



Apple Education

iTunes U Administrator's Guide

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Apple Inc.

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About This Guide

This guide describes the administration of iTunes U, Apple's service for managing, distributing, and controlling access to your institution's content, and the steps necessary to set up an iTunes U site.

What's Included

This guide is organized as follows:

- [Chapter 1, "About iTunes U,"](#) provides an overview of iTunes U, describes iTunes U system requirements and supported formats, and outlines the initial steps you take to activate, set up, and organize your iTunes U site.
- [Chapter 2, "Integrating Authentication and Authorization Services,"](#) describes how to use your institution's existing authentication and authorization services to ensure secure access to your iTunes U site.
- [Chapter 3, "Customizing Your iTunes U Site,"](#) describes how to use your institution's colors, logos, and graphics to make your iTunes U site appear familiar to staff, instructors, students, and alumni, as well as how to create templates, add and edit iTunes U pages, define track preferences for your iTunes U content, and edit site settings.
- [Chapter 4, "Controlling User Access,"](#) describes how you can define credentials to control a user's actions and permissions to iTunes U pages.
- [Chapter 5, "Adding Content to Your iTunes U Site,"](#) explains how to upload content to your iTunes U site.
- [Chapter 6, "iTunes U Web Services,"](#) provides details and examples of how you can use iTunes U Web Services to view and modify your iTunes U site and obtain a daily report log.
- [Chapter 7, "Searching Your iTunes U Site,"](#) explains how you can search across your entire iTunes U site.
- [Chapter 8, "Understanding iTunes U Reports,"](#) describes the data provided in your weekly iTunes U report.

In addition to the chapters listed above, the glossary at the end defines terms you'll encounter as you read this guide, and an index is provided for your reference.

Note: Because Apple periodically releases new versions and updates to its software, images shown in this guide may be somewhat different from what you see on your screen.

Using Onscreen Help

You can view instructions and other useful information by using onscreen help. From the Help menu, you can choose one of the following options:

- **iTunes Help** displays the iTunes application help, including information on playing and organizing music, videos, and podcasts, using iPod and other music players, and more.
- **iPod Help** displays the iPod application help, including information about transferring music and data files to iPod, automatically updating iPod, using playlists, changing settings, viewing file types supported by iPod, and more.
- **iPhone Help** displays the iPhone application help, including information about use, accessories, troubleshooting, safety, and more.
- **Apple TV Help** displays the Apple TV application help, including information about use, accessories, troubleshooting, safety, and more.
- **Apple Service and Support** displays the Apple - Support webpage, which contains tutorials, discussion boards, how-to information, where to find more information on the iTunes Store and iTunes U, and more.

To see the latest help topics, make sure your computer is connected to the Internet while you're using Help Viewer. Help Viewer automatically retrieves and caches the latest help topics from the Internet. When not connected to the Internet, Help Viewer displays cached help topics.

Getting Additional Information

For more information about iTunes U, see the following documents:

- *iTunes U User's Guide*, which describes how to prepare a course for iTunes U, log into an iTunes U site, customize iTunes U Course pages, create groups, upload files, use an iTunes U site, and more.
- *iTunes U Content Scenarios*, which provides examples for content capture, creation, digitization, and export.
- *Creating Content for iPod + iTunes*, which describes file formats you can use for content and how to use metadata. It also summarizes the different tools you can use to create content.
- *Copyright Overview*, which includes a discussion of copyright issues, guidelines for establishing copyright policies for your students, instructors, and staff, and where to go for additional copyright information
- *Creating Your iTunes U Site*, which describes Apple's design recommendations for creating an iTunes U site. It is important to review and follow these guidelines before applying for inclusion within iTunes U in the iTunes Store.

For access to all iTunes U documentation, see the iTunes U support site at http://www.apple.com/support/itunes_u/.

Chapter 1

About iTunes U

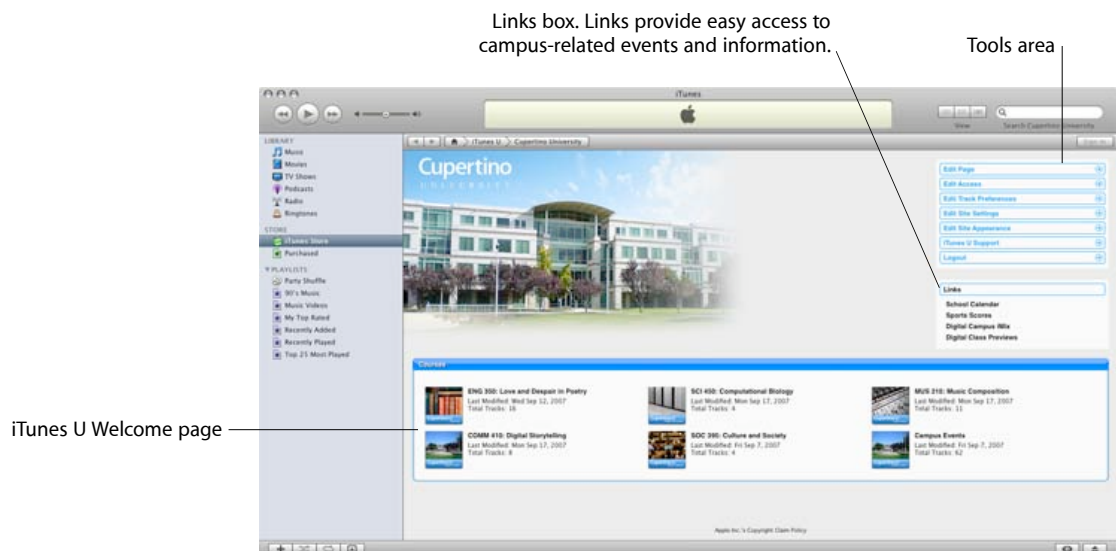
This chapter provides an overview of iTunes U, including the system requirements, formats, and components that make up an iTunes U site and the steps you must take to initially activate and set up your site. Additionally, this chapter provides examples of how you can configure and organize your site and its content to meet your needs.

This chapter covers the following topics:

- [Welcome to iTunes U](#)
- [System Requirements](#)
- [Supported Formats](#)
- [Getting Started](#)

Welcome to iTunes U

Apple shares common goals with education—to advance teaching, learning, and research through innovation, and to engage and empower students. Students, as well as instructors and staff, expect a campus environment that accommodates their digital lifestyle, adapts to their individual learning and teaching needs, and encourages collaboration and teamwork. iTunes U provides a way to meet all these expectations.



Chapter 1: About iTunes U

Based on the same easy-to-use technology as the iTunes Store, iTunes U features Apple simplicity and portability and is designed as a service for institutions to manage a broad range of audio, video, and PDF content, and to make it available quickly and easily to students, instructors, staff, alumni, and, optionally, the public.

iTunes U offers an experience similar to using the iTunes Store. In fact, because iTunes U pages are displayed within the iTunes application itself, just like iTunes Store pages, navigating within iTunes U is much like navigating within the iTunes Store. For information on how to use iTunes or the iTunes Store, in iTunes, choose Help > iTunes Help.

With iTunes U, users can access educational content, including lectures and interviews, 24 hours a day, 7 days a week. Users can browse content and download it to their Mac computers or PCs, regardless of their location. They can then listen to and view that content on their computers or transfer the content to an iPod, iPhone, or Apple TV for listening or viewing on the go.

Instructors and staff can easily post and change content on their own without impacting their IT department. Instructors can also set a page to allow students to upload their own content for review or to share with other students in the class.

System Requirements

iTunes U fits seamlessly into your existing technologies and systems; you use your existing web-based infrastructure to provide access to your iTunes U site.

iTunes U is designed to work with any existing web authentication and authorization system your institution may be using. You should expect to perform some level of development and system integration work for these systems. For more information, see [Chapter 2, "Integrating Authentication and Authorization Services."](#)

iTunes U requires iTunes version 6.0 or later for Mac and Windows. Apple recommends using iTunes version 7 and, in order to guarantee a consistent user experience, always using the latest version of iTunes.

iTunes U works with most modern, standards-compliant browsers. Apple recommends using one of the following browsers:

- Safari 2.0 or later on Mac
- Internet Explorer 6.0 or later on Windows

Note: Internet Explorer on Windows may have performance limitations when uploading files. For more information, see the Microsoft Help and Support Site at <http://support.microsoft.com/default.aspx?scid=kb;en-us;329781>.

Supported Formats

iTunes U supports the distribution of compressed audio and video files. Apple recommends using the following formats for your iTunes U audio and video content:

- Audio files (AAC, MP3) with appropriate file extensions (.m4a, .mp3). For best results during playback, Apple recommends converting MP3 files greater than 32 megabytes (MB) to AAC format. For AAC audio files, Apple recommends the following specifications:
 - Audio Format: AAC-LC (Music)
 - Data Rate: 128 kbits/sec
 - Channels: Stereo

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- Output Sample Rate: 44.100 kHz
- Encoding Quality: Better
- Video files (MPEG-4 with H.264 compression) with appropriate file extensions (.mp4, .m4v, .mov). For best results with iPod, Apple recommends using MPEG-4 with H.264 compression with the following specifications:
 - Video Format: MPEG-4 with H.264
 - Data Rate: 256 kbits/sec
 - Image Size: 320 x 240
 - Frame Rate: 30
 - Key Frame: Every 24 frames

If you are using QuickTime to create and edit video content, it is recommended that you export your videos by choosing Movie to iPod from the Export pop-up menu in QuickTime Pro.

To use specific cover artwork with an audio track, Apple recommends using the AAC file type format (.m4a).

You can also use iTunes U to distribute Portable Document Format (PDF) files.

See [Chapter 5, "Adding Content to Your iTunes U Site,"](#) later in this guide for information on uploading these file types to your iTunes U site. For details on preparing content, see *Creating Content for iPod + iTunes* located at http://www.apple.com/support/itunes_u.

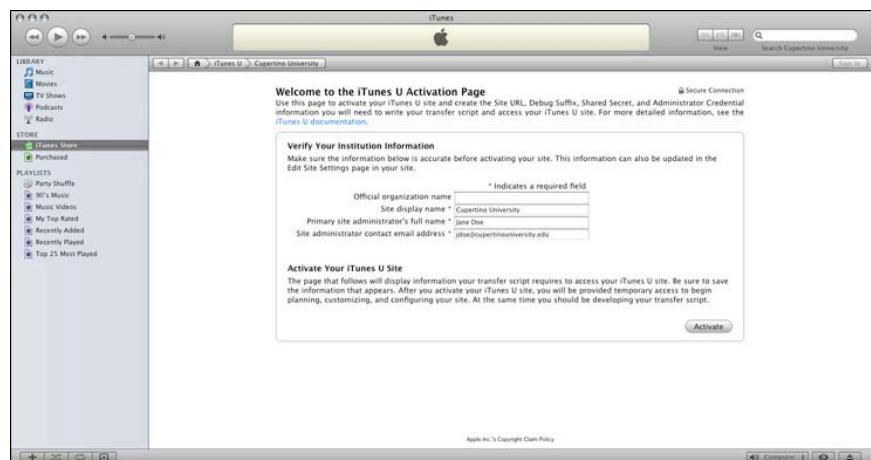
Getting Started

Apple creates your iTunes U site using a default page design and layout. When your site is ready, Apple sends you, as the site administrator, an email with a link to an iTunes U page that contains all the information you need to activate your site. For more information on the default pages, see ["Understanding iTunes U Page Design and Layout"](#) in Chapter 3.

