

This document tracks the time I spent to learn the Online Course "Introduction to Database Design", course number MS300.22 taken at <http://www.eclasses.org/> from reading the text book, reading online resources, software installations, programming and debugging.

These online classes are primarily conducted via the web board interface - called Web Crossing. You can take a Virtual Tour of an Online Classroom at <http://www.eclasses.org/Demo/>  
(note: the ".22" in MS300.22 refers to the number of times the course has been given).

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**Total number of hours I spent (details below) = 109.75 hrs**

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\*\*\*\*\***Course Description**\*\*\*\*\*

### **Introduction to Database Design - course number MS300.22**

**Start Date:** 4-February-2008; **Duration:** 6 weeks; **CEUs:** 3.0; **Course Number:** MS300.22; **Instructor:** Katharine Osborne

### **How eClasses Work**

The classroom environment is based on Lundeen & Associates Web Crossing technology, a threaded messaging system. Instructors post lectures, reading selections, and hands-on assignments once a week in the online classroom. Students can discuss the assignments with the instructor and amongst themselves in the classroom area. **This format has no set meeting time**, which allows students to attend class at a time most convenient to them, yet still provides logically organized communication between class participants. Students can apply for the completion certificate after finishing the class. Web Study certificate is also available. Click on the Certificates link on the top navigation bar for more information.

### **About eClasses.Org - Affordable Web Technology Learning**

Since 1998 eClasses.Org has provided the very best in online training to 45,000 Web developers and other professionals. It offers a catalog of 40 online courses covering the breadth of Web work, from HTML to Flash; from CSS to XML. All classes are taught by fellow experts and working professionals in the field.

- Online, instructor-led web technology classes
- Affordable and flexible learning solution
- 4 Web certificate programs

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### **Course Outline: Introduction to Database Design**

Database design is crucial to effectively implement a relational database. In this course we discuss the parts of a database, how to model data, database construction, and developing a database in a business environment. These skills are fundamental to managing database backed websites, or any relational database application.

#### **Week 1:**

- Describe and define Database Management System (DBMS)
- List and evaluate database models
- Describe the relational database model
- Describe the role of databases in information management

#### **Week 2:**

- Define business entities and business rules
- Describe entities and tables
- Describe attributes and columns
- Understand data types
- Understand relationships and cardinality

#### **Week 3:**

- Understand Data Definition Language (DDL)
- Understand Data Manipulation Language (DML)
- Understand Data Query Language (DQL)
- Understand the role of SQL in the relational database
- Understand rudimentary SQL commands
- Describe database construction methods

#### **Week 4:**

- Understand primary keys
- Understand surrogate and composite keys
- Understand foreign keys
- Understand normalization and normal forms
- Understand denormalization
- Identify and resolve anomalies

#### **Week 5:**

- Understand entity relationship modeling
- Create ER diagrams
- Understand process modeling
- Implement a database

#### **Week 6:**

- Describe naming conventions

- Understand indices
- Understand the client/server model
- Understand how databases are used with applications
- Understand how databases are used with the web
- List and evaluate common database application languages

**Prerequisites:** None

**Requirements:** Microsoft Access 97 or later, OR OpenOffice Base, OR Filemaker Pro. Note that OpenOffice Base is available as a free download.

**Required Book: Databases Demystified** by Andy Oppel, Paperback, 300 pages, **ISBN:** 0072253649, **Publisher:** McGraw-Hill, **Pub.Date:** March 2004

**Instructor: Katharine Osborne**

Katharine Osborne has been a web developer since 1996, and a Unix administrator since 1995. She has been building database backed web applications since 1998 using MySQL, Perl, and PHP. Her teaching experience encompasses ecommerce, web development, programming, and database subjects at the University level. She now owns a web development consultancy helping small businesses establish and improve their web presence.

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## How eClasses Work

### About the Classroom

The classroom environment is based on Web Crossing technology, a threaded messaging system (message board). Instructors post lectures, reading assignment, and hands-on assignment once a week. Classes start on a certain date but this format has no set meeting time, which allows students to attend class at a time most convenient to them. Students only need to complete the assignment within one week and continue with another assignment in the following week.

The main benefit of our classes is the interaction among you, your instructor and other students in classroom (online message board). Students can post comments or questions to the instructor or other students, share ideas, communicate about your learning experience, or discuss topics of the course with other interested students.

### How to Access Your Classroom

After you register for a class, you will get a receipt email and an instructional email. Simply follow the instructions to add yourself to the classroom (or grant yourself access to the classroom). After that, you can access your classroom at <http://interact.eclasses.org/cgi-bin/WebX?15@@>

### How to Use the Classroom

The classroom is organized by folders and discussion. A folder is like a folder or directory on your hard disk. It contains discussions or other sub-folders. Every folder has a title and a heading which describe the folder. On top of each page, there is the path of the current folder, so you can see where you are. If you click on any folder or you will go to that page. Take a look at our [DEMO](#) to see how the classrooms look like.

