Instructor Information

Instructor: Rahul Singh, PhD
E-Mail: rahul@uncg.edu
Office: 481, Bryan Building.
Course Format and Time: On-Line.
Office Hours: Tuesday 3pm to 6:00 pm.
Other times by Appointment.

Catalog Description

Study of advanced procedural software structures such as multidimensional arrays and tables, indexed file processing, and interactive processing. Introduction to object-oriented software structure such as class definitions, object instances, and class methods.

Student Learning Outcomes

Upon successful completion of this course students will be able to:

1. Design and evaluate the architecture of contemporary business applications
2. Analyze programming principles and best practice to develop business applications.
3. Apply programming concepts to develop business applications.
4. Evaluate entrepreneurial opportunities related to using Web applications and technologies.
5. Implement programming techniques to develop web Applications.
6. Synthesize managerial and entrepreneurial issues related to using applications in a new or existing business.

Required Materials:

Books

I do not require you to buy any textbooks for the course.

The following two books are available for you to download in the library as eBooks. They are the textbooks for this course. We will use these as text and reference materials for the course. I encourage you to download and review these books. I expect that we will completely cover the first book and make good headway into the second.
(Note: If this is your first time using Visual Studio or indeed your first-time programming, reviewing the first few chapters of the second book that introduces you to the VS environment will help you prepare for the course.)


In addition, there are multiple other good reference books with different strengths in different aspects of our course. Some books are strong on Visual Studio and weak on the language, others are good in web application but weak on desktop applications. Among them the following may be of interest:


I encourage you to search and share your findings as you go through the course and help everyone benefit from your perspectives. Discussion boards are provided on canvas for this purpose.

Canvas Learning Management System:
UNCG Canvas is available at https://canvas.uncg.edu. Course materials, announcements and updates will be posted on Canvas regularly. Please check canvas daily for announcements, discussions and materials.

IDE (Integrated Development Environment)
We will use Visual Studio 2019. While VS 2017 is available, our course is geared towards VS 2019 and there is not a whole lot of difference between them. You are welcome to use VS 2017 if you wish.

All ISSCM students have access to Visual Studio Enterprise through UNCG’s Microsoft Academic Alliance program here: https://azureforeducation.microsoft.com/devtools.

You will need to log in with your UNCG username and password. You can then download the VS 2019 Enterprise (which comes with SQL Server Local DB) and install it on your machine. We will use both of these extensively throughout the course. Detailed information on
installation of VS 2019 is provided in canvas. A detailed document that walks you through the process is provided on Canvas.

**Additional Resources**

When learning to develop applications, you use a book as a reference more than as a traditional text. There are multiple resources that you should become aware of and familiar. These will give you examples, complete code as well as documentation and step-by-step guidance on how to build and *play with* applications. Some useful ones for you are:

1. Microsoft Documentation @ [https://visualstudio.microsoft.com/vs/](https://visualstudio.microsoft.com/vs/)
3. Entity Framework Tutorial: [https://www.entityframeworktutorial.net/](https://www.entityframeworktutorial.net/)
5. Stack Overflow: [https://stackoverflow.com/](https://stackoverflow.com/)

Programming is like solving puzzles. The same person may take 2 hours or 20 hours to solve the same problem. My advice to you is – *don’t get stuck and don’t get frustrated*. I am here to help you learn and master the material.

In addition, multiple resources are available for you to view, learn from and adapt into your own solution. We don’t need to re-invent the wheel – we simply need to see how other wheels work in other vehicles and learn from them enough to adapt them into your own. When (not if) you get stuck, please ask. Ask questions and learn from the multitude of resources available. They will never have the exact solution you are looking for, but they will have a solution that you can adapt.

It is also a process of discovery learning – where you learn by seeing and doing so you can discover the solution to your own problem. Many times, one begins to feel that the problem is impossible – it is not. Non-trivial problems are challenging – they require your diligence and creativity.

There is much joy in solving problems. Think about when you were learning to ride a bicycle or learning to swim – they seemed impossible and frustrated you till things began to fit together and you felt great that you accomplished the seemingly impossible task – application development is like that. It seems impossible till you get it and then it’s a lot of fun – please have fun and learn.
Evaluation and Grading

Assignments:
Programming and application development assignments constitute a significant aspect of your skill development in this course. Students are required to complete each assignment.

