



Course Syllabus

Fall, 2014

COURSE DESCRIPTION

This course is designed specifically to both introduce specific BIM (Building Information Modeling) techniques and software as well as further develop VDC (Virtual Design and Construction) software as they align with current managerial methods and project delivery platforms.

REVIT, SYNCHRO, and INNOVAYA SOFTWARE will continue to be presented and skill sets developed. The course will center around specific projects and the development of *REVIT* models, *SYNCHRO*-Linked models and estimates prepared for given projects using a new DATA BASE developed by *INNOVAYA* for use with their software.

The course is also designed and developed to promote discussion with respect to the roles played by owners, designers, builders, and suppliers. Specific attention is paid to BIM's role in various project platform delivery systems including DESIGN-BID-BUILD, DESIGN BUILD, CM AT RISK, and IPD. What are the relationships that exist in each one of these systems between Owners, Architects, Engineers, Contractors, and Subs?

What level of technology is best suited for use by each of these entities? What is involved in playing on a BIM TEAM? **

**Taken from Yates Construction Presentation. Mr. Benjamin Crosby. BIM/VDC Director.

Three (3) Semester Hours

PROFESSOR

Dr. Gregory P. Wilson, P.E.
Adjunct Professor

CONTACT INFORMATION

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Email: gwilson@hwh1887.com

CLASS MEETINGS INFORMATION

M- 4:00 PM – 6:45 PM

PRELIMINARY WEEKLY SCHEDULE OF TOPICS**

****Contingent upon the availability of the course software on the University Network. IT people have been working with us all summer to make this happen Given that every piece of software has new revisions and databases to install.**

Week (Major Topic)	Details
1. Introduction and “What is BIM?”	Initial introduction of materials, topics of discussion, software, reading matl. Course syllabus, grading, attendance. Expectations.
2. Initial REVIT ASSIGNMENT From Text	Simple building structure model. Revit 2014
2. Continued lecture material	Owner/Designer/Contractor/Sub relationships within BIM.
Week (Major Topic)	Details
3. Owner’s Dilemma, continued work on REVIT 2014 Assignment	CMAA 2013 Reading Assignment Discussion and (First) Writing Assignment
4. Project Delivery Methods	Traditional Design/Bid/Build

	(Competitive Bid); CM-at –Risk, Design Build, IPD.
5., 6. Introduction of SYNCHRO Scheduling, linking activities, CPM, durations, logic (to be continued throughout semester	Assignment of Scheduling Tutorial. Completion of Initial REVIT 2014 Assignment.
7. SYNCHRO Demonstrations	Continued work on Scheduling Tutorial
8. Where is BIM Going? What roles do owners, designers, builders and suppliers play in the BIM Process?	Purpose, cost, prefabrication, change orders, punch list, claims, design/construction coordination. (Second Writing Assignment)
9. SYNCHRO Demonstrations Linking Schedule to REVIT Model	Completion of Scheduling Tutorial
10. CONTRACTS: CM AT RISK; DESIGN BUILD; IPD. Parametric, Trust, Accuracy, Efficiency, 3D Coordination, Scheduling, 5D QTO (Quantity Take-off) 6D (As Built with O/M details)	BIM ADDENDUM, 2D, 3D, 4D, 5D, XD VERY VERY CRITICAL DISCUSSION (Third Writing Assignment)
11. Labor Productivity Discussion	Adam Smith vs. John Nash Economics (4th. Writing Assignment) Significance of this comparison
12.BIM TECHNOLOGY: Matchiing the Function to the Software	Classes of Bim Software including preliminary design, authori8ng, analysis, shop drawings, CM, Model Review and Collaboration and Communication *(BIM Education Program, 2nd. Session)
13. INNOVAYA VISUAL ESTIMATING	Demo and introduction to database process. Initial Assignment relating to REVIT Model.
14. BIM CONTRACT AND RISK ALLOCATION CONCEPTS	Project Delivery types, model types, liability exposure, levels of collaboration, granularity, general risk exposure to all parties.
Week (Major Topic)	Details
14. BIM CONTRACT AND RISK ALLOCATION CONCEPTS	5th. Writing Assignment
15. BIM EXECUTION PLAN	6TH. Writing Assignment. Model content, level of detail, schedules,