A discussion has a title and heading that describe its purpose. Discussions are not 'chat-rooms', they are more like organized electronic mail. You can browse a discussion and post a message at any time. To post a message, just scroll down to the message form at the end of each discussion. Fill in the form, and then click on the 'Post Message' button following the form.

Someone else will see your post later, when they are browsing or when they check for new messages. You can always read the whole discussion from beginning to end, so you never have to wonder what people are talking about. Because a discussion may have many of messages posted to it, long discussions are split into smaller pieces. In a long discussion, you'll see buttons at the top and/or bottom that let you go back and forth.

The system automatically keeps track of messages as you view them. When you see a discussion in a folder, the listing includes how many messages are in the discussion, and how many are new messages. There is another way to check for new messages, through your 'Subscription List'. After you subscribe to a discussion or folder, you can later check your subscription list at any time. You'll then be shown the first new message, discussion, or folder that has been added since you last checked.

### **What are CEUs?**

One Continuing Education Unit (CEU) is generally defined as ten contact hours of participation in an organized continuing education experience under responsible sponsorship and qualified instruction. For instructor-led online learning, each course is assigned a number of CEUs for that course which may not relate to the total number of hours an individual takes to complete the course. The number of CEUs awarded is the average number of hours required to complete a course.

### **Class Schedule**

Almost every week, a group of classes is open for registration. A class is open about 1-2 months prior to its start date. Click on the Open Classes link to see the list of classes that are open for registration now. The same class is offered every 2-3 months.

If you are interested in a class but it's not on the Open Classes list, you can click on Class Catalog link and go to the description page for the class. Then click on Register Now button and put in your email address. We will send you an email when the class is open.

### **Registration Deadline**

Effective Jan 1, 2005: The last day to register for a class is the start date of that class.

### **Student Center**

[Student Center](#) is another online system which requires a different password (which students selected when they first register.) Below is the list of what you can do in the Student Center:

- Grant yourself access to your registered courses
- Register for new eClasses
- Get the list of your previous and current courses
- Get your payment history
- Check your final grades
- Apply for class completion certificates
- Apply for Web Study certificates
- Check your Web Study certificate application status
- Retake courses at special prices
- Update your email and mailing address

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**Documentations:** The documents - **file names** - that I wrote/created are:

1. TimeSpentToLearnIntroDatabaseDesign.doc
2. IntroductiontoDatabaseDesign\_MS300.22\_Reading and Programming Assignments.doc
3. Most documents are in \*.html format.

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Date	Time Spent (hrs)	Description (mainly)
Monday January 28, 2008	0.75	<p><b><u>Start of Introduction to Database Design</u></b> –course number <b>MS300.22</b></p> <p><b>Course officially starts on February 4, 2008.</b>  <b>Reading and documenting</b> course materials at eClasses.org at <a href="http://www.eclasses.org/">http://www.eclasses.org/</a> Documents <b>created</b> are located at:            C:\Users\boutros\Documents\MyPrograms\eClasses.Org\Course_IntroductionToDatabaseDesign_MS300.22\</p>
Tuesday January 29, 2008	2.25	<p><b>Continue-Reading and Documenting</b> course materials at eClasses.org at <a href="http://www.eclasses.org/">http://www.eclasses.org/</a> Documents <b>created</b> are located at:            C:\Users\boutros\Documents\MyPrograms\eClasses.Org\Course_IntroductionToDatabaseDesign_MS300.22\</p>
Friday February 8, 2008	1.0	<p><b>Read Week1 Online Lectures</b> of Introduction to Database Design class - Fundamental Concepts- at <a href="http://www.eclasses.org/">http://www.eclasses.org/</a></p>
Saturday February 9, 2008	1.5	<p><b>Book:</b> databases Demystified: by Andy Oppel, ISBN: 0072253649            Chapter 1: [pages 1 - 9]</p>
Sunday February 10, 2008	4.5	<p><b>Book:</b> databases Demystified: by Andy Oppel, ISBN: 0072253649            Chapter 1: [pages 10 - 24]  <b>Read</b> Intro. to Database Design class -Week1- Online reference at:  <a href="http://en.wikipedia.org/wiki/Relational_database">http://en.wikipedia.org/wiki/Relational_database</a>  <a href="http://en.wikipedia.org/wiki/Database_normalization">http://en.wikipedia.org/wiki/Database_normalization</a>  <a href="http://en.wikipedia.org/wiki/DBMS">http://en.wikipedia.org/wiki/DBMS</a>  <a href="http://en.wikipedia.org/wiki/Hierarchical_model">http://en.wikipedia.org/wiki/Hierarchical_model</a>  <a href="http://en.wikipedia.org/wiki/Network_model">http://en.wikipedia.org/wiki/Network_model</a>  <a href="http://en.wikipedia.org/wiki/Relational_model">http://en.wikipedia.org/wiki/Relational_model</a>  <a href="http://en.wikipedia.org/wiki/Object_model">http://en.wikipedia.org/wiki/Object_model</a>  <a href="http://en.wikipedia.org/wiki/Database">http://en.wikipedia.org/wiki/Database</a>  <b>Working on First</b> week homework Intro. To Database Design class.</p>
Monday February 11, 2008	2.0	<p><b>Finished First</b> week homework Intro. To Database Design class.            Posted it online at:  <a href="http://mysite.verizon.net/boutros/IntroDB/IntroDatabase_HW1.rtf">http://mysite.verizon.net/boutros/IntroDB/IntroDatabase_HW1.rtf</a></p>
Friday February 15, 2008	3.5	<p><b>Read Week2 Online Lectures</b> of Intro. To Database Design class - Database Construction- at <a href="http://www.eclasses.org/">http://www.eclasses.org/</a></p>
Saturday February 16, 2008	3.75	<p><b>Read</b> Intro. To Database Design class -Week2- Online reference at:  <a href="http://www.databaseanswers.org/tutorial4_db_schema/index.htm">http://www.databaseanswers.org/tutorial4_db_schema/index.htm</a>  <b>Watched</b> Tutorial video at same Website.</p>
Sunday February 17, 2008	5.0	<p><b>Book:</b> databases Demystified: by Andy Oppel, ISBN: 0072253649            Chapter 2: [pages 25 - 49]</p>

