

## Using Microsoft Dynamics CRM and GP for Information Systems Audit: A Curriculum Package for Information Systems Audit or Security Courses

Huei Lee  
Department of Computer Information Systems  
College of Business  
Eastern Michigan University  
Ypsilanti, MI 48197  
[Huei.Lee@emich.edu](mailto:Huei.Lee@emich.edu)

Kuo Lane Chen  
School of Computing  
University of Southern Mississippi  
Hattiesburg, MS 39406  
[Kuo.Chen@usm.edu](mailto:Kuo.Chen@usm.edu)

Clarence Lee  
Department of Marketing  
Cornell University  
Ithaca, NY  
[Clarence.Lee@cornell.edu](mailto:Clarence.Lee@cornell.edu)

**Abstract:** Information System Auditing gradually becomes an important area in computer information systems and accounting information systems due to government regulations and growing demand from companies. *IS 2010 Curriculum Guidelines (IS2010)*, sponsored by ACM and Association of Information Systems, lists IT Audit and Control as an elective course for the IS/IT/MIS majors. The purpose of this curriculum package is to demo how to use the Microsoft Dynamics CRM and GP as tools to illustrate information auditing, audit tracking, and user management for enterprise systems. The content is also suitable for security control and identity management.

### INTRODUCTION

Sarbanes-Oxley Act of 2002 indirectly impacts the awareness the importance of information audit for financial reporting for public companies. Many accounting firms such as Deloitte have recruited IS graduates for their auditing consulting services. Payment Card Industry Data Security Standard (PCI-DSS) directly shows the importance of information security control for a company that uses credit cards as customers' payment tool. In 2006, TJX Companies, Inc. had to pay a fine of about \$40.9 million dollars to a bank for the card-card data breaches because it did not fully comply with PCI-DSS (Panko, 2013).

Because of government regulation and growing demand from companies, *IS 2010 Curriculum Guidelines* lists IT Audit and Control as an elective course for IS/IT/MIS majors (Topi et al., 2010). The content of these courses are not only suitable for a student majoring in the Information Technology (IT), Management Information Systems (MIS), or Computer Science (CS) but also for Accounting Information Systems (AIS).

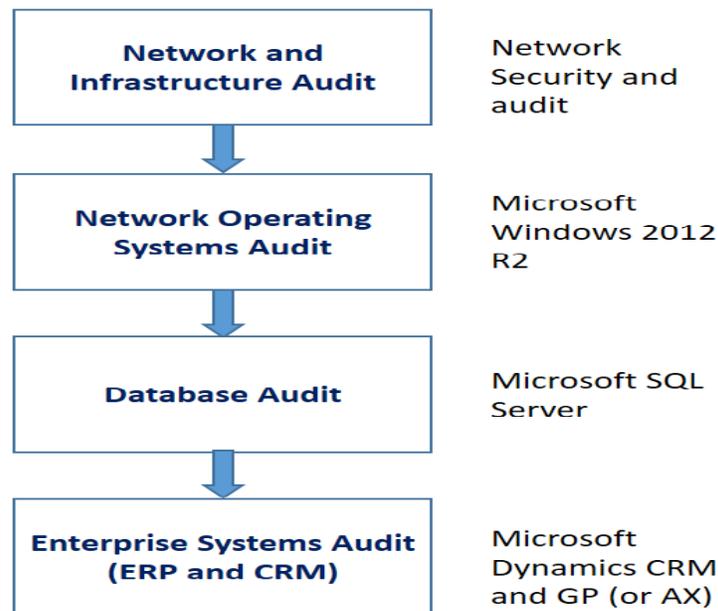
To enrich the content of the IT Auditing and Control or Security courses, the purpose of this curriculum package is to describe how to use the Microsoft Dynamics CRM and GP as tools to understand the practical sides of the IT Audit and Control. Section 2 discusses the role of Microsoft Dynamics in the course of information system audit. The section 3 shows the syllabus for information systems audit. The section 4 shows two sample assignments which show how to handle audit, audit tracking, and audit log using Microsoft CRM and GP. Finally, a brief conclusion is discussed at the end.

## THE ROLE OF MICROSOFT DYNAMICS IN THE COURSE OF INFORMATION SYSTEMS AUDIT

The course of information systems audit is to teach the follow the following contents:

- 1) Network and Infrastructure audit
- 2) Server and operating systems audit
- 3) Database audit
- 4) Enterprise application software audit

The above topics are similar to the exam for Certified Information Systems Auditor (CISA) from ISACA. Figure 1 shows the flow charts of topics from network to enterprise systems. In the next section, the syllabus used for IS 437/637 Information Systems Audit at an AACSB-accredited university at United States.



**Figure 1: The Topics for Information Audit and Control**

## THE COURSE SYLLABUS FOR INFORMATION SYSTEMS AUDIT

Table 1 shows portions of the syllabus used for IS 437/IS 637 Information Systems Audit. It also shows how we apply the 50 Microsoft Dynamics student activity hours to each topic.

**Table 1: IS 437/637 Course Syllabus**

<b>IS 437 Introduction to Business Information Technology Audit</b>
<b>COURSE DESCRIPTION (Catalog):</b>
This course introduces the fundamental concepts of the information technology audit and control function. The main focus of this course is on understanding information controls, the types of controls and their impact on the organization, and how to manage and audit them. The concepts and techniques used in information technology

audits will be presented. Students will learn the process of creating a control structure with goals and objectives, audit an information technology infrastructure against it, and establish a systematic remediation procedure for any inadequacies. The challenge of dealing with best practices, standards, and regulatory requirements governing information and controls is addressed.