To activate your new iTunes U site and begin planning, customizing, and configuring your site, while at the same time creating a script to integrate your iTunes U site with your institution's identity management system:

- 1 Click the link in the iTunes U welcome email you received.

iTunes U displays a welcome activation page containing your initial organization name, site display name, contact information, and details on how to activate your site:

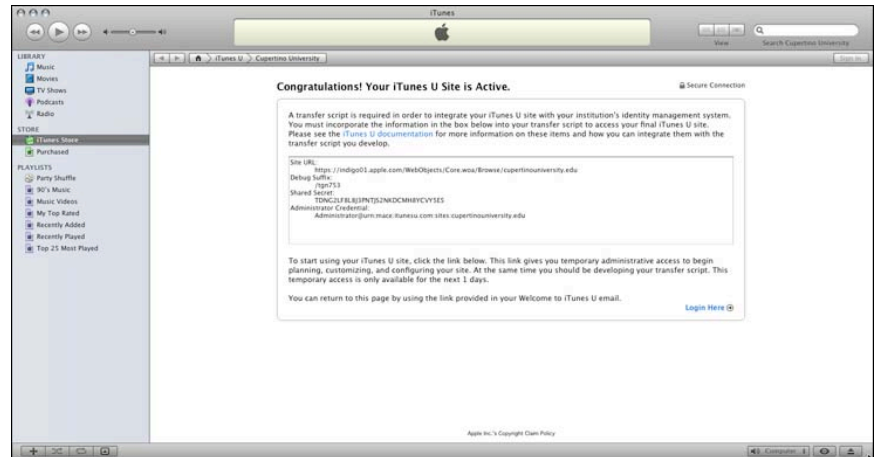


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- 2 Verify that your institution information is accurate. You can edit this information to update your organization name, site display name, contact name, or contact email address.

- 3 Click Activate.

iTunes U activates your site and displays a congratulations activation page containing the information required to integrate your institution's identity management system with your iTunes U site, including your Site URL, Debug Suffix, Shared Secret, and Administrator Credential:



- 4 Copy and paste the integration information to a secure location. You will need this information later to access your iTunes U site.

Note: To ensure only you and Apple have access to the shared secret, be sure to store the shared secret in a secure location. For example, store the shared secret in a secure transfer script or in a secure configuration file.

- 5 Click Login Here to start using your new iTunes U site.

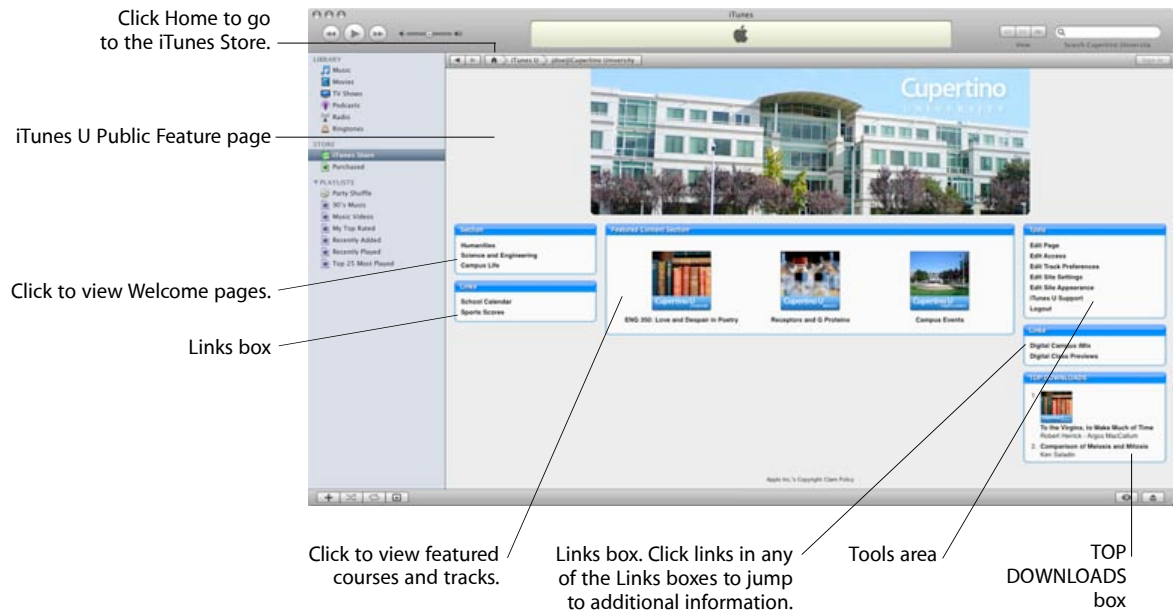
iTunes U logs you in to your site giving you temporary access to your site with administrator editing privileges and displays your site's top-level, or root, page.

With this temporary access, you can immediately familiarize yourself with your site's initial structure, design, and layout. You can also begin planning, customizing, and configuring your site. At the same time you should be creating the script that your institution's identity management system will later use to log in to your site and transfer access into iTunes U.

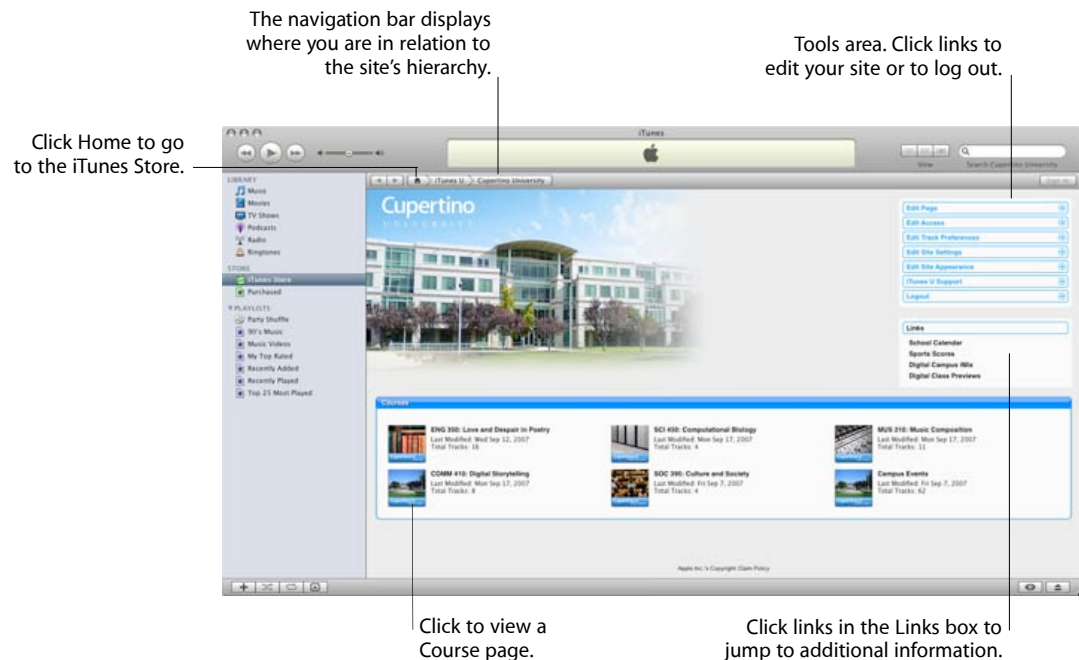
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When you first access your site, iTunes U displays your site's top-level, or root, page. Depending on the specifications you and Apple defined for your site, iTunes U displays a Public Feature page (reserved for public content) or a Welcome page (normally reserved for non-public content, but can be used for public content).

A Public Feature page is shown here:

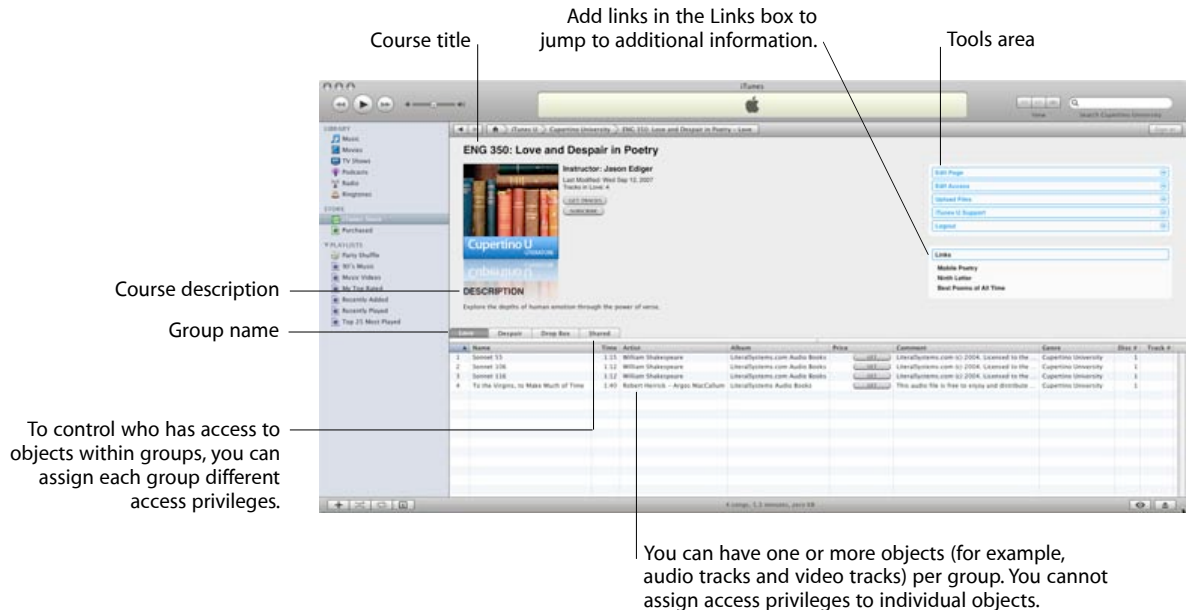


A Welcome page is shown here:



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Your site's root page can display a collection of descendant Welcome pages and Course pages a user can access. When you click a Course title or thumbnail image in a page, the associated Course page appears:



Course pages contain the audio, video, or PDF content files you and your instructors, staff, or students upload. You can organize your Course page content into groups, displayed as tabs, to help manage course information, and then you can assign permissions to each group to control user access to the content. You can create the following types of groups within a Course page:

- **Simple.** A Simple group populates track content in a Course page when users explicitly upload tracks to the course in your iTunes U site.
- **Smart.** A Smart group displays tracks in a Course page by performing a real-time search of your entire site for all tracks that match the specified criteria.
- **Feed.** A Feed group automatically populates track content in a Course page based on the specified podcast feed URL and details. Course content can be updated on a periodic basis and, depending on your site settings, can be updated as often as every day.

For more details and information on how to create the different group types, see ["Creating Group Types"](#) in Chapter 3.

In addition to allowing students to download the content you, your instructors, or your staff provide, instructors can also create a group to allow students to upload their own content for review (Drop Box group) or to share with other students in the class (Shared group). For example, in a journalism course, students might upload recorded interviews into a Drop Box group for the instructor to review or into a Shared group for other students to provide feedback. You can have many Course pages per iTunes U site and many groups within each Course page.

For the first 30 days after you activate your site, each time you click the link in your iTunes U welcome email, iTunes U redisplay the congratulations activation page containing your Site URL, Debug Suffix, Shared Secret, Administrator Credential, and the Login Here link so you can access your site. For security reasons, after 30 days, iTunes U disables the temporary access to your site. If you click the link in your iTunes U welcome

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email after 30 days, iTunes U displays the congratulations activation page directing you to iTunes U documentation so you can create the script that your institution's identity management system will later use to log in to your site and transfer access to iTunes U. After an additional two weeks, you no longer have access to the congratulations activation page.

Note: After you create and integrate your script and are ready to use your script to log in to your iTunes U site, you should remove the temporary access to your site by using the iTunes U Edit Access page to delete the activation credential iTunes U created. For more information on user access and the Edit Access page, see [Chapter 4, "Controlling User Access."](#)

- 6 Plan and organize your iTunes U site. For more information, see ["Planning Your iTunes U Site"](#) later in this chapter.
- 7 Create a transfer script, integrate iTunes U with your institution's authentication and authorization services, and log in to your iTunes U site using your transfer script and the Administrator Credential provided in the congratulations activation page in step 3.