Monday February 18, 2008	7.0	<b>Finished Second</b> week homework Intro. To Database Design class. Posted it online at: <a href="http://mysite.verizon.net/boutros/IntroDB/IntroDatabase_HW2.rtf">http://mysite.verizon.net/boutros/IntroDB/IntroDatabase_HW2.rtf</a> <a href="http://mysite.verizon.net/boutros/IntroDB/Report_HW2.doc">http://mysite.verizon.net/boutros/IntroDB/Report_HW2.doc</a>
Tuesday February 19, 2008	0.75	<b>Reading</b> Week3 <b>Online Lectures</b> of Intro. To Database Design class - Manipulating Data- at <a href="http://www.eclasses.org/">http://www.eclasses.org/</a>
Wednesday February 20, 2008	3.25	<b>Read</b> Week3 <b>Online Lectures</b> of Intro. To Database Design class - Manipulating Data- at <a href="http://www.eclasses.org/">http://www.eclasses.org/</a> <b>Book:</b> databases Demystified: by Andy Oppel, ISBN: 0072253649 Chapter 5: [pages 129 - 144]
Thursday February 21, 2008	4.75	<b>Finished Third</b> week discussion for Intro. To Database Design class. Posted it online in the discussions section. <b>Book:</b> databases Demystified: by Andy Oppel, ISBN: 0072253649 Chapter 3: [pages 51 - 57]
Friday February 22, 2008	3.5	<b>Book:</b> databases Demystified: by Andy Oppel, ISBN: 0072253649 Chapter 3: [pages 58 - 80]
Saturday February 23, 2008	4.5	<b>Book:</b> databases Demystified: by Andy Oppel, ISBN: 0072253649 Chapter 3: [pages 81 - 88] <b>Book:</b> databases Demystified: by Andy Oppel, ISBN: 0072253649 Chapter 4: [pages 89 - 103]
Sunday February 24, 2008	5.25	<b>Book:</b> databases Demystified: by Andy Oppel, ISBN: 0072253649 Chapter 4: [pages 104 - 117]
Monday February 25, 2008	5.0	<b>Book:</b> databases Demystified: by Andy Oppel, ISBN: 0072253649 Chapter 4: [pages 118 - 127] <b>Finished Third</b> week homework, Intro. To Database Design class. Posted it online at: <a href="http://mysite.verizon.net/boutros/IntroDB/IntroDatabase_HW3.doc">http://mysite.verizon.net/boutros/IntroDB/IntroDatabase_HW3.doc</a>
Tuesday February 26, 2008	0.5	<b>Read</b> 'MS Office Access 2007' help document: 'Create, edit or delete a relationship'.
Wednesday February 27, 2008	1.75	<b>Read</b> Week4 <b>Online Lectures</b> of Intro. To Database Design class - Normalization- at <a href="http://www.eclasses.org/">http://www.eclasses.org/</a>
Thursday February 28, 2008	5.0	<b>Read</b> 'MS Office Access 2007' help documents: 'Create a form'; 'Run a query'; 'Create a macro' and 'Create a simple report'.
Friday February 29, 2008	2.5	<b>Book:</b> databases Demystified: by Andy Oppel, ISBN: 0072253649 Chapter 6: [pages 145 - 160] <b>Read</b> Intro. To Database Design class -Week3- Online reference at: <a href="http://www.trigonblue.com/AccessLookup.htm">http://www.trigonblue.com/AccessLookup.htm</a>
Saturday March 1, 2008	4.0	<b>Book:</b> databases Demystified: by Andy Oppel, ISBN: 0072253649 Chapter 6: [pages 161 - 170]