**COURSE OBJECTIVE:**

At the end of this course, students should be able to:

- Understand the role and objectives of the information technology audit.
- Develop an appropriate information technology audit process.
- Identify risks to the confidentiality, integrity, and availability of information and processes.
- Describe the risks inherent in various types of information systems ranging from manual basic accounting to advanced operational information and knowledge for decision making.
- Understand how to design and implement assurance procedures and control measures to effectively manage risks.
- Understand best practices, standards, and regulatory requirements governing information and controls. Gain the ability to measure the degree of compliance with them.
- Understand the role of auditing in systems development, including the review of the development process and participation in systems under development.
- Understand data forensics and how to secure and preserve evidence.
- Learn to develop disaster recovery and business continuity plans.
- Validate that IT management has developed an organizational structure and procedures to ensure a controlled and efficient environment for information processing.
- Evaluate that controls are in place on the client, server, and on network connecting the clients and servers.

**COURSE TEXT AND MATERIALS:**

- Course Package, Handouts and Notes.

**COURSE ACTIVITIES:**

- Class activities include three exams, 10-22 assignments, and a semester project/paper.
- The semester project will entail preparing a project or a paper (6 pages and 6 references). You will submit a report and make a presentation of your project to the rest of the class on the scheduled date. The project can be a team effort. The semester project entails one of the following: 1) attend ISACA competition, 2) provided and designing software/hardware solutions to the auditing problems identified. **If you are interested in Microsoft Dynamics Student Certificate Program, you have to do a project related to Dynamics software (CRM, GP, or AX).** You are also responsible for 10-minute presentation of your project to the rest of the class on the scheduled date. The project can be an individual or team effort from 2 to 3 individuals.

**TOPICAL OUTLINE AND ASSIGNMENTS:**

**(This schedule is tentative, and may be changed at the discretion of the instructor.)**

Week	TOPIC (Total Student Activity Hours for MDSCP: 21)	Reading/ Assignments (Total Student Activity Hours for MDSCP: 29)
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1	<p>Discussion of Course Syllabus</p> <ul style="list-style-type: none"> <li>o The Need for Information Systems Audit and Controls</li> <li>o Information Systems Risks</li> <li>o Protection of Information Assets</li> <li>o Certified Information Systems Auditor (CISA)</li> <li>o Information Systems Audit and Control Association (ISACA)</li> </ul>	<p>Handout 1 Handout 2 Assignment 1B</p>
2	<ul style="list-style-type: none"> <li>o Network Infrastructure Audit</li> <li>o Network Infrastructure Audit: Cisco Router and Firewall Security; Access Control Lists</li> </ul>	<p>Handout 3 Handout 4;  CISCO Router Security (CRS) assignments</p>
3	<ul style="list-style-type: none"> <li>o Network Infrastructure Audit: Cisco Router and Firewall Security; Access Control Lists</li> </ul>	<p>Handout 5; CISCO Firewall Security assignments</p>
4	<p>Network Infrastructure Audit (wireless communications auditing)</p> <p>Server and Systems Software (Operating Systems) Audit</p>	<p>Handouts; Hand-on exercises on real Cisco routers</p>
5	<p>Server and Systems Software (Operating Systems) Audit Client (Operating Systems) Audit <b>Exam I</b></p>	<p>Linux and Windows Server 2012 R2</p>
6	<p>Server and Systems Software (Operating Systems) Audit Client (Operating Systems) Audit Database Audit (MS SQL Server) <b>(Microsoft Dynamics Student Activity Hours: 1 hours)</b></p>	<p>Microsoft SQL Server 2012 R2 <b>(Microsoft Dynamics Student Activity Hours: 1 hours)</b></p>
7	<ul style="list-style-type: none"> <li>o Database Audit (Microsoft SQL Server 2012) <b>(Microsoft Dynamics Student Activity Hours: 2.5 hours)</b></li> <li>o Applications Controls</li> <li>o Enterprise Systems Controls</li> <li>o Internet and E-commerce Controls</li> <li>o E-mail Audit</li> <li>o Installation and Operational Controls</li> <li>o Access Controls</li> </ul>	<p>SQL Server 2012 Microsoft Dynamics AX/GP/CRM Handouts <b>(Microsoft Dynamics Student Activity Hours: 2.5 hours)</b></p>
8	<ul style="list-style-type: none"> <li>o Applications Controls</li> <li>o Enterprise Systems Controls</li> <li>o Internet and E-commerce Controls</li> <li>o Installation and Operational Controls</li> <li>o Access Controls</li> </ul>	<p>Microsoft Dynamics AX/GP/CRM Handouts <b>(Microsoft Dynamics Student Activity Hours: 2.5 hours)</b></p>

	<b>(Microsoft Dynamics Student Activity Hours: 2.5 hours)</b>	
9	<b>Exam II</b> <ul style="list-style-type: none"> <li>o Enterprise Systems Controls</li> <li>o Installation and Operational Controls</li> <li>o Access Controls</li> </ul> <b>(Microsoft Dynamics Student Activity Hours: 2.5 hours)</b>	Microsoft Dynamics AX/GP/CRM Handouts <b>(Microsoft Dynamics Student Activity Hours: 2.5 hours)</b>
10	<ul style="list-style-type: none"> <li>o Applications Controls</li> <li>o Enterprise Systems Controls</li> </ul> Customer Relation Management and Mobile Device Audit <ul style="list-style-type: none"> <li>o Internet and E-commerce Controls</li> <li>o Installation and Operational Controls</li> <li>o Access Controls</li> </ul> <b>(Microsoft Dynamics Student Activity Hours: 2.5 hours)</b>	Microsoft Dynamics GP, CRM Handouts <b>(Microsoft Dynamics Student Activity Hours: 2.5 hours)</b>
11	<ul style="list-style-type: none"> <li>o Customer Relation Management and Mobile Device Audit (Microsoft Dynamics CRM)</li> <li>o System of Authorizations</li> <li>o Documentation &amp; Records</li> <li>o Physical Control over Assets &amp; Records</li> </ul> <b>(Microsoft Dynamics Student Activity Hours: 2.5 hours)</b>	Microsoft Dynamics CRM Handouts <b>(Microsoft Dynamics Student Activity Hours: 2.5 hours)</b>
12	<ul style="list-style-type: none"> <li>o Customer Relation Management and Mobile Device Audit (Microsoft Dynamics CRM)</li> <li>o System of Authorizations</li> <li>o Documentation &amp; Records</li> <li>o Physical Control over Assets &amp; Records</li> </ul> <b>(Microsoft Dynamics Student Activity Hours: 2.5 hours)</b>	Microsoft Dynamics CRM Handouts <b>(Microsoft Dynamics Student Activity Hours: 2.5 hours)</b>
13	<ul style="list-style-type: none"> <li>o Disaster Recovery for Business</li> </ul> Microsoft Dynamics CRM/GP/AX <b>(Microsoft Dynamics Student Activity Hours: 2.5 hours)</b>	Handouts <b>(Microsoft Dynamics Student Activity Hours: 2.5 hours)</b>