For more information on how to create a transfer script and integrate iTunes U with your institution's authentication and authorization services, see [Chapter 2, "Integrating Authentication and Authorization Services."](#)
- 8 Customize your iTunes U site with your institution's look and feel. For more information, see [Chapter 3, "Customizing Your iTunes U Site."](#)
- 9 Control user access to your iTunes U pages and groups. For more information, see [Chapter 4, "Controlling User Access."](#)
- 10 Upload content to your iTunes U site. For more information, see [Chapter 5, "Adding Content to Your iTunes U Site."](#)

You can use iTunes U advanced features to view and modify your site, search your site, or view report data about your site. For more information on these features, see [Chapter 6, "iTunes U Web Services,"](#) [Chapter 7, "Searching Your iTunes U Site,"](#) and [Chapter 8, "Understanding iTunes U Reports,"](#) respectively.

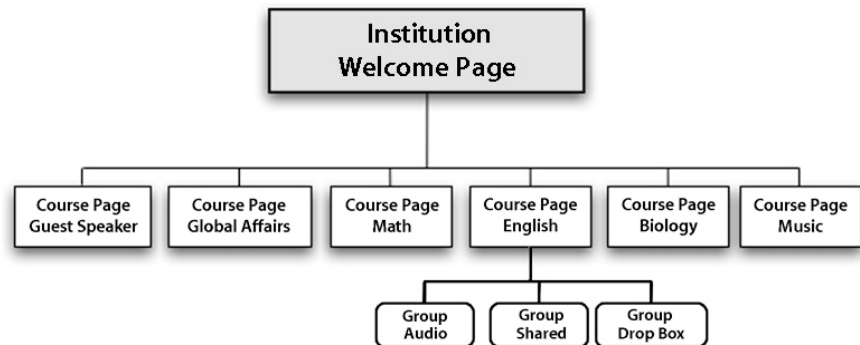
Planning Your iTunes U Site

Each iTunes U site, and its structure and content, is organized in an easy-to-use hierarchy of folders and files, or pages and objects. As the site administrator, you can use this structure as a starting point. Before you start populating your iTunes U site with content, you should take time to further plan your site's organization, including its structure, user authorization, and access permissions.

To set up and apply user authorization and access permissions properly, you must organize your content into a structure based on the amount of content you will provide and the desired access for each user.

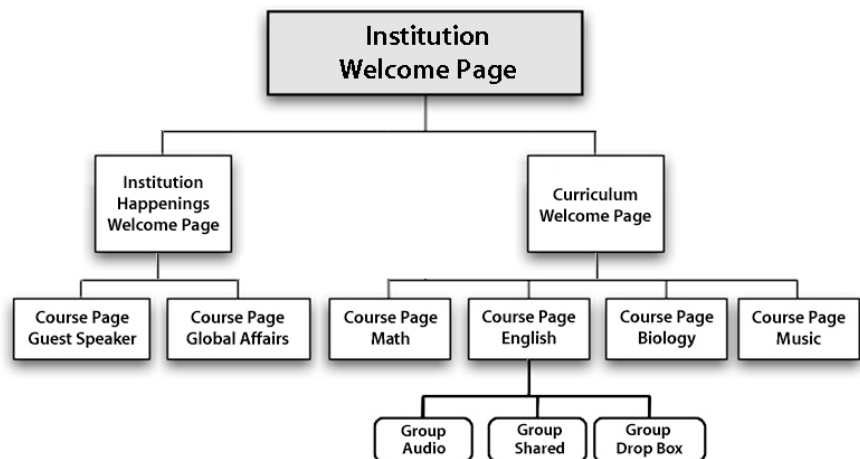
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For example, to keep your site and user access simple, you can use the following structure:



In this example, you can control user access by providing access to the entire site or restricting access to specific Course pages or down to individual groups in the English Course page.

If you have more content, or need more restrictive access, the following structure might be more appropriate:



In this example, you can control user access by providing access to the entire site or restricting access to a specific descendant Welcome page, specific Course page, or down to individual groups in the English Course page.

For each type of user you define, also known as a user credential, you can assign a different access level for every page or hierarchy of pages within your site. The access level you assign at your site's root page is inherited throughout all pages and groups of your site, unless it is explicitly overridden by a descendant page or group definition. For example, in the diagram above, if you assign a user credential download access to the Institution Happenings Welcome Page, and its descendants are Course Page Guest Speaker and Course Page Global Affairs, by default the user credential automatically receives download access to these descendant pages.

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The combination of a user's credential and the specific access level you assign to that credential define the authorization, actions, and permissions the user has to a particular page, group, or hierarchy of pages. To get you started, iTunes U provides you with the following built-in user credentials:

- **Administrator.** iTunes U automatically provides this credential so you, the site administrator, have the most access to your iTunes U site, allowing you to create new pages, assign ownership of pages to specific instructors, and manage the iTunes U site. When editing credentials, you can only change the Group Access Label for the iTunes U built-in site administrator credential. When logging in to your site, you must pass this credential to iTunes U in your transfer script.
- **Authenticated.** iTunes U automatically provides this credential to every user transferred into iTunes U with a valid authorization token. By default, this credential has no access to iTunes U pages or groups. iTunes U determines this credential at login; do not pass this credential to iTunes U in your transfer script.
- **Unauthenticated.** iTunes U automatically provides this credential to every user transferred into iTunes U without a valid authorization token (for example, directly through a URL). By default, this credential has no access to iTunes U pages or groups. iTunes U determines this credential at login; do not pass this credential to iTunes U in your transfer script.
- **All.** iTunes U automatically provides this credential to every user transferred into iTunes U with or without a valid authorization token. By default, this credential has no access to iTunes U pages or groups. iTunes U determines this credential at login; do not pass this credential to iTunes U in your transfer script. Use All to give authenticated and unauthenticated users the same permissions with a single credential. To make content in your iTunes U site available to the public, you must update the access level for this credential.

In addition to the iTunes U built-in credentials, you can create credentials for the specific types of users accessing your site. For example, you might want to create the following types of user credentials:

- **Instructor.** You can create an Instructor credential and specify that this user has access constrained to the classes to which the instructor is assigned, allowing the instructor ownership for the particular class and its Course page.
- **Student.** You can create a Student credential and specify that this user has the least access, constrained to the classes in which the student is registered, allowing the student access to the particular class and its Course page, with specific Course page access defined by the instructor who owns the page.

Every user who tries to access your site is assigned the All credential. In addition, users might be assigned the Authenticated or Unauthenticated credential depending on whether or not they were transferred into iTunes U with a valid authorization token. For more information on authorization tokens, see [Chapter 2, "Integrating Authentication and Authorization Services."](#)

For more information about user access, actions, and permissions, see [Chapter 4, "Controlling User Access."](#)

Chapter 2

Integrating Authentication and Authorization Services

This chapter describes how to integrate iTunes U with your institution's existing authentication and authorization services.

iTunes U assumes that your institution is using an existing web-based infrastructure to manage your student, instructor, and other user IDs and that you can authenticate and authorize these users to iTunes U.

By using your existing services to maintain and authenticate user information and access privileges, you can control the user information sent to iTunes U and ensure secure access to an iTunes U site containing course materials. The user information you send officially identifies the user and confirms the user's specific access permissions to the iTunes U site and to resources within the site. Whether your site will be for your students, instructors, and staff only, or will also be available to the public, you must, at a minimum, have an existing web-based infrastructure in place to authenticate and authorize a site administrator.

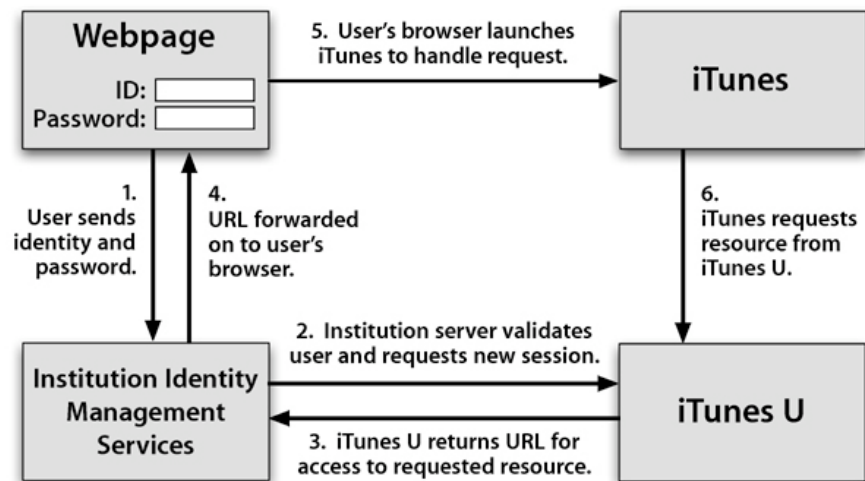
This chapter covers the steps needed to integrate iTunes U with your authentication and authorization services:

- 1 Modify an example iTunes U script using the information you received when you activated your site. For more information, see ["Modifying an iTunes U Script"](#) later in this chapter.
- 2 Create local server scripts that verify user authentication and transfer the necessary authorization data to iTunes U when a user tries to access a non-public iTunes U page from your webpage. For more information, see ["Transferring Authorization Data to iTunes U"](#) later in this chapter.
- 3 Determine where access to iTunes U should be added to your existing webpage, or consider developing new pages. For more information, see ["Linking to iTunes U"](#) later in this chapter.
- 4 Test your authentication and authorization integration using the iTunes U Application Programming Interface (API). For more information, see ["Testing Your iTunes U Integration Code"](#) later in this chapter.

Chapter 2: Integrating Authentication and Authorization Services

After you have established a successful login using your authentication and authorization services, for security reasons, you should remove the temporary access iTunes U created for your site by using the iTunes U Edit Access page to delete the activation credential. You should now only access your iTunes U site using your transfer script and authentication and authorization services, using the Administrator Credential provided in the congratulations activation page. For more information on user access and the Edit Access page, see [Chapter 4, "Controlling User Access."](#)

The diagram below illustrates the integration interaction between your web-based infrastructure and iTunes U:



Note: You can use your existing Learning Management Systems (LMS) as an authentication and authorization gateway to iTunes U, providing a familiar interface for your users, as well as accomplishing your authentication and authorization step. You should expect to perform some level of development and system integration work to get these systems working properly with iTunes U. iTunes U is not currently integrated directly with Blackboard, WebCT, Sakai, Desire2Learn, or other LMS systems, but there may be solutions available in the future. For more details, check the iTunes U support site at http://www.apple.com/support/itunes_u/.

Modifying an iTunes U Script

While working out all the details of how to integrate iTunes U with your authentication and authorization services, you can use the iTunes U support site example scripts located at http://www.apple.com/support/itunes_u/ to help you develop your transfer script.

To do this, use the information you received when you activated your site and modify one of the example scripts from the iTunes U support site. By modifying an example script as described below, you receive administrator access to your site. To integrate iTunes U with your authentication and authorization services and provide specific access to other users, you need to make further modifications.

Chapter 2: Integrating Authentication and Authorization Services

To modify the Java sample script (ITunesU.java):

- 1 Edit the following variables located in the main() method of the Java class so the values match the values you received when you activated your site:

String siteURL

String debugSuffix

String sharedSecret

String administratorCredential

- 2 Save the file.
- 3 Compile the ITunesU.java file:

```
javac ITunesU.java
```

- 4 Copy the ITunesU.class file and the itunesu shell script to your web server's cgi-bin directory.
- 5 Call the script from your web browser:

```
http://example.com/cgi-bin/iTunesU
```

iTunes U displays your institution's root page. You can begin editing your iTunes U site pages.