All assignments will be due at 11:59 pm on the assigned due date. Assignments submitted after their due dates may be accepted with penalty based on valid reasons and documented cause, following discussion with the instructor BEFORE the submission deadline, NOT after.

Materials in subsequent assignments often build on previous ones. Delayed submissions of assignments, therefore, have a carry-over effect. Please make every possible effort to stay on schedule with your assignments.

Participation
Student are expected to regularly discuss their progress in the course and participate in discussions using WebEx and the topic/assignment specific discussion boards on canvas.

Exams
We will have a mid-term and a final exam. We will go over more information about the exams as the semester progresses.

Grades
Course grades will be based on the following:

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<thead>
<tr>
<th></th>
<th>%</th>
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<tbody>
<tr>
<td>Assignments</td>
<td>35</td>
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<tr>
<td>Class Participation</td>
<td>5</td>
</tr>
<tr>
<td>Midterm Exam</td>
<td>25</td>
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<tr>
<td>Final Exam</td>
<td>35</td>
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<td>Total</td>
<td>100</td>
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</table>

The following grading scale will be applied to calculate your final letter grade based on the total grades you earn.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A</td>
<td>93-100%</td>
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<tr>
<td>A-</td>
<td>90-92%</td>
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<tr>
<td>B+</td>
<td>87-89%</td>
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<tr>
<td>B</td>
<td>83-86%</td>
</tr>
<tr>
<td>B-</td>
<td>80-82%</td>
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<tr>
<td>C+</td>
<td>77-79%</td>
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<tr>
<td>C</td>
<td>70-76%</td>
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<tr>
<td>F</td>
<td>&lt; 70%</td>
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Topics and Tentative Schedule
This schedule is tentative. Modification and adjustment may be required during the semester. More details on specific due dates and times, as well as any updates to the schedule as necessary, will be provided on canvas.

<table>
<thead>
<tr>
<th>Week (Date - Monday)</th>
<th>Topic</th>
<th>Deliverables (Due Date)</th>
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<tbody>
<tr>
<td>Week 1: Jan 13</td>
<td>Orientation and Introduction Understanding the architecture of applications.</td>
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<tr>
<td>Week 2: Jan 20</td>
<td>Building your first Desktop Application – Pieces and parts. Programming Fundamentals.</td>
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<tr>
<td>Week 3: Jan 27</td>
<td>Object Oriented Principles, Applications and Architecture.</td>
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<tr>
<td>Week 4: Feb 03</td>
<td>Digging Deeper into data driven applications.</td>
<td>Assignment 0</td>
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<tr>
<td>Week 5: Feb 10</td>
<td>Building Data-Driven Desktop applications (continued). Entity Framework, MVC and .NET</td>
<td>Assignment 1</td>
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<tr>
<td>Week 6: Feb 17</td>
<td>Building Data-Driven Desktop applications (continued). Create, Read Update and Delete (CRUD) with LINQ</td>
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<tr>
<td>Week 7: Feb 24</td>
<td>Building Data-Driven Desktop applications (continued). Midterm Exam</td>
<td></td>
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<tr>
<td>March 02</td>
<td>Spring Break</td>
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<tr>
<td>Week 8: March 09</td>
<td>ASP.NET and Web-Applications with MVC.</td>
<td>Assignment 2</td>
</tr>
<tr>
<td>Week 9: March 16</td>
<td>ASP.NET and Web-Applications (continued). MVC and LINQ.</td>
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<tr>
<td>Week 10: March 23</td>
<td>ASP.NET and Web-Applications (continued). Controllers, Scaffolding CRUD with LINQ</td>
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<tr>
<td>Week 11: March 30</td>
<td>ASP.NET and Web-Applications (continued).</td>
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<tr>
<td>Week 12: April 06</td>
<td>Managing Display with CSS.</td>
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<tr>
<td>Week 13: April 13</td>
<td>Putting it all together – Web Applications with MVC and EF.</td>
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<tr>
<td>Week 14: April 20</td>
<td>Understanding Mobile Applications with .NET (continued).</td>
<td>Assignment 3</td>
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<tr>
<td>Week 15: April 27</td>
<td>Review and Q&amp;A</td>
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<tr>
<td>Week of May 04</td>
<td>Final Exam (more details will be provided on Canvas).</td>
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Additional Information

Attendance Policy:
ISM 310 is an online course. ISM 310 materials will be available on canvas beginning the week of January 13. It is the student’s responsibility to participate in discussions on canvas and complete all requirements for the course. In the beginning of the semester, we will schedule a time for online and face-to-face sessions for discussion and to answer questions. Attendance for these sessions will be voluntary. It is the student’s responsibility to stay on track with readings and assignments to be successful in the course.