14	Microsoft Dynamics CRM/GP/AX <b>(Microsoft Dynamics Student Activity Hours: 2.5 hours)</b>	<b>(Microsoft Dynamics Student Activity Hours: 2.5 hours)</b>
15	Project Presentation <b>(Microsoft Dynamics Student Activity Hours: 3 hours)</b>	Project due <b>(Microsoft Dynamics Student Activity Hours: 10 hours)*</b>
16	Final Exam <b>(Microsoft Dynamics Student Activity Hours: 2 hours)</b>	<b>(Microsoft Dynamics Student Activity Hours: 3 hours)</b>

- **Students in the MDSCP program must work on a project in Microsoft Dynamics GP/AX/CRM**
- **Total Microsoft Dynamics Student Activity Hours for this course: 50**

## CURRICULUM PACKAGES FOR THE COURSES

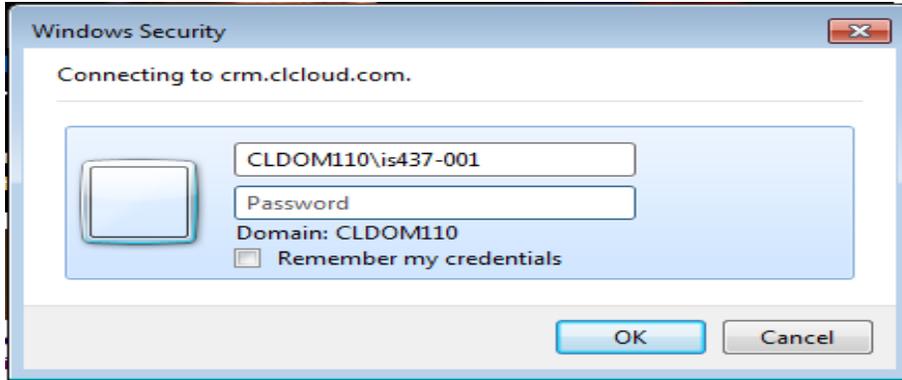
In IS 437/637, students have to finish 15-22 assignments. In this article, two sample assignments for using Microsoft Dynamics CRM and GP for information system audit are:

- 1) A step-by-step assignment using Dynamics CRM. This assignment is revised from Microsoft Dynamics CRM online material.
- 2) A step-by-step assignment using Dynamics GP 2015. This assignment is revised from Brunson, Romney, and Steinbart (2009). Brunson’s book is based on GP 10.0 and we have updated the content to GP 2015 by create new screenshot.

Because of the page limitation of the article, we only show portions of these two assignments.

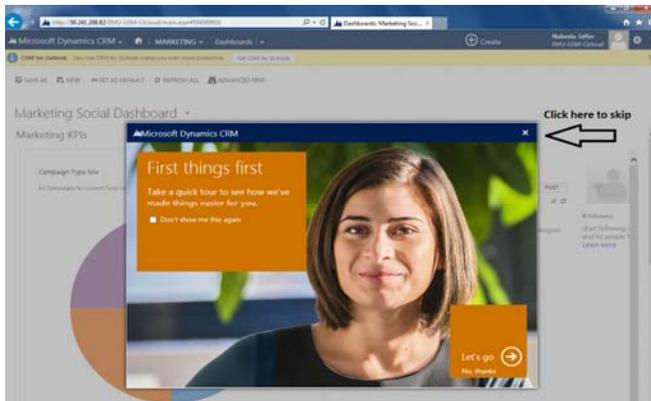
### A. Step-by-step Assignments using CRM 2015

1. In the Internet Explorer, go to <http://crm.clcloud.com> or the instructor may assign you to another website
2. If you do not see the following screen but a denial message, click the refresh button on Internet Explore. If you see the following screen, login into Dynamics CRM using the user id and password provided by the professor:

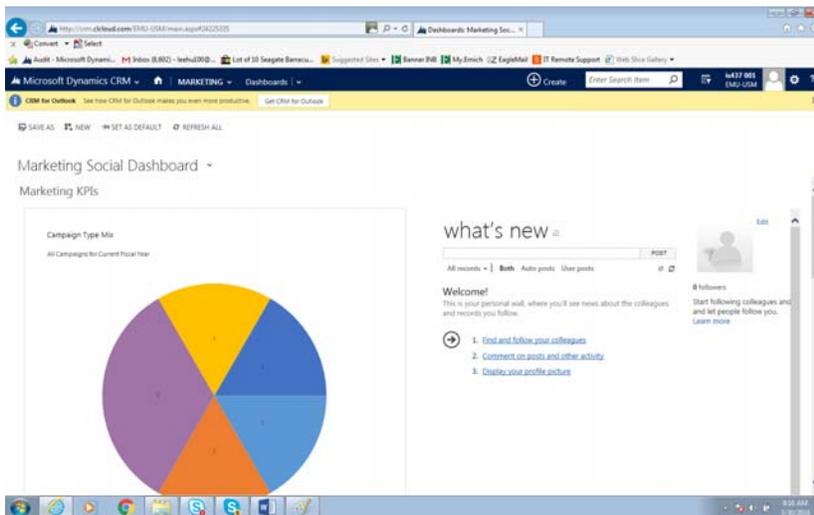


It may take 2-3 minutes if you use it for the first time.