You can also change the user identification information by editing the following variables located in the main() method of the ITunesU.java file: String displayName, String emailAddress, String username, and String userIdentifier. If you do this, you must repeat steps 2 through 5 for the changes to take effect.

Important: At this stage, anyone who can access the URL in step 5 can administer your iTunes U site. To make sure your site is secure, limit access to your site by limiting access to the updated Java sample script.

If your integration is not working properly, or you do not have access to the iTunes U site you are trying to log in to, iTunes U redirects you to a default Site login URL:

```
https://<domainname>/itunesu/?destination=<domainname>
```

To help you determine why your integration failed, append the Debug Suffix provided in your congratulations activation page to the end of your site URL. iTunes U displays an Access Debugging page containing information about the transfer identity and credentials received, the validity of the signature received, and the access provided to the specified URL destination. Once you have established a successful login, you can use the iTunes U Edit Site Settings page to change the default Site login URL.

Transferring Authorization Data to iTunes U

To successfully access iTunes U pages or groups when a user clicks an iTunes U link in your webpage, you must transfer an authorization token over Secure Sockets Layer (SSL) to iTunes U. The authorization token is a string containing a user's credentials and, optionally, user identity information, as well as a time stamp and digital signature.

To transfer authorization data to iTunes U:

- 1 Generate the token data.
- 2 Create the digital signature.
- 3 Send the authorization token to iTunes U.

Generating the Token Data

To establish a session when the user clicks an iTunes U link in your webpage, you must send an authorization token to iTunes U authorizing the user to iTunes U. This authorization token contains the user's credential information, and, optionally, information identifying the user, as well as the token creation time and a digital signature. By default, the authorization token is only valid for 90 seconds from the time you create it. Therefore, be sure to send the authorization token to iTunes U within 90 seconds of the time you create it.

Note: A user's access to specific iTunes U pages or groups depends on the credentials sent in the authorization token as well as the access levels you define for those credentials within iTunes U. For more information, see [Chapter 4, "Controlling User Access."](#)

To construct the token data:

- 1 Concatenate credential, identity, and time key-value pairs in alphabetical order in the form: `key1=value1&key2=value2&key3=value3`. For example:
`credentials=foo&identity=<jdoe@example.edu>"jdoe"&time=1139331600`
- 2 URL-encode the key-value string result from step 1. The token string becomes:
`credentials=foo&identity=%3Cjdoe@example.edu%3E%22jdoe%22&time=1139331600`
- 3 Create a final UTF-8 encoded token data string from the result in step 2.

Important:

- You must specify the key-value pairs in alphabetical order: credentials, identity, time.
- Apple uses the Java URL encoding style for signature matching. Using this style, all characters except the following are encoded: letters, numbers, periods (.), dashes (-), underscores (_), and asterisks (*).

Token

Data Key	Token Data Value
credential	<p>A text string containing one or more of the user's attributes and unique identifier. You can specify up to 1024 bytes per credential. For example: <code>Student@urn:mace:example.edu:psych101.3.200609.</code></p> <p>You can specify up to 100 credentials per user, separated by semicolons (;). However, the credential itself cannot contain semicolons (;), backslashes (\), or control characters. If you do not want to specify any credentials, define the key as <code>credentials=</code> with no space between the empty credential and the ampersand (&) delimiter separating the next key-value pair. If you do not specify any credentials, the user can only access publicly available content.</p> <p>For an example of how to implement the credential key, see the credential key example written in Java later in this chapter.</p> <p>Note: You use this credential information again when you define user access to pages and groups within your iTunes U site. For this reason, you may find it helpful to create a consistent naming scheme for all your user credential information.</p> <p>For information on MACE and middleware infrastructure, see http://middleware.internet2.edu/MACE/.</p> <p>For information on Internet2-LDAP representations of eduCourse attributes, see http://middleware.internet2.edu/courseid/docs/internet2-mace-dir-courseid-educourse-ldap-200507.html.</p>

Chapter 2: Integrating Authentication and Authorization Services

Token Data Key	Token Data Value
identity	<p>An optional text string representing a specific user. For example: "Jane Doe" <janedoe@example.edu> (jdoe) [42].</p> <p>It is recommended that you define unique identity values for every user in your system. If you do not want to specify any identity information, define the key as <code>identity=</code> with no space between the empty identity and the ampersand (&) delimiter separating the next key-value pair. If you do not specify any identity information, iTunes U cannot distinguish one user from another and, for example, all users with Drop Box access can browse the content uploaded by other users.</p> <p>The identity key value is defined by:</p> <p>"displayName"<emailAddress>(username) [userIdentifier], where:</p> <ul style="list-style-type: none"> • <code>displayName</code> is the full name of the user, used to identify the user within iTunes U. For example: Jane Doe. To use special characters in the <code>displayName</code> key value, escape the character with a backslash (\). For example, to use a double quote ("), type \". • <code>emailAddress</code> is the user's email address. For example: janedoe@example.edu. The <code>emailAddress</code> key value cannot contain spaces or these characters: <, > (less than or greater than). For more information, see Section 3.4.1 of RFC 2822 – Internet Message Format at http://www.faqs.org/rfcs/rfc2822.html. • <code>username</code> is the user's unique login name. For example: jdoe. You can include a domain name if your institution shares information with other domains. For example: jdoe@example.edu. The <code>username</code> key value cannot contain these characters: (,) (open or closed parentheses). • <code>userIdentifier</code> is a unique identifier associated with the specified user. For example: 42. The <code>userIdentifier</code> key value can be any string that allows your institution to uniquely identify a user. The <code>userIdentifier</code> key value cannot contain these characters: [,] (open or closed brackets). If your institution has a central IT system, you probably already have an internal User ID associated with each user in your system that you can use as the <code>userIdentifier</code>. <p>You are not required to send iTunes U any user information that would violate your privacy policies. You may send an opaque or other identifier that does not contain private user information. If you send iTunes U identity key values, iTunes U can provide more detailed information about your users and the actions they perform. For example, if you send identity information to iTunes U, you can see information about the user who uploaded a track, instead of simply the time when a track was uploaded.</p> <p>For an example of how to implement the identity key, see the identity key example written in Java later in this chapter.</p>
time	<p>The time, in seconds, when you generate the token data. Specify time as the number of seconds from the epoch (midnight January 1, 1970), normalized to Greenwich Mean Time (GMT). Specify time as base 10, without leading zeros or trailing decimals. For example: 1139331600.</p> <p>If your server's clock is not synchronized with the iTunes U server, authentication fails. To ensure that your time is synchronized with the iTunes U server time, set your institution's server time to network time (NTP).</p> <p>iTunes U uses the token generation time to establish a login session. A login session is the duration of time, 90 seconds by default, that your authentication and authorization privileges are valid. If you access iTunes U after the token generation time has expired, iTunes U directs you to the site's login page. For a site available to the public, iTunes U ignores the token, logs you in as a public visitor, and displays only public information in the site.</p>

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```

// Add each element to the buffer, escaping
// and delimiting them appropriately.
for (int i = 0; i < values.length; ++i) {
    if (values[i] != null) {
        if (buffer.length() > 0) buffer.append(' ');
        buffer.append(delimiters[i][0]);
        for (int j = 0, n = values[i].length(); j < n; ++j) {
            char c = values[i].charAt(j);
            if (c == delimiters[i][1] || c == '\\')
                buffer.append('\\');
            buffer.append(c);
        }
        buffer.append(delimiters[i][1]);
    }
}

// Return the generated string.
return buffer.toString();
}

```

Creating the Digital Signature

Since iTunes U relies on your institution's system to provide authentication and authorization information, you must use a security mechanism for iTunes U to validate the authenticity of the information it receives from you. To accomplish this, you send your information to iTunes U along with a digital signature that iTunes U uses to validate the information.

You create the digital signature by using the HMAC-SHA256 algorithm to cryptographically sign the token data you generated with the shared secret you received when you activated your iTunes U site.

For more information on HMAC: Keyed-Hashing for Message Authentication and Secure Hash Standards, see RFC 2104 - HMAC at <http://www.faqs.org/rfcs/rfc2104.html> and <http://www.governmentsecurity.org/articles/articles2/fips-180-2.pdf>, respectively.

To create the digital signature:

- 1 Create a signature string by concatenating the URL-encoded key-value string from step 2 in [“Generating the Token Data”](#) and the shared secret.
- 2 Run the HMAC-SHA256 secure hash algorithm on the signature string (containing the token data and shared secret). HMAC-SHA256 takes an input of any length and generates a 32-byte output value.

Chapter 2: Integrating Authentication and Authorization Services**3 Convert the HMAC-SHA256 output value into a 64-character hexadecimal representation.**

For an implementation example, review the following code fragment written in Java:

```
/**
 * Generate and sign an authorization token that you can use to securely
 * communicate to iTunes U a user's credentials and identity. The token
 * includes all the data you need to communicate to iTunes U as well as
 * a creation time stamp and a digital signature for the data and time.
 *
 * @param credentials The user's credentials string, as
 *                    obtained from getCredentialsString().
 * @param identity The user's identity string, as
 *                obtained from getIdentityString().
 * @param time Token time stamp. The token will only be valid from
 *             its time stamp time and for a short time thereafter
 *             (usually 90 seconds).
 * @param key The bytes of your institution's iTunes U shared secret key.
 *
 * @return The authorization token. The returned token will
 *         be URL-encoded and can be sent to iTunes U with
 *         a <A HREF="http://www.ietf.org/rfc/rfc1866.txt">form
 *         submission</A>. iTunes U will typically respond with
 *         HTML that should be sent to the user's browser.
 */
public String getAuthorizationToken(String credentials, String identity,
                                   Date time, byte[] key) {

    // Create a buffer with which to generate the authorization token.
    StringBuffer buffer = new StringBuffer();

    // Generate the authorization token.
    try {

        // Start with the appropriately encoded credentials.
        buffer.append("credentials=");
        buffer.append(URLEncoder.encode(credentials, "UTF-8"));

        // Add the appropriately encoded identity information.
        buffer.append("&identity=");
        buffer.append(URLEncoder.encode(identity, "UTF-8"));

        // Add the appropriately formatted time stamp. Note that
        // the time stamp is expressed in seconds, not milliseconds.
        buffer.append("&time=");
        buffer.append(time.getTime() / 1000);

        // Generate and add the token signature.
        String data = buffer.toString();
        buffer.append("&signature=");
        buffer.append(this.hmacSHA256(data, key));

    } catch (UnsupportedEncodingException e) {

        // UTF-8 encoding support is required.
        throw new java.lang.AssertionError(
            "ITunesU.getAuthorizationToken(): "
            + "UTF-8 encoding not supported!");

    }

    // Return the signed authorization token.
    return buffer.toString();
}

/**
 * Generate the HMAC-SHA256 signature of a message string, as defined in
 * <A HREF="http://www.ietf.org/rfc/rfc2104.txt">RFC 2104</A>.
 *
 * @param message The string to sign.
 * @param key The bytes of the key to sign it with.
 */
```

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```

*
* @return A hexadecimal representation of the signature.
*/
public String hmacSHA256(String message, byte[] key) {

    // Start by getting an object to generate SHA-256 hashes with.
    MessageDigest sha256 = null;
    try {
        sha256 = MessageDigest.getInstance("SHA-256");
    } catch (NoSuchAlgorithmException e) {
        throw new java.lang.AssertionError(
            this.getClass().getName()
            + ".hmacSHA256(): SHA-256 algorithm not found!");
    }

    // Hash the key if necessary to make it fit in a block (see RFC
2104).
    if (key.length > 64) {
        sha256.update(key);
        key = sha256.digest();
        sha256.reset();
    }

    // Pad the key bytes to a block (see RFC 2104).
    byte block[] = new byte[64];
    for (int i = 0; i < key.length; ++i) block[i] = key[i];
    for (int i = key.length; i < block.length; ++i) block[i] = 0;

    // Calculate the inner hash, defined in RFC 2104 as
    // SHA-256(KEY ^ IPAD + MESSAGE)), where IPAD is 64 bytes of 0x36.
    for (int i = 0; i < 64; ++i) block[i] ^= 0x36;
    sha256.update(block);
    try {
        sha256.update(message.getBytes("UTF-8"));
    } catch (UnsupportedEncodingException e) {
        throw new java.lang.AssertionError(
            "ITunesU.hmacSH256(): UTF-8 encoding not supported!");
    }
    byte[] hash = sha256.digest();
    sha256.reset();

    // Calculate the outer hash, defined in RFC 2104 as
    // SHA-256(KEY ^ OPAD + INNER_HASH), where OPAD is 64 bytes of 0x5c.
    for (int i = 0; i < 64; ++i) block[i] ^= (0x36 ^ 0x5c);
    sha256.update(block);
    sha256.update(hash);
    hash = sha256.digest();

    // The outer hash is the message signature...
    // convert its bytes to hexadecimal.
    char[] hexadecimals = new char[hash.length * 2];
    for (int i = 0; i < hash.length; ++i) {
        for (int j = 0; j < 2; ++j) {
            int value = (hash[i] >> (4 - 4 * j)) & 0xf;
            char base = (value < 10) ? ('0') : ('a' - 10);
            hexadecimals[i * 2 + j] = (char)(base + value);
        }
    }

    // Return a hexadecimal string representation of the message
signature.
    return new String(hexadecimals);
}

```

Next, send the token data and digital signature, which make up the authorization token, to iTunes U.