	quality control standards, RFI and change order protocols. LIABILITY FOR MODEL ERRORS.
FINAL EXAMINATION WEEK	FINAL NOTEBOOK DUE CONTAINING ALL ASSIGNMENTS, BOTH WRITING, AND ALL BIM RELATED SOFTWARE WORK.

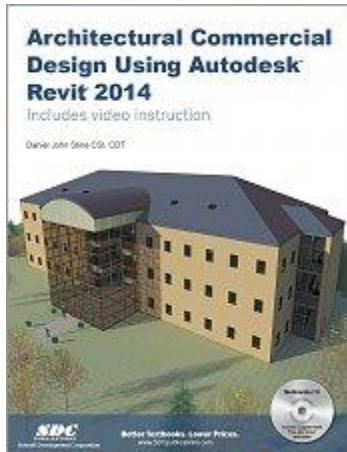
ASSESSMENT OF STUDENT OUTCOMES

Upon satisfactory completion of this course, the student:

1. Can demonstrate by project and examination, the ability to schedule various portions of a commercial construction project using SYNCHRO software.
2. Can demonstrate by project and examination, the ability to link project activities to a REVIT or similar 3D model using SYNCHRO software.
3. Can demonstrate by project and examination, the ability to complete a cost estimate using a REVIT-generated 3D model and INNOVAYA software and the included data base with the necessary assemblies.
4. Can demonstrate by project and examination, the ability to develop a BIM Implementation Plan with respect to a commercial building project.
5. Can demonstrate by project and examination the ability to discuss and develop the various roles of owners, designers, builders, and suppliers in the BIM process.
6. Can demonstrate by project and examination, the ability to discuss and develop in detail, the various project delivery methods and their relationship to the BIM process including CM-at-RISK, Design BUILD, and IPD.
7. Can demonstrate by project and examination, the ability to discuss and develop the relationships between 2D, 3D, 4D, 5D, and xD BIM models.
8. Can demonstrate by project, the ability to generate a small-scale REVIT model using REVIT Architecture 2014.

COURSE TEXT/REFERENCE

By **Daniel John Stine CSI, CDT**
Published April 30, 2013
476 Pages
ISBN: 978-1-58503-802-2



SOFTWARE TUTORIALS WILL BE PROVIDED.

ATTENDANCE POLICY

Every student is expected to attend every class.

LATE WORK

NO LATE WORK IS ACCEPTED.

COURSE GRADING

- 6 Writing Assignments @ 100 Pts. Each600
- REVIT MODEL.....500
- SYNCHRO TUTORIAL.....500
- FINAL NOTEBOOK.....500

TOTAL POINTS	2100 PTS
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8 Point Percentage Grading Scale will be used throughout the semester.

92 – 100	=	A
84 - 91	=	B
76 - 83	=	C
68 - 75	=	D
< 68	=	F

CLASSROOM POLICIES

USE OF CELL PHONES WILL NOT BE TOLERATED.

ACADEMIC INTEGRITY

Academic dishonesty of any kind will not be tolerated. You run the risk of receiving a failing grade in the course in addition to expulsion from the University. Please refer to **Code of Student Conduct** in the Student Handbook for all details.

NOTE!

STUDENT BEHAVIOR

Members of the student body at Texas A&M University-Commerce are expected to obey all federal, state, and local laws in addition to the regulations of the University.

ADA

Each division within the University is aware of the needs of the disabled student and is ready and willing to work with each student to solve problems as they arise. The Supervisor of Services is located in the Student Services Building, 3rd. floor, (903)- 886-5835. The Compliance Office for the Disabled is located in the Business Administration Building 2nd. Floor, room 296.