3. You should see the following screen:



Click the  as shown in the above picture to skip the "Frist things first" and you will see the following screen (you may see the graphics)

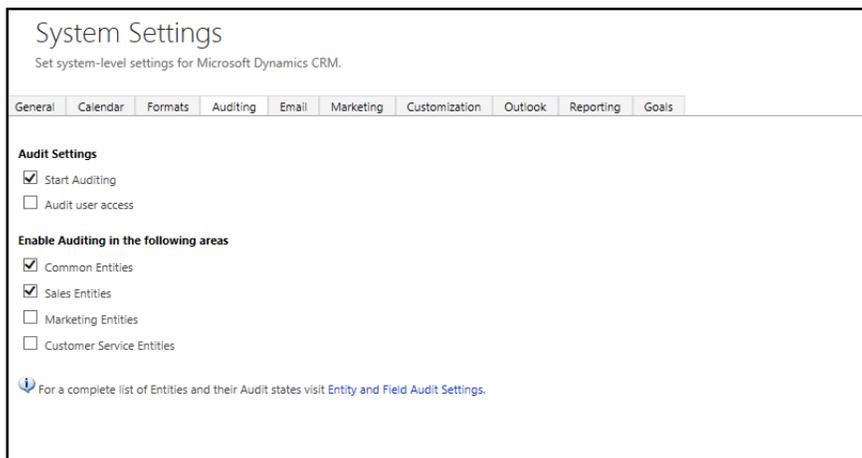


The Microsoft Dynamics CRM auditing feature logs changes that are made to customer records and user access so that you can review the activity later. The auditing feature is designed to meet the auditing, compliance, security, and governance policies of many regulated enterprises.

### Enabling Auditing

1. Make sure that you have the System Administrator or System Customizer security role or equivalent permissions.
2. On the navigation bar, click or tap **Microsoft Dynamics CRM > Settings**. **Settings** appear on the navigation bar.
3. Click or tap **Settings > Auditing > Global Audit Settings**
4. You can start auditing and specify whether or not to audit user access, and you can stop auditing if it is currently enabled.

If you opt to enable auditing and audit user access, you will track when the user starts accessing Microsoft Dynamics CRM and whether or not the user accessed the application by using the web application or CRM for Outlook.

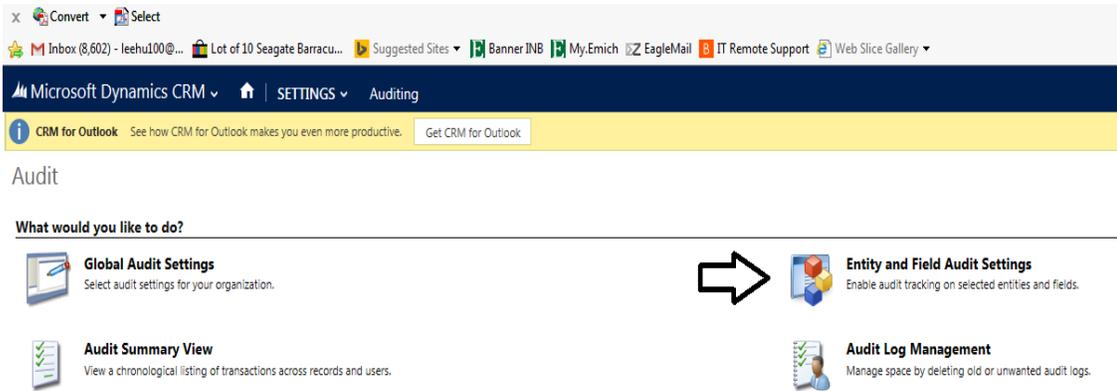


### Enable or Disable Entities and Fields for Auditing

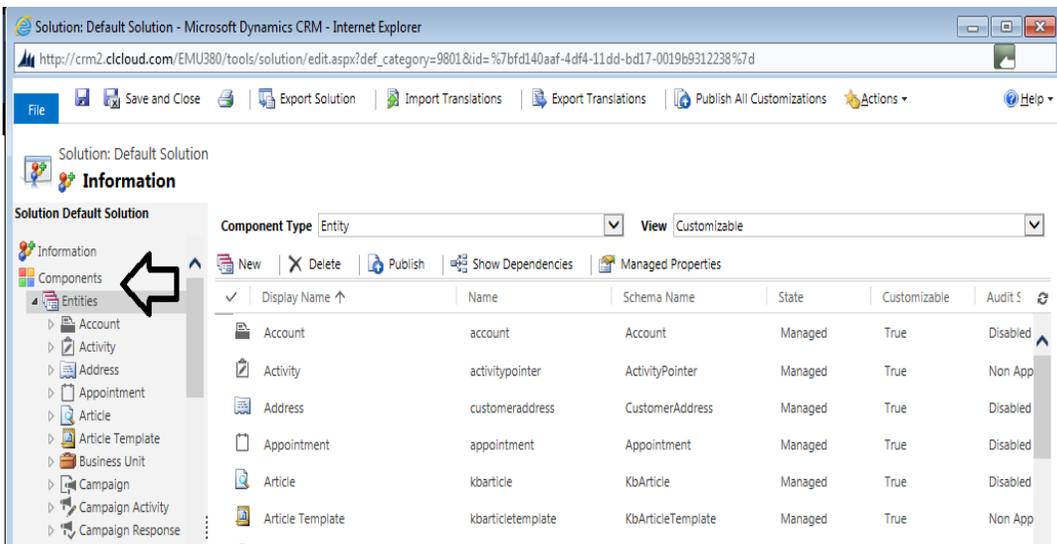
System Administrator or System Customizers can change the default audit settings for entities and for specific fields for an entity.