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Sending the Authorization Token to iTunes U

A successful integration with iTunes U requires that you send the authorization token over SSL to iTunes U. To do this, send an https request with corresponding parameters, along with the authorization token, to an iTunes U URL. For example:

```
https://deimos.apple.com/WebObjects/Core.woa/Browsev2/Example.edu.42
?credentials=Administrator%40urn%3Aurn%3Aitunesu.com%3Asites%3Aexam
ple.edu&identity=%22Jane+Doe%22+%3Cjane+doe%40example.edu%3E+%28jdoe%
29+%5B42%5D&time=1147136717&signature=597c304e90fb62067c7e3fa57fe824
e77997dd8aa96649366c5fc59104074744
```

Note: Due to URL length limitations, it is recommended that you never pass more than 100 credentials per session.

Review the following code example written in Java for an iTunes U transfer scheme implementation:

```
/**
 * Send a request for an action to iTunes U with an authorization token.
 *
 * @param url URL defining how to communicate with iTunes U and
 *           identifying which iTunes U action to invoke and which
 *           iTunes U page or item to apply the action to. Such URLs have
 *           a format like <CODE>[PREFIX]/[ACTION]/[DESTINATION]</CODE>,
 *           where <CODE>[PREFIX]</CODE> is a value like
 *           "https://deimos.apple.com/WebObjects/Core.woa" which defines
 *           how to communicate with iTunes U, <CODE>[ACTION]</CODE> is
 *           a value like "Browse" which identifies which iTunes U action
 *           to invoke, and <CODE>[DESTINATION]</CODE> is a value like
 *           "example.edu" which identifies which iTunes U page or item to
 *           apply the action to. The destination string "example.edu"
 *           refers to the root page of the iTunes U site identified by
 *           the domain "example.edu". Destination strings for other items
 *           within that site contain the site domain followed by
 *           numbers separated by periods. For example:
 *           "example.edu.123.456.0789". You can find these strings in the
 *           items' URLs, which you can obtain from iTunes. See the
 *           iTunes U documentation for details.
 * @param token Authorization token generated by getAuthorizationToken().
 *
 * @return The iTunes U response, which may be HTML or
 *         text depending on the type of action invoked.
 */
public String invokeAction(String url, String token) {

    // Send a request to iTunes U and record the response.
    StringBuffer response = null;
    try {

        // Verify that the communication will be over SSL.
        if (!url.startsWith("https")) {
            throw new MalformedURLException(
                "iTunesU.invokeAction(): URL \""
                + url + "\" does not use HTTPS.");
        }

        // Create a connection to the requested iTunes U URL.
        HttpURLConnection connection =
            (HttpURLConnection)new URL(url).openConnection();
        connection.setUseCaches(false);
        connection.setDoOutput(true);
        connection.setRequestMethod("POST");
        connection.setRequestProperty(
            "Content-Type",
```

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```

        "application/x-www-form-urlencoded; charset=UTF-8");
    // Send the authorization token to iTunes U.
    connection.connect();
    OutputStream output = connection.getOutputStream();
    output.write(token.getBytes("UTF-8"));
    output.flush();
    output.close();

    // Read iTunes U's response.
    response = new StringBuffer();
    InputStream input = connection.getInputStream();
    Reader reader = new InputStreamReader(input, "UTF-8");
    reader = new BufferedReader(reader);
    char[] buffer = new char[16 * 1024];
    for (int n = 0; n >= 0;) {
        n = reader.read(buffer, 0, buffer.length);
        if (n > 0) response.append(buffer, 0, n);
    }

    // Clean up.
    input.close();
    connection.disconnect();

} catch (UnsupportedEncodingException e) {

    // iTunes U requires UTF-8 and ASCII encoding support.
    throw new java.lang.AssertionError(
        "iTunesU.invokeAction(): UTF-8 encoding not supported!");

} catch (IOException e) {

    // Report communication problems.
    throw new java.lang.AssertionError(
        "iTunesU.invokeAction(): I/O Exception " + e);

}

// Return the response received from iTunes U.
return response.toString();

}

```

When iTunes U receives the https request, it validates the authorization token using the shared secret and the HMAC-SHA256 algorithm. If the authorization token is valid, iTunes U returns a response to your server. Your institution's server then forwards the response to the user's web browser, which in turn opens iTunes to the page specified, *Example.edu.42*, in the https request.

For help debugging any problems you encounter, iTunes U provides an Access Debugging page containing information that may be helpful in solving many of your site and access problems, including information about the transfer identity and credentials received, the validity of the signature received, and the access provided to the specified URL destination. To access the page, append the Debug Suffix provided in your congratulations activation page to the end of your site URL.

Linking to iTunes U

Each page, each group within each page, and each track within each group in your iTunes U site has a unique URL, making it easy for you to create links from your iTunes U Links box, scripts, webpages, or Learning Management Systems (LMS) to the requested iTunes U page, group, or track.

To obtain the URL to a specific iTunes U page, group, or track:

- 1 Open a plain text file.
- 2 Navigate in the iTunes application to the specific iTunes U page, group, or track you want.
- 3 Do one of the following:
 - For a page, drag the navigation bar from the iTunes application into your open text file.
 - For a group, Control-click the tab for the group (or right-click for Windows), choose Copy iTunes Store URL from the shortcut menu, and paste the URL into your open text file. The last portion of the link is the iTunes U destination information for the group.
 - For a track, Control-click the track (or right-click for Windows), choose Copy iTunes Store URL from the shortcut menu, and paste the URL into your open text file.

This is the URL you use to generate a link from your iTunes U Links box, script, webpage, or LMS to the selected page, group, or track within iTunes U.

Notes:

- You can drag any segment from the navigation bar or any link in iTunes U to your desktop to create a quicklink to that page, group, or link.
- To obtain a public URL to your site, drag the element of the navigation bar containing your institution's name into your open text file.
- Links created as described above use an https:// or http:// URL protocol. If you paste these URLs directly into a link you created in your iTunes U Links box, when a user clicks the link the user is first redirected to a web browser and then taken to the page, group, or track defined in the link. To avoid a trip through the web browser, use an iTunes link by changing the https:// or http:// in the URL to itmss://. When you installed iTunes on your systems, it added itself as a URL scheme handler for itmss:// URLs.

Linking to iTunes U After Session Timeout

When a user clicks a link to return to a page, group, or track, if iTunes U determines that the user is not currently logged in to an iTunes U session, the following steps occur:

- 1 iTunes U redirects the request to your institution's web authentication and authorization server, based on the Site login URL you provided in the Edit Site Settings page.
- 2 Your institution's web server re-authenticates the user and sends the necessary authorization token to iTunes U.

In order to display the exact page, group, or track the user was trying to access, iTunes U needs to send destination information during the redirect and receive the destination information back with the authorization token. Destination information is an internal set of numbers that uniquely identifies an iTunes U page, group, or track. Without the destination information, iTunes U cannot display the requested page, group, or track and, instead, displays your site's root page.

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To send destination information during a redirect, specify the `${DESTINATION}` variable at the end of your "Site login URL" in the iTunes U Edit Site Settings page. When iTunes U redirects the user's request for a page, group, or track, iTunes U replaces the `${DESTINATION}` variable with the page, group, or track destination information. If you designed your transfer script to accept the variable through an HTTP POST or GET request, the script can also generate a URL to pass to iTunes U and display the requested page, group, or track.

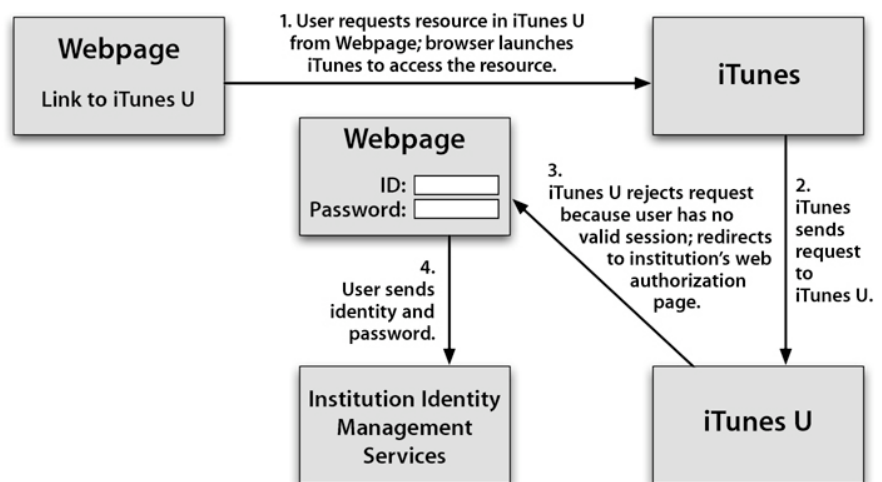
For example, if a user attempts to access a track in a Course page after the session timeout has expired, iTunes U redirects the user to the Site login URL defined in the Edit Site Settings page:

```
https://www.example.edu/cgi-bin/itunesu?destination=${DESTINATION}
```

If the user logs in and is re-authenticated successfully, and the transfer script is designed to handle the destination variable, iTunes U redirects the user back to the track in the Course page instead of your site's root page. For more information, see ["Editing Site Settings"](#) in Chapter 3.

- 3 iTunes U logs the user back in and displays the requested page, group, or track.

The following diagram illustrates what happens when a user clicks a link referencing iTunes U content:



Note: After step 4 in the diagram, your server validates the user and transfers authorization data to iTunes U. For more information on the next steps, see step 3 in the previous iTunes U integration interaction diagram and ["Transferring Authorization Data to iTunes U"](#) earlier in this chapter.

Testing Your iTunes U Integration Code

Before you send an authorization token to iTunes U, you should test that your code constructs the token properly and that your results match what iTunes U expects.

For your testing purposes, Apple provides sample data you can use to test that your code produces the expected result. Using the sample data, your code should produce an identical authorization token to the one below. If your code is not producing the same result, check for inconsistencies using the details provided earlier in this chapter.

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Using the following sample data:

- Display name=Jane Doe
- Email address=janedoe@example.edu
- Username=jdoe
- User identifier=42
- Credential=Administrator@urn:mace:itunesu.com:sites:example.edu
- Shared secret=STRINGOFTHIRTYTWOLETTERSORDIGITS

Your resulting token data should be the following:

