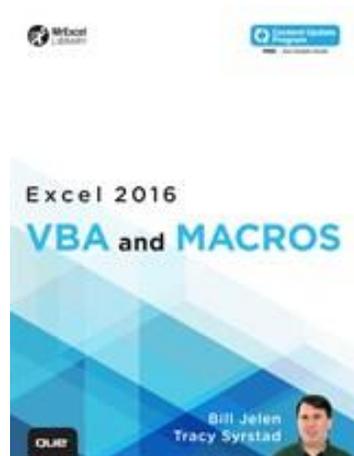
This course aims to build on students' existing programming skills by utilizing a common office application suite as a development platform. You must have taken at least one programming course in high school or university, as programming experience is assumed. By the end of this course you should be able to:

1. Write simple macros in Microsoft Office to automate tasks and improve productivity.
2. Develop full VBA programs to convert data between different formats and applications.
3. Appreciate the power of VBA as a development platform.
4. Create form based applications using VBA userforms.

Course Textbook

[Excel 2016 VBA and Macros](#) (includes Content Update Program)

By Bill Jelen, Tracy Syrstad



ISBN-10: 0-7897-5585-8

ISBN-13: 978-0-7897-5585-8

Content from Excel 2016 VBA and Macros:

Reducing the Learning Curve

This Introduction provides a case study about the power of macros. Chapter 1, "Unleashing the Power of Excel with VBA," introduces the tools and confirms what you probably already know: The macro recorder does not work reliably. Chapter 2, "This Sounds Like BASIC, So Why Doesn't It Look Familiar?" helps you

understand the crazy syntax of VBA. Chapter 3, “Referring to Ranges,” cracks the code on how to work efficiently with ranges and cells.

Chapter 4, “Looping and Flow Control,” covers the power of looping using VBA. The case study in this chapter demonstrates creating a program to produce a department report and then wrapping that report routine in a loop to produce 46 reports.

Chapter 5, “R1C1-Style Formulas,” covers, obviously, R1C1-style formulas. Chapter 6, “Creating and Manipulate Names in VBA,” covers names. Chapter 7, “Event Programming,” includes some great tricks that use event programming. Chapters 8, “Arrays,” and 9, “Creating Classes and Collections,” cover arrays, classes, and collections. Chapter 10, “Userforms: An Introduction,” introduces custom dialog boxes that you can use to collect information from a human using Excel.

Excel VBA Power

Chapters 11, “Data Mining with Advanced Filter,” and 12, “Using VBA to Create Pivot Tables,” provide an in-depth look at Filter, Advanced Filter, and pivot tables. Report automation tools rely heavily on these concepts. Chapters 13, “Excel Power,” and 14, “Sample User-Defined Functions,” include dozens of code samples designed to exhibit the power of Excel VBA and custom functions.

Chapters 15, “Creating Charts,” through 20, “Automating Word,” handle charting, data visualizations, web queries, sparklines, and automating Word.

Techie Stuff Needed to Produce Applications

Chapter 21, “Using Access as a Back End to Enhance Multiuser Access to Data,” handles reading and writing to Access databases and SQL Server. The techniques for using Access databases enable you to build an application with the multiuser features of Access while keeping the friendly front end of Excel. Chapter 22, “Advanced Userform Techniques,” shows you how to go further with userforms. Chapter 23, “The Windows Application Programming Interface (API),” teaches some tricky ways to achieve tasks using the Windows API. Chapters 24, “Handling Errors,” through 26, “Creating Add-ins,” deal with error handling, custom menus, and add-ins. Chapter 27, “An Introduction to Creating Office Add-Ins,” provides a brief introduction to building your own JavaScript application within Excel. Chapter 28, “What’s New in Excel 2016 and What’s Changed,” summarizes the changes in Excel 2016.

Marking Scheme

Assignments	25%
Lab Tasks	15%
Midterm	20%
Final Exam	40%

- Students must pass the weighted average for midterm and final exams to pass the course.

Assignments

- No late assignment (will get a grade of 0).
- Assignments must be submitted online on MyLS.
- Assignments are worth 25% of your final grade. Each of the first 4 assignments is worth 3.75%. Assignment 5 is worth more, at 10% of the final grade.
- **Due Mondays at 11:30 pm (Except Assignment 3)**
- Due dates for the assignments are listed on the Assignments section on MyLS.
- All assignment work is done individually on your own, there is no group work allowed. It is considered [Academic Misconduct](#) to provide your work to another student for any reason.

Missed Assignments

An assignment not handed in receives a mark of 0, unless there is a documented reason. If a documented reason is supplied, the weight of the missing assignment is shifted to the final exam. A copy of the documented reason must be given to and approved by the instructor.

Labs tasks

- Labs are scheduled every week.
- There is no lab during the first week of classes.
- Lab tasks must be completed during the lab time. Lab tasks cannot be completed at home unless a system-wide malfunction causes the online resources to be inaccessible during lab times.