Sunday March 2, 2008	6.25	<p><b>Book:</b> databases Demystified: by Andy Oppel, ISBN: 0072253649 Chapter 6: [pages 171 - 177] <b>Read 'MS Office Access 2007' help document: 'Database design basics.'</b> <b>Finished Fourth</b> week homework, Intro. To Database Design class. Posted it online at: <a href="http://mysite.verizon.net/boutros/IntroDB/IntroDatabase_HW4.doc">http://mysite.verizon.net/boutros/IntroDB/IntroDatabase_HW4.doc</a></p>
Monday March 3, 2008	0.75	<p><b>Reading Week5 Online Lectures</b> of Intro. To Database Design class - Relationships- at <a href="http://www.eclasses.org/">http://www.eclasses.org/</a></p>
Tuesday March 4, 2008	1.25	<p><b>Read Week5 Online Lectures</b> of Intro. To Database Design class Relationships- at <a href="http://www.eclasses.org/">http://www.eclasses.org/</a></p>
Wednesday March 5, 2008	6.75	<p><b>Book:</b> databases Demystified: by Andy Oppel, ISBN: 0072253649 Chapter 7: [pages 179 - 183] <b>Working on Fifth</b> week homework, Intro. To Database Design class.</p>
Thursday March 6, 2008	4.25	<p><b>Finished Fifth</b> week homework, Intro. To Database Design class. Posted it online at: <a href="http://mysite.verizon.net/boutros/IntroDB/IntroDatabase_HW5_AccessRelationships.gif">http://mysite.verizon.net/boutros/IntroDB/IntroDatabase_HW5_AccessRelationships.gif</a> <a href="http://mysite.verizon.net/boutros/IntroDB/IntroDatabase_HW5_IntroDatabase_MainDiagram.GIF">http://mysite.verizon.net/boutros/IntroDB/IntroDatabase_HW5_IntroDatabase_MainDiagram.GIF</a> <a href="http://mysite.verizon.net/boutros/IntroDB/Pharmacies_and_Prescriptions.zip">http://mysite.verizon.net/boutros/IntroDB/Pharmacies_and_Prescriptions.zip</a></p>
Friday March 7, 2008	3.0	<p><b>Book:</b> databases Demystified: by Andy Oppel, ISBN: 0072253649 Chapter 7: [pages 184 - 201]</p>
Saturday March 8, 2008	2.0	<p><b>Book:</b> databases Demystified: by Andy Oppel, ISBN: 0072253649 Chapter 8: [pages 203 - 214]</p>
Sunday March 9, 2008	2.75	<p><b>Book:</b> databases Demystified: by Andy Oppel, ISBN: 0072253649 Chapter 8: [pages 215 - 226]</p>
Monday March 10, 2008	3.25	<p><b>Book:</b> databases Demystified: by Andy Oppel, ISBN: 0072253649 Chapter 9: [pages 227 - 246] <b>Read Week6 Online Lectures</b> of Intro. To Database Design class - Advanced Topics - at <a href="http://www.eclasses.org/">http://www.eclasses.org/</a></p>
Tuesday March 11, 2008	1.75	<p><b>Book:</b> databases Demystified: by Andy Oppel, ISBN: 0072253649 Chapter 10: [pages 247 - 261]</p>
Wednesday March 12, 2008	1.75	<p><b>Book:</b> databases Demystified: by Andy Oppel, ISBN: 0072253649 Chapter 10: [pages 262 - 271] <b>Working on Sixth</b> week homework, Intro. to Database Design class.</p>
Thursday March 13, 2008	4.0	<p><b>Finished Sixth</b> week homework, Intro. to Database Design class. Posted it online at: <a href="http://mysite.verizon.net/boutros/IntroDB/IntroDatabase_HW6_MyChangesForGale.doc">http://mysite.verizon.net/boutros/IntroDB/IntroDatabase_HW6_MyChangesForGale.doc</a></p>

*The End.*

Total = 109.75 hrs

\*\*\*\*\**End of Introduction to Database Design*\*\*\*\*\*

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