```
credentials=Administrator%40urn%3Apace%3Aitunesu.com%3Asites%3Aexample.edu&identity=%22Jane+Doe%22+%3Cjanedoe%40example.edu%3E+%28jdoe%29+%5B42%5D&time=1147136717
```

And, after signing the token data with the shared secret,

STRINGOFTHIRTYTWOLETTERSORDIGITS, your resulting signature value should be the following:

```
597c304e90fb62067c7e3fa57fe824e77997dd8aa96649366c5fc59104074744
```

Therefore, your authorization token should be:

```
credentials=Administrator%40urn%3Apace%3Aitunesu.com%3Asites%3Aexample.edu&identity=%22Jane+Doe%22+%3Cjanedoe%40example.edu%3E+%28jdoe%29+%5B42%5D&time=1147136717&signature=597c304e90fb62067c7e3fa57fe824e77997dd8aa96649366c5fc59104074744
```

Once you have your scripts working properly, you can test whether iTunes U understands the authentication data your system sends by transferring your site administrator credential to iTunes U as an authorization token.

Chapter 3

Customizing Your iTunes U Site

Your initial iTunes U site uses default page designs and layouts. This chapter describes how you can change the default look and feel to use your institution's colors, logos, and graphics to make your iTunes U site appear familiar to instructors, staff, students, and alumni.

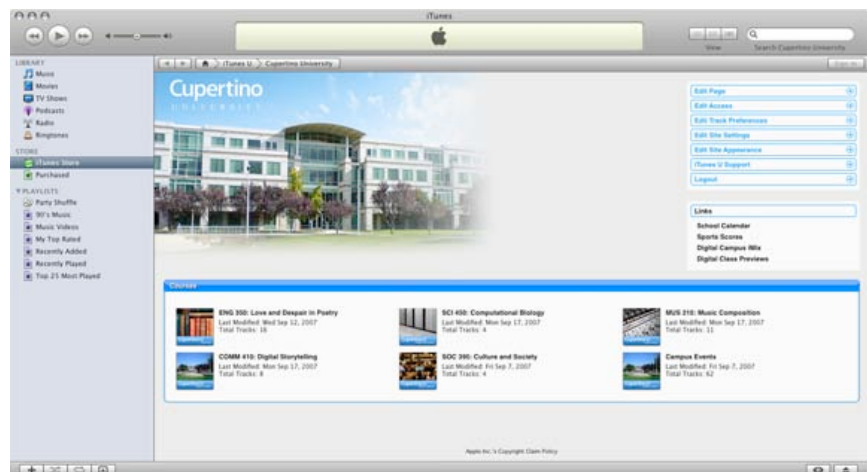
Additionally, this chapter describes how to create templates, add new iTunes U pages, edit pages, define track preferences for your iTunes U content, and edit site settings.

This chapter covers the following topics:

- [Changing Your iTunes U Look and Feel](#)
- [Creating Welcome and Course Pages](#)
- [Editing Welcome Pages](#)
- [Editing Course Pages](#)
- [Editing Public Feature Pages](#)
- [Defining Track Preferences](#)
- [Editing Site Settings](#)

Changing Your iTunes U Look and Feel

Apple creates your iTunes U site using a predefined design and layout as a starting point, with default colors, fonts, links, and so on, and a common color scheme throughout your entire site.



Chapter 3: Customizing Your iTunes U Site

As the site administrator, you can edit your iTunes U pages and customize your iTunes U site. For example, you can change background colors, text colors, and Links box colors to customize your site's color scheme.

To customize the look and feel of your iTunes U site:

- 1 Log in to iTunes U as the site administrator.
- 2 Click Edit Site Appearance in the Tools area.
- 3 Choose a theme to apply to your entire iTunes U site. You can apply the theme as is or edit the theme to customize your iTunes U site.
- 4 Edit the selected theme. You can change the following elements of your pages:
 - Background color (including page, section heading, and section and Links box)
 - Text color (including regular text and section heading text)
 - Links box colors (including title text and content text)
 - Date and time formats

Notes:

- You must enter RGB values for the colors you want to use.
- Type date and time formats using the ISO 8601: 1988 (E) "Data elements and interchange formats – Information interchange – Representation of dates and times" international standard. For more information, see <http://www.w3.org/TR/NOTE-datetime>.

iTunes U creates a new theme for your site, named "Custom," based on your changes.

- 5 Click Preview to view your changes before you save them to your iTunes U site.
- 6 Click Save.

iTunes U immediately updates all pages throughout your site.

- 7 Click Logout.

Note: When creating a webpage publicizing your iTunes U integration, always use layouts, graphics, formats, type, and colors that are consistent with your institution's website. Do not mimic a webpage from Apple, and never use Apple copyrighted images or copy from Apple's website, ads, or other marketing communications. It is acceptable to show an image of your institution's iTunes U pages in your webpage. Do not animate or distort any graphics related to iTunes U. Do not use Apple product images including iPod in your website art, promotions, or communications. For more information, see the marketing kit resources located at http://www.apple.com/support/itunes_u.

Understanding iTunes U Page Design and Layout

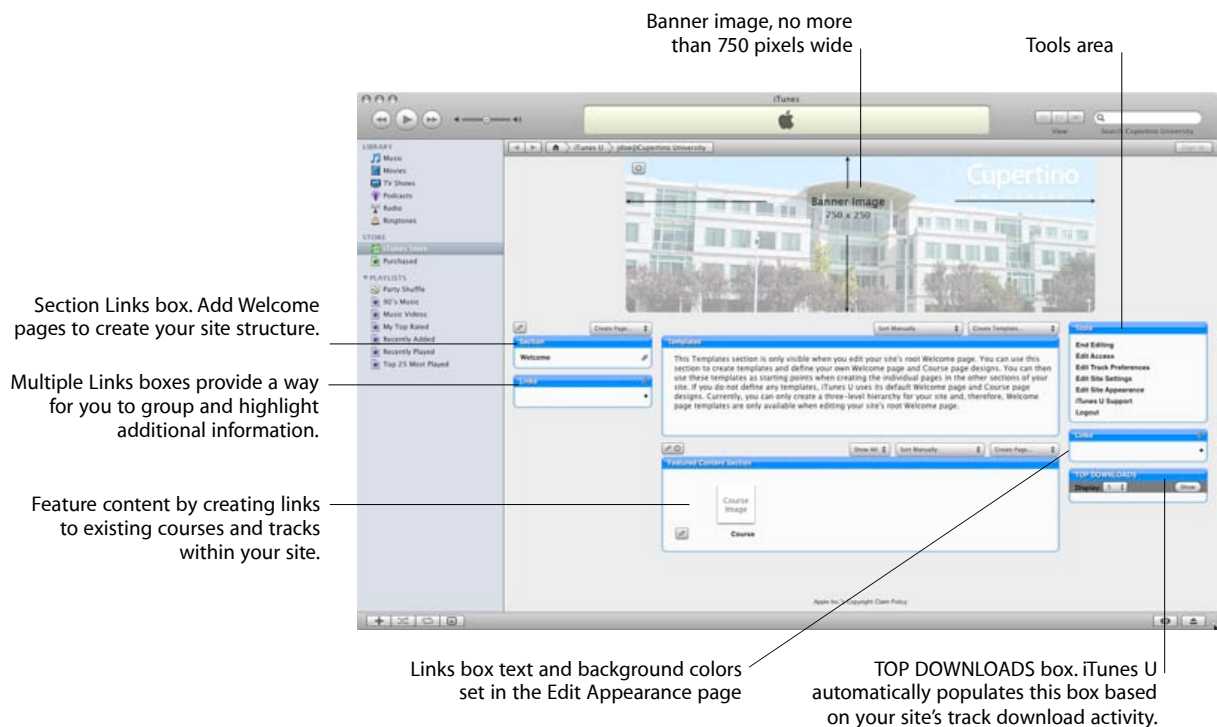
Depending on whether you use your site primarily for academic or public purposes can determine how you organize your site and how you present content in your site:

- For public purposes, specific content is featured and linked, and the site tends to have a deep architecture.
- For academic purposes, the content is presented dynamically to users based on the permissions you define, and the site tends to have a flat architecture.

To address these differences, iTunes U provides you with different predefined root pages, in addition to predefined Course pages. You use these pages as a starting point when designing your iTunes U site:

- Public Feature page. iTunes U uses the root Public Feature page exclusively for public content. You can organize Public Feature pages in a free form, linking structure based on the content you want to feature.
- Welcome page. iTunes U usually uses the root Welcome page for non-public content, but it can also be used for public content. You can organize Welcome pages in a top down, hierarchical structure based on departments, courses, tracks, and so on.
- Course page. iTunes U uses Course pages to display public and non-public audio, video, and PDF content files you and your instructors, staff, or students upload to your site. You can organize Course pages into groups, displayed as tabs, to help organize your content.

The following illustration shows the Public Feature page design and layout:

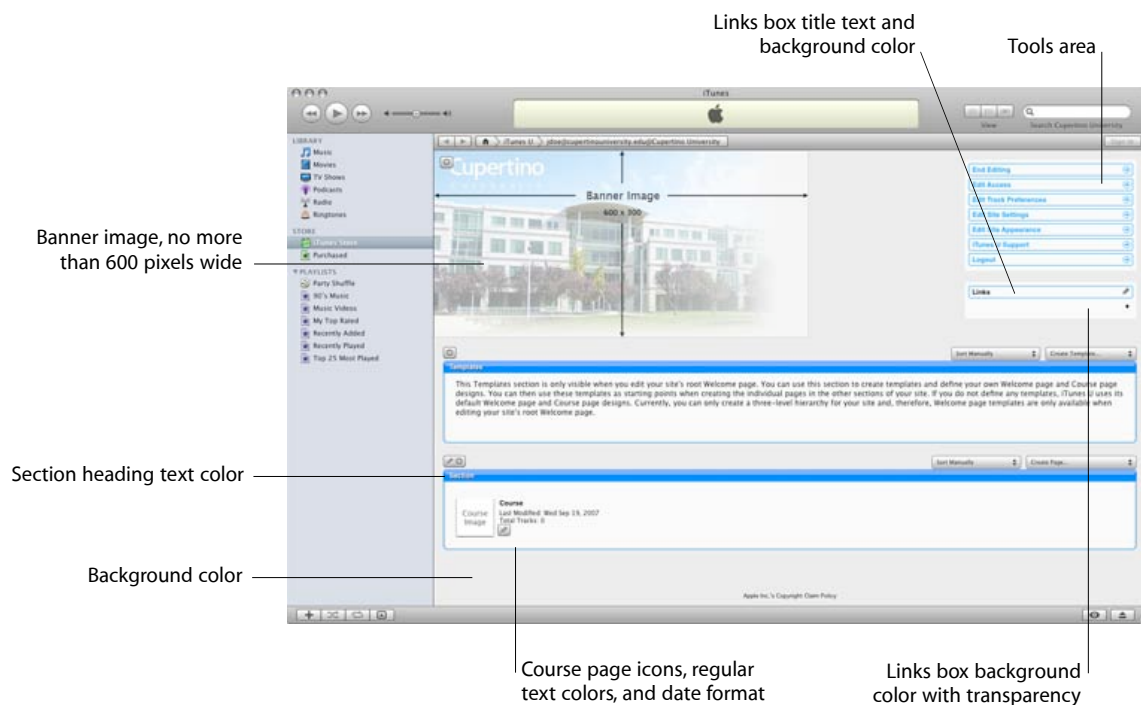


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When editing a Public Feature page, keep the following in mind:

- Create a banner image no more than 750 pixels wide. Creating a 750 x 250 pixel banner image is recommended. Banner images must be JPEG, PNG, or GIF with appropriate file extensions (.jpg, .jpeg, .png, .gif).
- iTunes U dynamically generates descendant Course page and track thumbnails from course images or track artwork images and displays thumbnails in featured sections in your site's root Public Feature page.
- Select web-safe colors for your section heading background color.
- Select background and regular text colors that complement your banner image.
- If you create a Links box with no links, iTunes U only displays the empty Links box when you are editing the Public Feature page.
- If you create a public course with no tracks, or a public section with no courses, iTunes U only displays the empty course or section when you are editing the Public Feature page.

The following illustration shows the Welcome page design and layout:



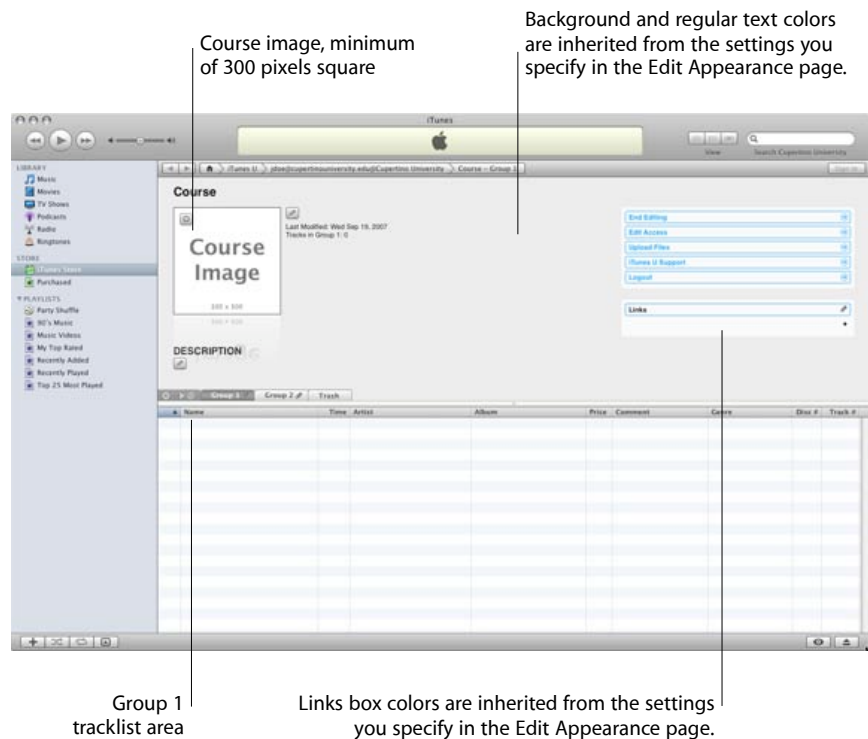
When editing a Welcome page, keep the following in mind:

- Create a banner image no more than 600 pixels wide. Creating a 600 x 300 pixel banner image is recommended. Banner images must be JPEG, PNG, or GIF with appropriate file extensions (.jpg, .jpeg, .png, .gif).
- iTunes U dynamically generates descendant Welcome page and Course page thumbnails from banner and course images and displays the thumbnails in your site's root Welcome page.
- If you want to change a banner and thumbnail image, upload a new banner image first, then upload a new thumbnail image.
- Select web-safe colors for your section heading background color.

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- Select background and regular text colors that complement your banner image.
- If you create a Links box with no links, iTunes U only displays the empty Links box when you are editing the Welcome page.
- If you create a public course with no tracks, or a public section with no courses, iTunes U only displays the empty course or section when you are editing the Welcome page.

The following illustration shows the Course page design and layout:



When editing a Course page, keep the following in mind:

- For optimal display within iTunes and iPod, the course image should be a minimum of 300 pixels square, or 300 pixels tall by 300 pixels wide. Course images must be JPEG, PNG, or GIF with appropriate file extensions (.jpg, .jpeg, .png, .gif).
- Course pages inherit the background, regular text, and Links box colors you specify in the Edit Site Appearance page.
- If you create a Links box with no links, iTunes U only displays the empty Links box when you are editing the Course page.


Creating Templates for Your Site

Along with a predefined look and feel for your pages, iTunes U provides default Welcome page and Course page templates for you to use to set up your site. As the site administrator, you can use the default Welcome page and Course page templates, or you can edit the default templates and create your own templates with your own Welcome page and Course page designs. You can create templates ahead of time and configure them with the images, links, text, and so on, that you want to use throughout your iTunes U site. You can then use these templates when creating the individual pages for your site.

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For example, you can define one Course page template with user access appropriate for a specific class and another Course page template for general campus information. By defining a number of different Welcome page and Course page template designs ahead of time, you can more quickly and easily populate your iTunes U site using the templates, and ensure a consistent look and feel throughout your site.

To create a Welcome page or Course page template:

- 1 Log in to iTunes U as the site administrator.
- 2 Click Edit Page in the Tools area.
- 3 Choose Of Type "Default Welcome" or Of Type "Default Course" from the Create Template pop-up menu in the Templates section.
- 4 Edit your new template information:
 - Type a full name for the template in the Title field. For example: Welcome Page Template or Course Page Template.
 - Type the common name for the template in the Short Name field. For example: Welcome or Course.
- 5 Click the Checkmark button () to save your new template and information.

iTunes U creates the template and displays the template title in the Create Page pop-up menus for you to use when creating new pages for your site.
- 6 Click the new template in the Templates section, and then click Add Content in the new Welcome page template or click Edit Page in the new Course page template to customize the template. You can add content for the template as well as change elements for the template. For example:
 - For the Welcome page template, you can change the banner image, Links box title and links, thumbnail image, number and order of sections, and section heading text. For information on how to edit your new Welcome page template, see ["Editing Welcome Pages"](#) later in this guide.
 - For the Course page template, you can change the course image, instructor name, course description, Links box title and links, number, type, and order of groups, and group names and access. For information on how to edit your new Course page template, see ["Editing Course Pages"](#) later in this guide.