Midterms

Wednesday June 26, 2019. Time (10:00 am - 11:20 am), Location: TBD

Missed Midterm

A missed midterm exam will receive a mark of 0, unless there is a valid documented reason. If a documented reason is provided midterm for missing the midterm, its weight is applied to the final exam.

Final Exam

To be announced by the registrar office.

Students **must pass the weighted average** for midterm and final exams to pass the course.

Bonus Mark

- The purpose is to create a more engaging learning environment and improve student retention
- You will be given 5-8 tasks during lectures
- Bonus worth 3% of the course marks and will be divided equally on the given tasks.
- You will receive marks for answering questions, but more marks for answering correctly

Weekly Schedule(s) Tentative and subject to change

Week	Topic / Chapter	Assignments / Labs
Week 1 -May. 6	Chapter 1	No Lab
Week 2 – May 13	Chapter 2	Lab 1 – building codeless application
Week 3 - May 20	Chapter 3 and Chapter 4	Lab 2 - Ranges
Week 4 - May 27	Chapter 5 and Chapter 6	Lab 3 – Formatting a spreadsheet. R1C1-style, Names in VBA Assignment 1 Due (Intro) - Mon. May 27, 2019
Week 5 - June 3	Chapter 7 and Chapter 8	Lab 4 – Looping and flow Control
Week 6 - June 10	Chapter 24	Lab 5 - Arrays Assignment 2 Due - Mon. June 10,2019
Week 7 - June 17	Chapter 10	Lab 6 – Error Avoidance and Recovery
Week 8 - June 24	Midterm Wednesday June 26, 2019 Chapter 12 midterm review	Lab 7 – Modular programming Assignment 3 Due -Friday. June 28,2019
Week 9 – July 1	Chapter 14 and Chapter 15 Jul 2nd: Make-up Monday class for Canada Day	Lab 8: Data mining/forecasting
Week 10 - July 8	chapter 21 and chapter 20	Lab 9: Userforms Assignment 4 Due – Mon. July 8,2019
Week 11 - July 15	Chapter 25 and Chapter 26	Lab 10: Importing Data from a Database
Week 12 - July 22	Chapter 18 and Chapter 13	Lab 11: Using the CustomUI Editor Assignment 5 Due – Mon July 29,2019
Week 13 -July 29 Classes end July 30 st	Final exam Review July 29 Make-up Monday class for Victoria Day	No Labs

The educational materials developed for this course, including, but not limited to, lecture notes and slides, handout materials, examinations and assignments, and any materials posted to MyLearningSpace, are the intellectual property of the course instructor. These materials have been developed for student use only and they are not intended for wider dissemination and/or communication outside of a given course. Posting or providing unauthorized audio, video, or textual material of lecture content to third-party websites violates an instructor's intellectual property rights, and the Canadian Copyright Act. Recording lectures in any way is prohibited in this course unless specific permission has been granted by the instructor. Failure to follow these instructions may be in contravention of the university's Code of Student Conduct and/or Code of Academic Conduct, and will result in appropriate penalties. **Participation**

in this course constitutes an agreement by all parties to abide by the relevant University Policies, and to respect the intellectual property of others during and after their association with Wilfrid Laurier University.

University and Course Policies

2. **Academic Integrity/Misconduct** (cheating): Laurier is committed to a culture of integrity within and beyond the classroom. This culture values trustworthiness (i.e., honesty, integrity, reliability, fairness, caring, respect, responsibility and citizenship). Together, we have a shared responsibility to uphold this culture in our academic and non-academic behaviour. The University has a defined policy with respect to academic misconduct. You are responsible for familiarizing yourself with this policy and the penalty guidelines, and are cautioned that in addition to failure in a course, a student may be suspended or expelled from the University for Academic Misconduct and the offence may appear on their transcript. The relevant policy can be found at Laurier's academic integrity website along with resources to educate and support you in upholding a culture of integrity. **Ignorance of Laurier's academic misconduct policy is not a defense.** See: www.wlu.ca/academicintegrity
3. **Special Needs:** Students with disabilities or special needs are advised to contact Laurier's Accessible Learning Centre for information regarding its services and resources. Students are encouraged to review the [Academic Calendar](https://academic-calendar.wlu.ca/dates.php?cal=1&t=355&y=77). See: <https://academic-calendar.wlu.ca/dates.php?cal=1&t=355&y=77> for information regarding all services available on campus.
4. **Plagiarism:** Wilfrid Laurier University uses software that can check for plagiarism. Students may be asked to submit their written work in electronic form and have it checked for plagiarism. (Approved by Senate May 14, 2002)
5. **Classroom Use of Electronic Devices** – see Policy 9.3 (Approved by Senate March 8, 2012) http://www.wlu.ca/documents/50202/9.3_Electronic_Device_Policy.pdf
6. **Late Assignment Policy** – Late assignments are not accepted. Students who are ill who miss the deadline for assignments must submit a doctor's note to the Lab Coordinator to have the work accepted. Work that is not submitted to the proper Dropbox will not be marked.
7. **Final Examinations** – Students are required to be available for examinations during the examination periods of all terms in which they register. (See Academic Regulations – examinations in the [academic calendars](#)) The examination period for Spring 2018 is : Aug 3 -Aug 16, 2018
8. **Foot Patrol, The Wellness Centre, and the Student Food Bank** (Approved by Senate November 28, 2011 – see last page.
9. **Other course policies**
 - Students will have **two** weeks after a mark is posted to dispute the mark. After **two** weeks, no changes will be made. It is the responsibility of the student to ensure all grades are posted in MyLearningSpace.
 - Grades will not be changed after the final exam has ended regardless of circumstances. If you are missing your marks email your Instructional Assistant immediately.
 - If you are unable to write the midterms please contact your Course Instructor.
 - Students must complete at least 3 / 5 assignments for term work. If you are unable to complete more than 2 assignments please contact your Course Instructor or Lab Coordinator. Students who complete 2 or less assignments risk the possibility of failing the course.
 - Lab attendance is mandatory. Students must complete at least 9 / 11 labs to be eligible to pass the course.
 - If you fail to complete an assignment, lab exam, or quiz, your mark will be 0 for missed assessments, or partial marks for work not completed.