Canvas:
Check your Canvas course regularly. Email updates and new information are added to Canvas regularly. You will be responsible for any information or announcements provided to you through email and for any updates on Canvas.

e-Mail:
- Always include a subject line.
- Remember without facial expressions some comments may not be interpreted accurately. Take care to word your emails. Use of emoticons might be helpful in some cases.
- Use standard fonts.
- Do not send large attachments without permission.
- Special formatting such as centering, audio messages, tables, html, etc. should be avoided unless necessary to complete an assignment or other communication.
- Respect the privacy of other class members

Netiquette:
The same guidelines that apply to traditional classes should be observed in the virtual classroom environment. Please use proper netiquette when interacting with class members and the professor.

Policy on Server Unavailability or Other Technical Difficulties:
The university is committed to providing a reliable online course system to all users. However, in the event of any unexpected server outage or any unusual technical difficulty which prevents students from completing a time sensitive assessment activity, the instructor will extend the time windows.

What you need to take this course:
1. Textbooks accessed or downloaded from the library, Visual Studio 2019 and SQL Server provided through the UNCG MSDN license.
2. You must have administrator access to a computer with a high-speed broadband connection. All course materials are only accessible online by logging in to canvas.uncg.edu. A valid UNCG account is required. If you do not own a computer, the computer labs on campus will be open during this semester.
3. While Windows PCs are preferred, an Apple computer with enough empty disk space to load a windows partition also works. Please let me know if you are working with an Apple machine and we can help you set up your machine for the course. DO NOT
**DELAY on this** – the sooner you get your setup working, the easier it will be for you.

4. You must have a working e-mail account. Your first assignment will be to update your e-mail address on the course Web site. Instructions are online at [canvas.uncg.edu](http://canvas.uncg.edu) - you must log in to see the course materials.

5. Because of e-mail viruses, you must use the subject ISM 310 and your name in the message, or the e-mail may be ignored.

6. When you have questions please send me a direct email to rahul@uncg.edu. Please **DO NOT send email on Canvas**.

7. You must check your e-mail regularly throughout the semester. Announcements will be made by e-mail, and on the course Web site at [canvas.uncg.edu](http://canvas.uncg.edu).

8. You are responsible for saving all assignments in an accessible place, so you can turn them in electronically. You should be comfortable using word processing software, programming software and managing files on UNCG’s Box and/or Google Drive. Assignments are only accepted in electronic form.

**Academic Integrity Policies:**

Students in the Bryan School must conform to all existing principles found in UNCG’s Academic Integrity Policy and the Student Code of Conduct. Further details may be found at the following site: [http://sa.uncg.edu/handbook/](http://sa.uncg.edu/handbook/)

**A note about learning:**

Students learn best in quite different ways. One of the advantages of the online format of the course is that it allows students to approach the course in ways that suit their personal styles and preferences. In classrooms, instructors are inclined to teach either as they themselves were taught, or as they think "the average student" prefers. Online, all of the instructor-presented class material is laid out at once, and students can do with it whatever they prefer in order to learn in as personal and unique a fashion as possible.

To understand how you might learn best and how you might approach the course, it's suggested that you complete a learning style inventory, use the information given to figure and interpret your score, and plan your learning strategy accordingly. Another couple of online tools of this sort are the Keirsey Temperament Questionnaire ([http://www.keirsey.com/sorter/register.aspx](http://www.keirsey.com/sorter/register.aspx)) and the Keirsey Character Questionnaire ([http://www.keirsey.com/](http://www.keirsey.com/)).

This course by design specifically accommodates different learning styles by involving a variety of components, including text, video clips, self-check quizzes, reference lists, online discussion, blogs and wikis. Since you are probably used to learning more or less as prescribed or required by a classroom teacher and are not used to designing your own learning strategy, it might take a little time to do that and to settle into a comfortable routine. I think you'll find that as you figure out on your own (and with the help of the online questionnaires mentioned) how to learn the material, everything will fall into place. Online learning, you will find, is quite different than classroom learning. It requires different attitudes, responsibilities, and communication skills.