- 7 Click End Editing.
- 8 Click Logout.

After you define and customize your Welcome page and Course page templates, you can choose the templates from the Create Page pop-up menus when creating new pages for your iTunes U site.


Creating Welcome and Course Pages

As the site administrator, you are the only user who can add descendant Welcome pages or Course pages, and thus a new section or course, to your iTunes U site. You can add Course pages for specific classes your instructors will be teaching, as well as general Course pages for such things as events on campus.

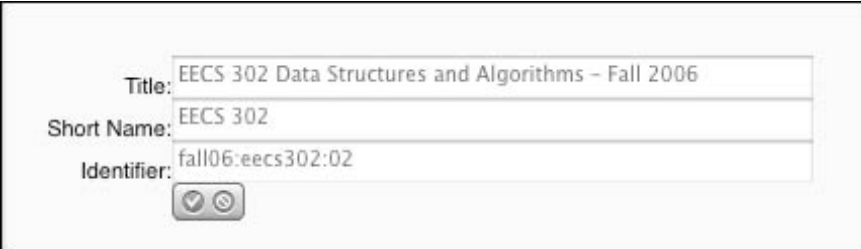
By default, iTunes U uses a Welcome page or Course page design and layout based on your site's default Welcome page template design and layout. However, you can edit the page and customize your iTunes U site, or you can create your own design by creating your own templates. For more information, see ["Creating Templates for Your Site"](#) earlier in this chapter.

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To add a descendant Welcome page or Course page:

- 1 Log in to iTunes U as the site administrator.
 - 2 Click Edit Page in the Tools area.
 - 3 Choose a page template from the Create Page pop-up menu in the section where you want to add a new page. Depending on how you want to organize your site's structure and group your site's content, choose:
 - A Welcome page template to add another Welcome page level before you add Course pages
 - A Course page template to add another Course page to your site's root Welcome page
- iTunes U adds your new page and displays page information fields.
- 4 Edit your new page information, and then click the Checkmark button () to save the information:
 - Type a full name for the page in the Title field. This should be the real, formal name for your event or course. For example: Cupertino University Happenings for a Welcome page or EECS 302 Data Structures and Algorithms – Fall 2006 for a Course page.
 - Type a common name for the page in the Short Name field. This should be the short, general usage name for your event or course. iTunes displays this name in your site's navigation bar, institution playlists, track information fields, and so on. For example, type Happenings for a Welcome page or EECS 302 for a Course page. For the Short Name to be most useful in Course pages and display well on iPod, use your course number.
 - Type a unique identifier for the page in the Identifier field. The identifier should be a unique string that can be passed to iTunes U when a user passes through your authentication system. For example: fall06:eeecs302:02 for a Course page. Specify a unique page identifier for descendant Welcome pages only if you need to restrict access to users with less than the Authenticated permission.

When you finish, the Course page information might look like the following:



Title:	EECS 302 Data Structures and Algorithms – Fall 2006
Short Name:	EECS 302
Identifier:	fall06:eeecs302:02

If you do not enter a unique identifier for the page, credentials defined with `${IDENTIFIER}` cannot access the page. For more information, see [“Using Identifier-Based Credentials”](#) in Chapter 4.




















iTunes U uses a default Welcome or Course image, based on the template you select. To change the image and the thumbnail version displayed in pages used to navigate to this page, edit the image within the descendant Welcome page or Course page. For more information, see [“Editing Welcome Pages”](#) and [“Editing Course Pages”](#) later in this chapter.

- 5 Click End Editing to save your changes.
- 6 Click Logout.

Editing Welcome Pages

Apple creates your site's initial iTunes U Welcome page using a predefined design and layout as a starting point. As the site administrator, you can change your Welcome page to display your institution's specific design and information. For example, you can change the banner image, Links box text and links, and general section order.

If you are logged in as the iTunes U site administrator, you can click Edit Page to edit your Welcome page and customize your iTunes U site. When you're done editing the page, click End Editing.

To edit this element	Take this action
Banner image	<p>Click the Up Arrow button () in the upper-left corner of the banner image, and then select a new banner image for your Welcome page.</p> <p>Note: By default, if you are editing a descendant Welcome page, iTunes U uses the banner image as the thumbnail image. You can override this default by editing the descendant Welcome page thumbnail image as described later in this table. If you want to change a banner and thumbnail image, upload a new banner image first, then upload a new thumbnail image.</p>
Descendant Welcome page thumbnail image	<p>Click Edit Page in the descendant Welcome page whose thumbnail image you want to update, click the Up Arrow button () in the Edit Page Thumbnail section, and then select a new image for your descendant Welcome page thumbnail.</p>
Links box title	<p>Click the Pencil button () in the Links box title bar, edit the existing Links box title text, and then click the Checkmark button () to save the new title.</p>
Links box links	<p>Click the Pencil button () in the Links box next to the link you want to edit, edit the existing link's title and URL, and then click the Checkmark button () to save the link information.</p> <p>Notes:</p> <ul style="list-style-type: none"> • To move a link up or down one level in the Links box, click the Pencil button () for the link you want to move, and then click the Up Triangle button () or Down Triangle button () • To delete a link in the Links box, click the Pencil button () for the link you want to delete, and then click the Delete button () • To add a new link to the Links box, such as to a department webpage, click the Add button () in the Links box above where you want the new link to appear, type a title and URL, and then save the new link by clicking the Checkmark button () <p>To add links between iTunes U pages and avoid a trip through the web browser, use an itmss:// URL in the Links box. When you installed iTunes on your system, it added itself as a URL scheme handler for itmss:// URLs. When a user tries to access an itmss:// URL, if the user has not already established a session, iTunes U reroutes the user to the Site login URL.</p>
Section heading text	<p>Click the Pencil button () in the section heading, edit the section heading text, and then click the Checkmark button () to save the section heading.</p> <p>Notes:</p> <ul style="list-style-type: none"> • To move a section up or down one level in the page, click the Up Triangle button () or Down Triangle button () • To delete a section, click the Delete button () • To add a new section, such as Campus Life, to your Welcome page, click the Add button () <p>iTunes U creates a new section below the section where you clicked the Add button. Type a heading for your new section.</p>

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















To edit this element	Take this action
Section page images and information	<p>Choose one of the following options from the Sort pop-up menu in the section where you want to sort page images and information.</p> <ul style="list-style-type: none"> • Sort Manually. When editing a page in a section, iTunes U displays the Left Triangle button (◀) and Right Triangle button (▶) so you can move pages manually. • Sort By Title. iTunes U sorts the page images and information in ascending order, by title name. • Sort By Last Modified Date. iTunes U sorts the page images and information in descending order, by the date the page was last modified.
Page title, short name, and identifier	<p>Click the Pencil button (✎) under the page title and details, edit the page title, short name, or identifier, and then click the Checkmark button (✓) to save the information.</p> <p>Notes:</p> <ul style="list-style-type: none"> • To move a page left or right one position, click the Left Triangle button (◀) or Right Triangle button (▶). • To delete a page, click the Delete button (🗑). • To add a new page, choose a page template from the Create Page pop-up menu in the section where you want to add a new page.

Editing Course Pages

If you are logged in as the iTunes U site administrator (or another user with editing access), you can click Edit Page in the Course page you want to update to customize your iTunes U site. When you're done editing the page, click End Editing.

To edit this element	Take this action
Course image	<p>Click the Up Arrow button (⬆) in the upper-left corner of the course image, and then select a new course image for your Course page.</p> <p>iTunes U uses the image you select as the main image in the Course page. iTunes U also automatically creates a scaled down version of the image to display as a thumbnail in the pages used to navigate to the course.</p>
Course page title	<p>Click Edit Page in the Welcome page used to navigate to the course, click the Pencil button (✎) under the page title you want to update, edit the page title, and then click the Checkmark button (✓) to save the new title.</p>
Course page instructor name	<p>Click the Pencil button (✎) and edit the Course page instructor name, and then click the Checkmark button (✓) to save the new name.</p>
Course page description	<p>Click the Pencil button (✎) and edit the Course page description, and then click the Checkmark button (✓) to save the new description.</p>
Links box title	<p>Click the Pencil button (✎) in the Links box title bar, edit the existing Links box title text, and then click the Checkmark button (✓) to save the new title.</p>

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To edit this element	Take this action
Links box links	<p>Click the Pencil button () in the Links box next to the link you want to edit, edit the existing link's title and URL, and then click the Checkmark button () to save the link information.</p> <p>Notes:</p> <ul style="list-style-type: none"> To move a link up or down one level in the Links box, click the Pencil button () for the link you want to move, and then click the Up Triangle button () or Down Triangle button () To delete a link in the Links box, click the Pencil button () for the link you want to delete, and then click the Delete button () To add a new link to the Links box, such as to a department webpage, click the Add button () in the Links box above where you want the new link to appear, type a title and URL, and then save the new link by clicking the Checkmark button () <p>To add links between iTunes U pages and avoid a trip through the web browser, use an "itmss://" URL in the Links box. When you installed iTunes on your system, it added itself as a URL scheme handler for itmss:// URLs. When a user tries to access an itmss:// URL, if the user has not already established a session, iTunes U reroutes the user to the Site login URL.</p>