#### To enable or disable auditing for an entity:

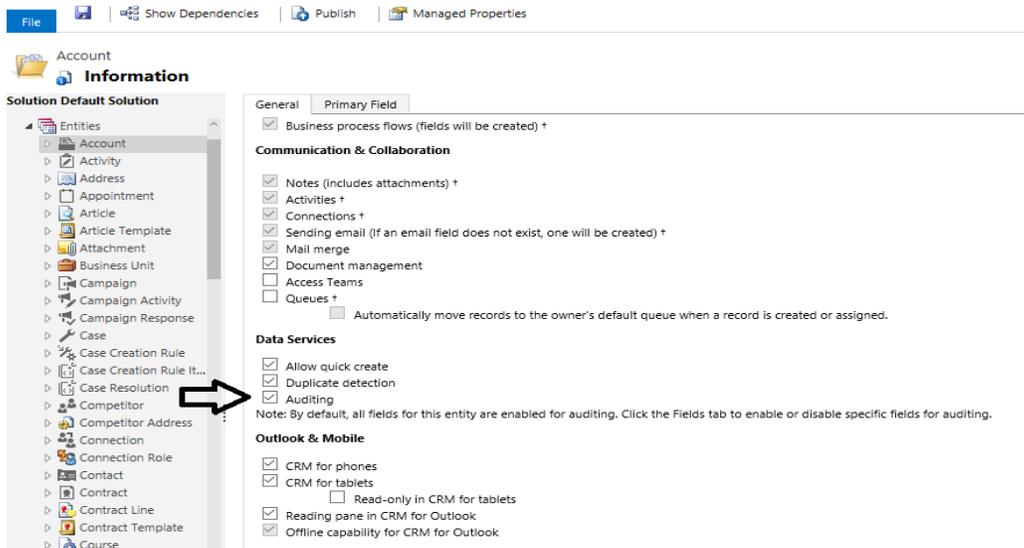
1. In the Navigation Pane, choose **Settings**. Then choose **Auditing**.
2. In the **Audit** area, choose **Entity and Field Audit Settings** or you can click the **Entity and Field Audit Setting**.



3. Under **Components**, expand **Entities**.

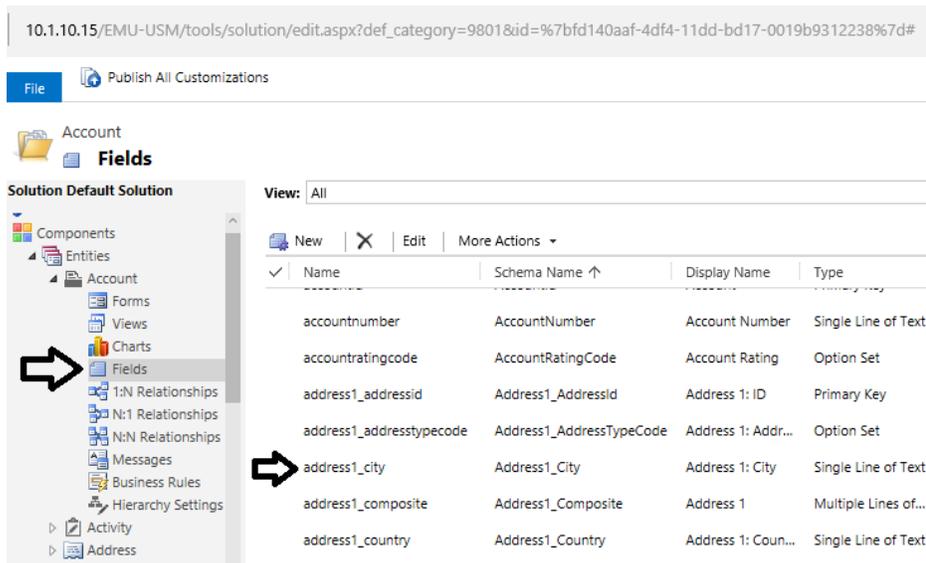


4. Open the entity (click the entity to open it. For example, click “Account”) for which you want to enable or disable auditing.
5. To start auditing, on the **General** tab and in the **Data Services** section, select the **Auditing** check box to enable auditing or clear the **Auditing** check box to disable it.
6. By default, when you start or stop auditing for an entity, you also start or stop auditing for all the fields of this entity.
7. Choose **Save**.

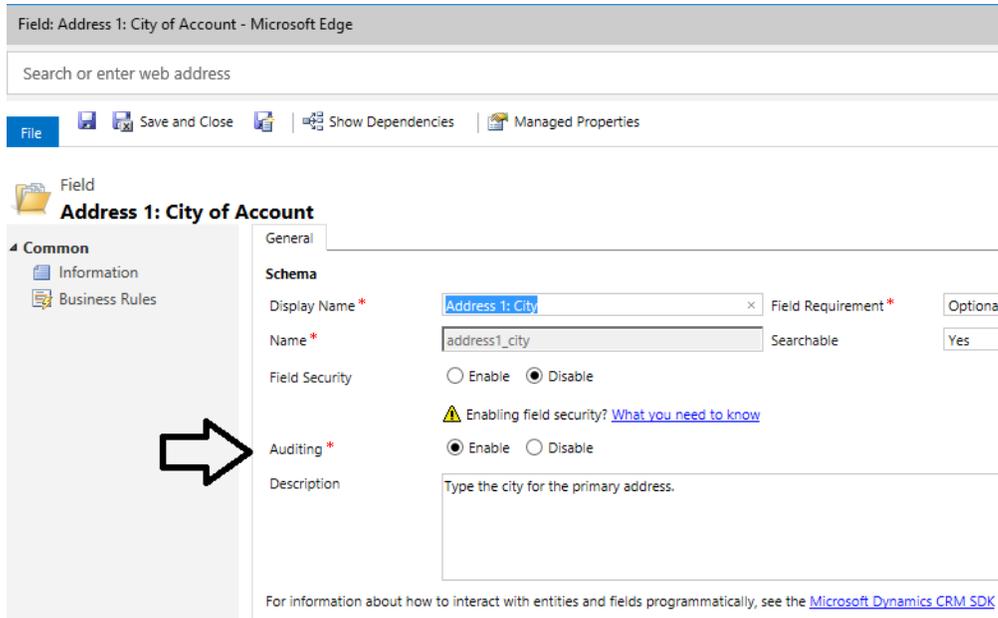


**To enable or disable auditing for specific fields on an entity:**

1. Under the account in the entity (Entity -> Account) for which you want to enable or disable auditing with specific fields, choose **Fields**.