- Students must pass the weighted average for midterm and final exams to pass the course.

Guidelines for Technology use During Class and During Course Assessment

- Adhering to the University's policy on the use of electronic devices (see above) it is important for you to realize that the use of electronic devices such as cellphones, laptops, and tablets for **non-academic** use during lectures, labs, and assessments **is prohibited**.
- Answering messages, using social networking sites, or gaming are distracting practices that reduce the ability for you to learn the material that is provided. You are a distraction to others in the room as well as the instructor, so electronic devices will only be used for academic purposes.
- I'll request that your cellphone is turned off and put away during lectures, labs, and midterms so you do not distract others, and so that your potential for learning is increased.

If you have personal reasons that require the use of a cellphone for emergency contact reasons, please contact me to discuss them so we can make appropriate arrangements.

Lab Regulations

- The labs are the hands-on portion of the course. In the lab you will be taught how to use WLU's PC network - you will not need your own computer and there is no space for you to use your own laptop.
- It is **very** important to attend labs if you have no previous background in the topics presented, or if you need a refresher. Lab attendance is mandatory to achieve full grades in the course.
- Arriving late causes distractions for your classmates who were able to arrive on time.
- If you miss lab due to illness, make sure you visit Health Services and receive a doctor's note and provide it to the course instructor.
- The Lab instructor will make alternate arrangements in case of equipment failure, holidays, illness, etc. These changes will be posted to the MyLearningSpace web site. Check your WLU email on a regular basis.

General Regulations

Course Drop Dates

Please refer to the Undergraduate Academic Calendar - [Academic Dates](#) Spring term 2018 - for details of course add/drop dates, etc.

Accessible Learning Centre

Students with disabilities or special needs are advised to contact [Laurier's Accessible Learning Centre](#) for information regarding its services and resources, ext. 3086. Students are encouraged to review the Calendar for information regarding all services available on campus.

Learning Services

There is a range of academic learning support services offered at Laurier designed for all students who want to improve their academic achievement in the classroom. These services include the following specific areas:

- Central Academic Advising Office
- Mathematics Assistance Centre
- Study Skills and Supplemental Instruction Centre
- Writing Centre

Visit the [Learning Services](#) web page for detailed information.

Laurier Email Account

Our official means of communication is with your Laurier email account. Students are expected to regularly check their Laurier email account for important notices from the university community. Students are also expected to send emails to official members of the university community from their Laurier email account in order to ensure delivery.

KITCHENER/WATERLOO

Student Food Bank | www.wlusu.com/food-bank/

All students are eligible to use this service to ensure they're eating healthy when overwhelmed, stressed or financially strained. Anonymously request a package online 24-7. All dietary restrictions accommodated.

Foot Patrol | 519.886.FOOT (3668)

A volunteer operated safe-walk program, available Fall and Winter, daily from 6:30pm to 3am. Teams of two are assigned to escort students to and from campus by foot or by van. <http://www.wlusu.com/foot-patrol/>

Peer Connect | 1.866.281.PEER (7337)

A confidential listening, referral, and information line available during evening hours to provide support and resources. Sunday to Thursday, 12pm – 2am | Friday to Saturday 12pm – 3am
<http://www.wlusu.com/peer-help-line/>

The Wellness Centre | 519-884-0710, x3146

The Wellness Centre supports students' physical, emotional and mental health needs. Located on the 2nd floor of the Student Services building, booked and same-day appointments are available Monday to Wednesday 8:30 am – 7:30 pm, Thursday to Friday 8:30 am-4:15 pm. Contact: x3146, wellness@wlu.ca or @LaurierWellness. After hours crisis support available 24/7 - "Good 2 Talk" 1-866-925-5454.