2. To enable or disable a single field (For example, Address 1: City of Account), open the field and in the Auditing section, select **Enable** or **Disable**.



3. To enable or disable more than one field, select more than one field that you want, on the toolbar choose **Edit**. In the **Edit Multiple Fields** dialog box, in the Auditing area choose **Enabled** or **Disabled**.
4. Choose **Save**.

### View audit logging details

System Administrators can view the activity for the entities that are enabled for audit logging.

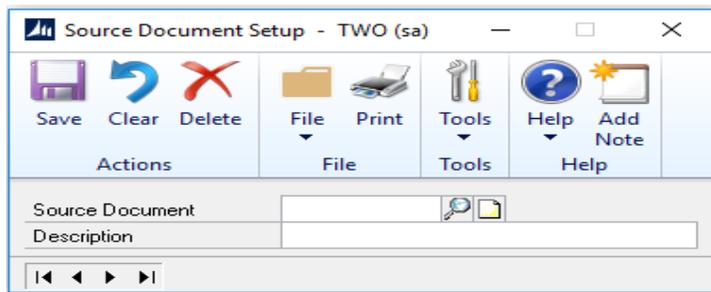
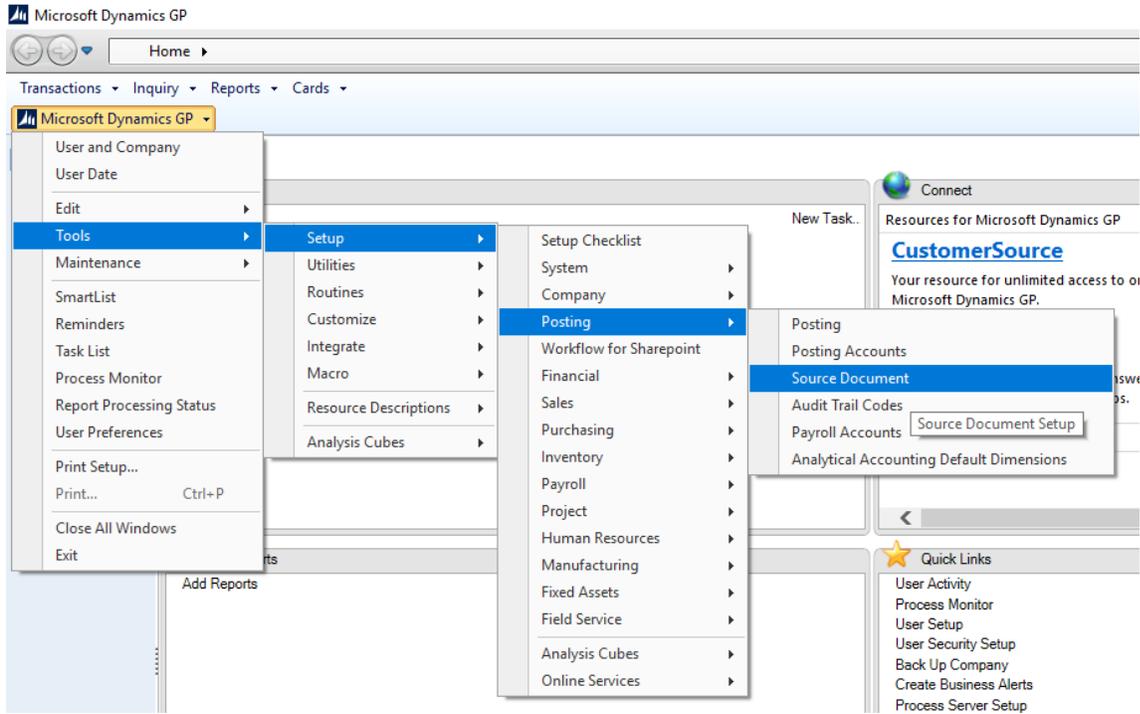
1. Go to **Settings -> Auditing -> Audit Summary View**.
2. In the **Audit Summary View**, you can do the following:
  - Choose **Enable/Disable Filters** to turn on filtering. Then, you can filter on a specific event, such as **Delete** actions.
  - Choose an **Event** to view specific details about the activity, such as the field changes that were made during an update to a record and who performed the update.
  - Choose the **Refresh** button  to view the most recent activity.

## B. Step-by-step Assignments using Microsoft Dynamics GP 2015

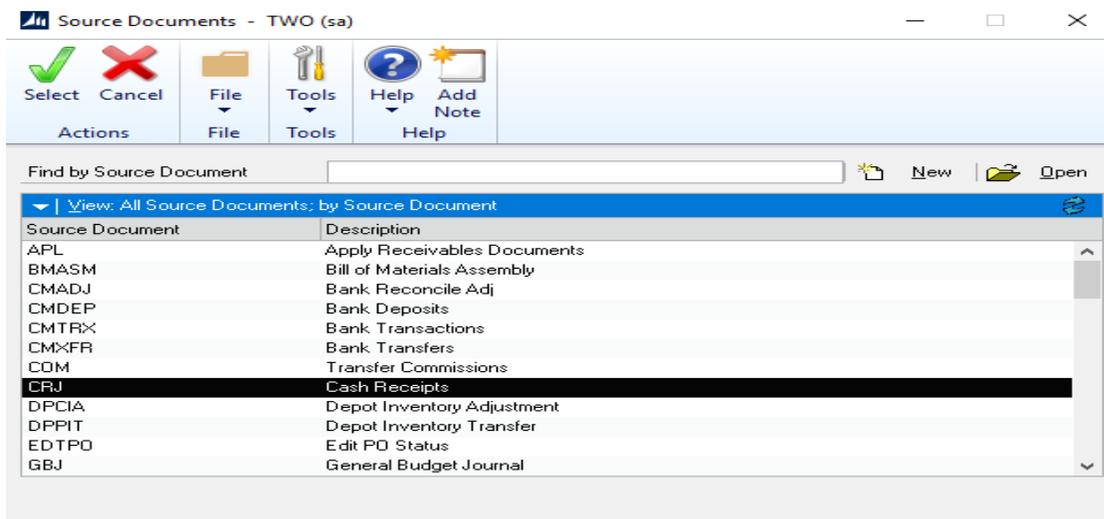
The following assignment are using Dynamics GP to show how to use audit trail and activity tracking. Due to the length of the assignment, we only show portions of the assignments in this article.

### I. Audit Trail

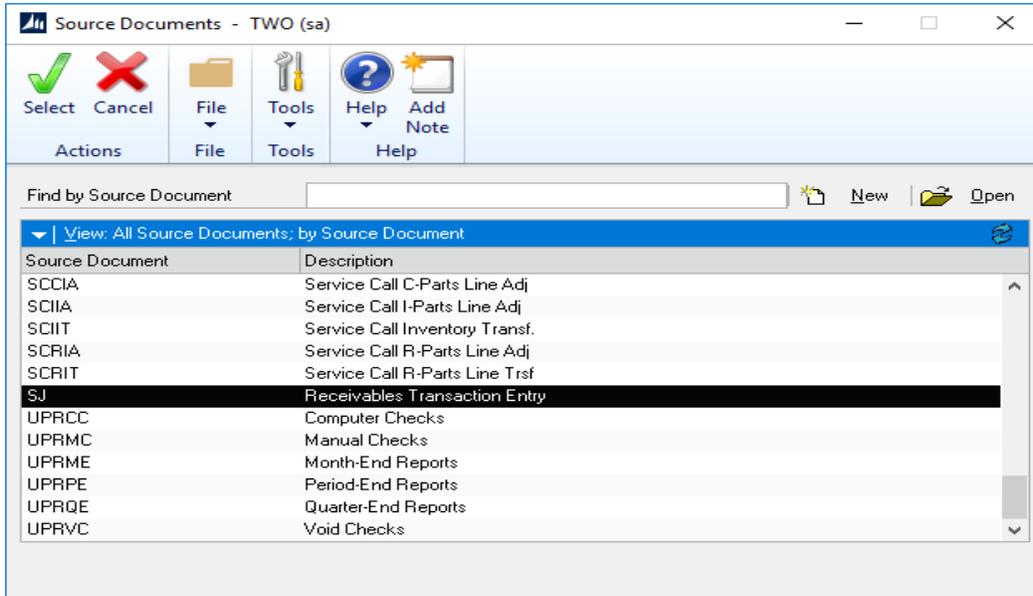
The audit trail documents the source of general ledger postings. To view source documents for general ledger posting, click  **Microsoft Dynamics GP** to select **Tools -> Setup -> Posting -> Source Document**.



Click on  to look up. Then you will get the following screen:



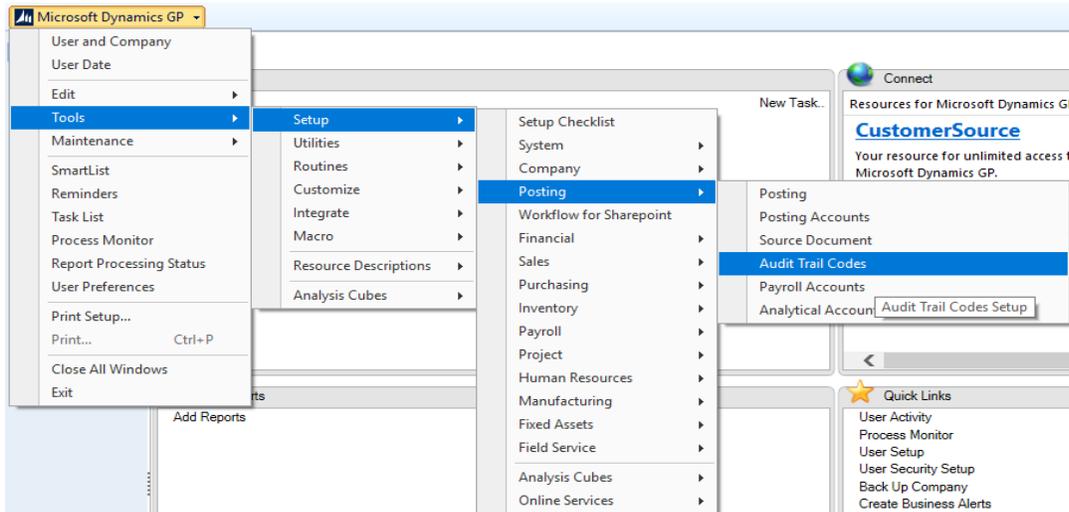
Scroll through source documents in the lookup window to locate code SJ. This is the source code for transactions originating on the Sales Journal maintained by the Sales Series. Close the lookup window and the Source Document window (Brunsdon, Romney, & Steinbart, 2010).



We next illustrate how the SJ source document code cross-references to audit trail codes. Click



and select **Tools>>Setup>>Posting>>Audit Trail Codes**. The Audit Trail Codes Setup window is illustrated below with the Sales Series displayed.

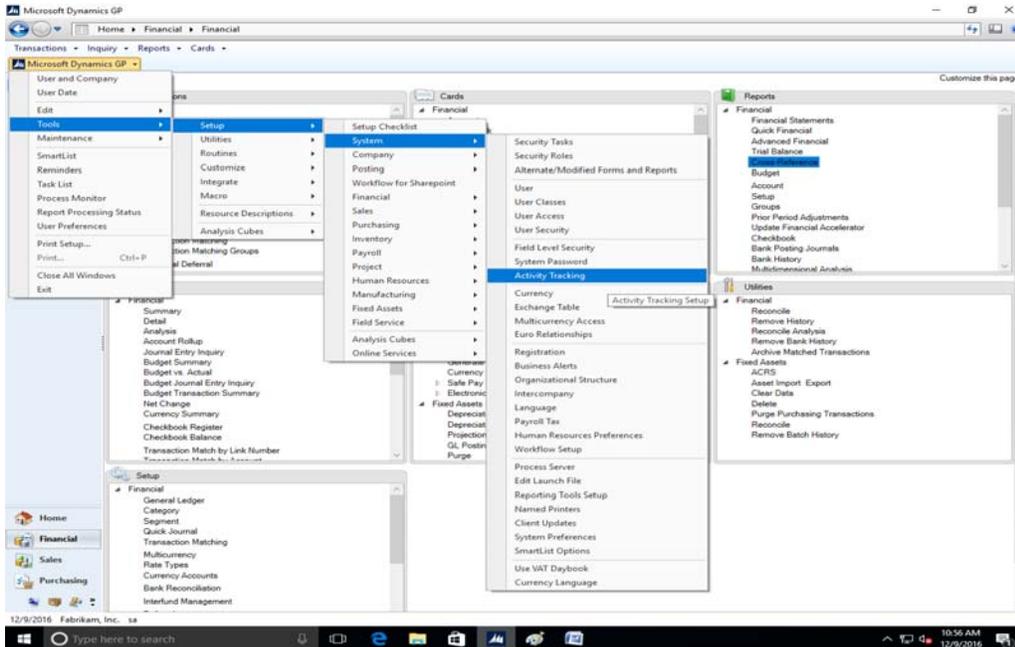


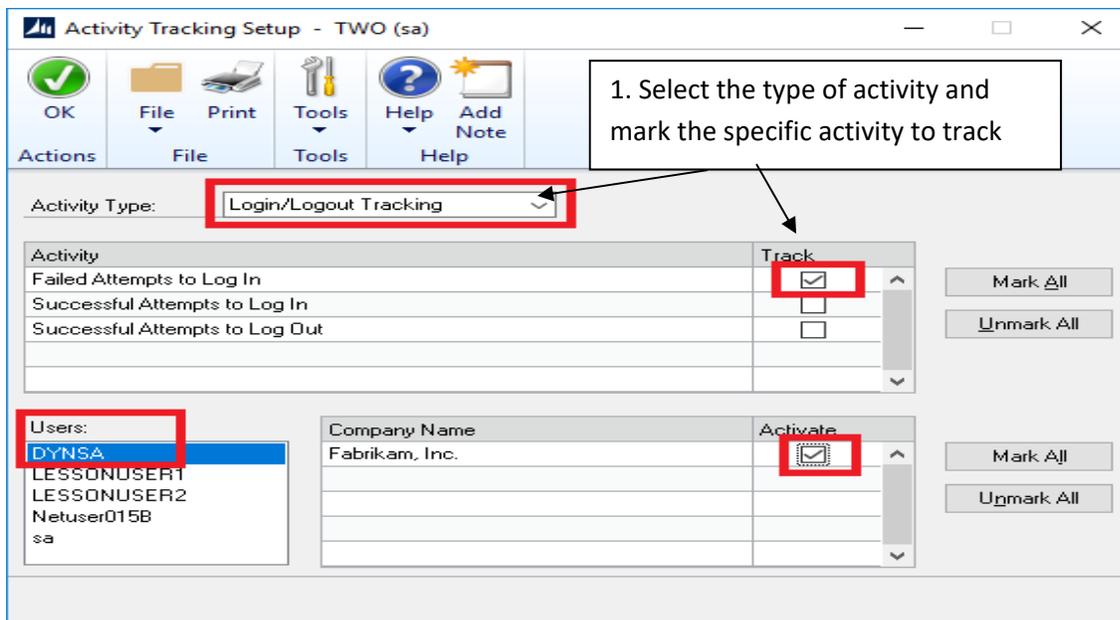
Reprint	Display	Prefix	Next Number	Source Document
<input checked="" type="checkbox"/>	Sales			
<input checked="" type="checkbox"/>	Financial			
<input checked="" type="checkbox"/>	Sales			
<input checked="" type="checkbox"/>	Purchasing	RMAPPY	2	APL
<input checked="" type="checkbox"/>	Inventory	RM CNV	1	MC
<input checked="" type="checkbox"/>	Payroll	RM COM	3	COM
<input checked="" type="checkbox"/>	Project			
<input checked="" type="checkbox"/>	Transfer Commission			
<input checked="" type="checkbox"/>	Receivables Cash Receipts	RM CSH	231	CRJ
<input checked="" type="checkbox"/>	Voided Trx Maintenance	RM MSC	1	RMJ
<input checked="" type="checkbox"/>	Sales Payment Documents	RM PDC	1	RMPDC
<input checked="" type="checkbox"/>	Currency Revaluation	RM RVL	1	MC
<input checked="" type="checkbox"/>	Receivables Sales Entry	RM SLS	5	SJ
<input checked="" type="checkbox"/>	Sales Voided Payment Docs	RM VPD	1	RMVDP
<input checked="" type="checkbox"/>	Sales Deposits	SL SDP	3	CRJ
<input checked="" type="checkbox"/>	Sales Transaction Entry	SL STE	247	SJ
<input checked="" type="checkbox"/>	Sales Voided Transactions	SL SVT	1	SJ

### ACTIVITY TRACKING LOG

Activity tracking logs user activity in the software but must first be activated. Click the

Microsoft Dynamics GP , select **Tools>>Setup>>System>>Activity Tracking**





Close any open windows.

## CONCLUSIONS

The response and evaluation for this course are among the best in IS courses. The enrollment for this course is relatively strong for graduate study in the CIS department even it is an elective course. We have successfully used this course for Microsoft Dynamics Student Certificate Programs. So far there are 100 students have taken this course in the last three years. To do these assignments, CRM on premise in a local area network environment is the best choice because the security role assignments are relative secure and easy. We will apply these assignments to Dynamics 365 in the future.

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