Course page group names	<p>Click the Pencil button () in the tab whose group name you want to change, edit the existing group's name, and then click the Checkmark button () to save the new group name.</p> <p>Notes:</p> <ul style="list-style-type: none"> To move a group left or right one position in the Course page, click the Left Triangle button () or Right Triangle button () To delete a group from the Course page, click the tab for the group you want to delete, and then click the Delete button () To add a new group, such as a group with permissions set to Drop Box so students can upload files for instructors to review, click the Add button () in the tab controls section, type a name for the group, choose a group type from the Type pop-up menu, and then click the Checkmark button () to save the new group. For more information on group types, see "Creating Group Types" later in this guide.
Group type	<p>Click the Pencil button () in the tab whose group type you want to change, choose a new group type from the Type pop-up menu, and then click the Checkmark button () to save the new group type.</p> <p>If you are changing from a Simple group to a Smart group or Feed group and the group contains files, you must move or delete the files before changing the group type. For more information on group types, see "Creating Group Types" later in this guide.</p>
Course page group access	<p>Click the Pencil button () in the tab whose group-level user access you want to define, and then choose the access level you want to assign to a user from the user's Access pop-up menu. For more information on group-level access, see the <i>iTunes U User's Guide</i>.</p>

Creating Group Types



You can create groups, displayed as tabs, to help organize course content. How you create content and structure a course can determine the types of groups you choose to create and therefore how iTunes U populates the groups within a Course page.

You can create the following types of groups within a Course page:

- Simple. A Simple group populates track content in a Course page when users explicitly upload tracks to the course in your iTunes U site.
- Smart. A Smart group displays tracks in a Course page by performing a real-time search of your entire site for all tracks that match the specified criteria.
- Feed. A Feed group automatically populates track content in a Course page based on the specified podcast feed URL and details. Course content can be updated on a periodic basis and, depending on your site settings, can be updated as often as every day.

Using Feed groups, your institution can host content on a local server instead of uploading content to Apple's servers, allowing the content to remain inside your institution's network. This technique offers multiple forms of distribution from a single source, allows the content to appear in iTunes U and other podcast aggregation destinations without multiple efforts, and allows your institution to provide much more content than if it was all uploaded to Apple's servers.


To create a Simple group:

- 1 Make sure you are editing a Course page (click Edit Page in the Tools area).
- 2 Click the Add button () in the tab controls section to create a new group.
- 3 Type a name for the new group.
- 4 Choose Simple from the Type pop-up menu.
- 5 Click the Checkmark button () in the tab controls section to save the new group.




A Simple group populates track content in a Course page when users explicitly upload tracks to the course in your iTunes U site.

To explicitly upload tracks to the course, click Upload Files in the Tools area of the Course page.

To create a Smart group:


- 1 Make sure you are editing a Course page (click Edit Page in the Tools area).
- 2 Click the Add button () in the tab controls section to create a new group.
- 3 Type a name for the new group.
- 4 Choose Smart from the Type pop-up menu.
- 5 Choose one of the following from the Rules pop-up menu:
 - All. Indicates you want iTunes U to combine rules and search for tracks that match all the rules you define.
 - One. Indicates you want iTunes U to search for tracks that match at least one of the rules you define.
- 6 Choose the criteria you want to search from the pop-up menu and type the text you want to match. You can choose one of the following criteria: Title, Album Name, Artist Name, Comment, Course Description, Group Name, Course Name, Information, Keywords, Description, Lyrics. For example, you can create a rule with the criteria that "Title matches physics" or "Artist Name matches John Smith."

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- 7 Click the Add button () to add more rules and combine rules to refine your query, or click the Checkmark button () to save the rule.
- 8 Click the Checkmark button () in the tab controls section to save the new group.

A Smart group displays tracks in a Course page by performing a real-time search of your entire site for all tracks that match the criteria you specify. Because iTunes U performs a real-time search, tracks displayed in a Smart group can change each time users access the group.


To create a Feed group:

- 1 Make sure you are editing a Course page (click Edit Page in the Tools area).
- 2 Click the Add button () in the tab controls section to create a new group.
- 3 Type a name for the new group.
- 4 Choose Feed from the Type pop-up menu.
- 5 Provide details about the new Feed group using the fields and options provided:
 - Feed URL. Type a Really Simple Syndication (RSS) 2.0 full podcast feed URL.

Note: To verify that an RSS podcast feed URL is unique, iTunes U checks the Globally Unique Identifier (GUI), and then checks the podcast title.
 - Security. If the podcast feed URL is protected by HTTP Basic Authentication, choose HTTP Basic Authentication from the Security pop-up menu and specify a username and password in the fields provided. iTunes U uses the credential information to authenticate both the podcast feed URL and the actual content when users attempt to download content.
 - Signature. To enable download authentication, choose Append SHA-256 Signature from the Signature pop-up menu. iTunes U appends a SHA-256 Signature to both the podcast and enclosure URLs. Specifically, iTunes U appends:
`time=${TIME}&userID=${USER_IDENTIFIER}&signature=${SIGNATURE}`,
 where:
 - `${TIME}` is the time, in seconds, when the URL was generated. Specify time as the number of seconds from the epoch (midnight January 1, 1970), normalized to GMT.
 - `${USER_IDENTIFIER}` is the unique identifier (userIdentifier) passed to iTunes U in the identity string for the user who created the Feed group.
 - `${SIGNATURE}` is the SHA-256 signature based on the string containing the first two arguments (`'time=${TIME}&userID=${USER_IDENTIFIER}'`), signed with the shared secret used in your transfer script.
 - “Check for changes.” To check the feed for updates on a daily basis, choose Daily from the “Check for changes” pop-up menu and provide an email address in “Feed owner email.” iTunes U uses the email address to report errors when the non-interactive check of the podcast feed URL fails for any reason. When these periodic checks fail ten times, iTunes U stops checking the feed and no longer updates the group content.

To manually update a podcast feed, edit the group and click Apply. iTunes U creates new tracks for new items, updates existing tracks, and deletes tracks no longer included in the podcast feed.

- Status. Displays the status of the last attempt to update the group's content from the specified podcast feed URL.














- 6 Click Apply to save changes.
 - Click Revert to revert any changes you made since the last save.
- 7 Click the Checkmark button () in the tab controls section to save the new group.

A Feed group automatically populates track content in a Course page based on the podcast feed URL and details you specify. Course content can be updated on a periodic basis and, depending on your site settings, can be updated as often as every day.

Editing Public Feature Pages

Apple creates your site's initial iTunes U Public Feature page using a predefined design and layout as a starting point. As the site administrator, you can change your Public Feature page to display your institution's specific design and information. For example, you can change the banner image, Links box text and links, number and location of Links boxes, featured content, and general feature content section information and order.

If you are logged in as the iTunes U site administrator, you can click Edit Page to edit your Public Feature page and customize your iTunes U site. When you're done editing the page, click End Editing.

To edit this element	Take this action
Banner image	Click the Up Arrow button () in the upper-left corner of the banner image, and then select a new banner image for your Public Feature page.
Links box titles	Click the Pencil button () in the Links box title bar for the Links box title you want to edit, edit the existing Links box title text, and then click the Checkmark button () to save the new title.
Section Links box	<p>Click the Pencil button () above the Section Links box to edit the Links box title, and then click the Checkmark button () to save the new title.</p> <p>Notes:</p> <ul style="list-style-type: none">• To add a new page in the Section Links box, choose From Template "Default Welcome" from the Create Page pop-up menu, specify the page title, short name, and identifier for the Welcome page, and then click the Checkmark button () to save the information.• To edit an existing page, click the Pencil button () for the page you want to edit, type a new title, short name, or identifier, and then click the Checkmark button () to save the new information.• To move a page up or down one level in the Section Links box, click the Pencil button () for the page you want to move, and then click the Up Triangle button () or Down Triangle button ()• To delete a page in the Section Links box, click the Pencil button () for the page you want to delete, and then click the Delete button ()
TOP DOWNLOADS box	<p>To hide the TOP DOWNLOADS box, click the Hide button. By default, iTunes U shows the top five downloads for your site.</p> <p>iTunes U begins collecting download data as soon as your site is active. A few days after the first track is download from your site, iTunes U has enough data to determine the most downloaded tracks and display the top tracks in the TOP DOWNLOADS box. iTunes U does not display more than one track from a single Course page. To specify how many downloads to display in the box, choose one of the following from the Display pop-up menu: 5, 10, 15, or 20.</p>

To edit this element	Take this action
Multiple Links boxes	<p>Click the Add button (⊕) above the Links box to add a new Links box below the existing Links box, and then click the Checkmark button (✓) to save the new Links box.</p> <p>Notes:</p> <ul style="list-style-type: none">• To move a Links box up or down one level in the Public Feature page, click the Pencil button (✎) for the Links box you want to move, and then click the Up Triangle button (▲) or Down Triangle button (▼).• To move a Links box right or left in the Public Feature page, click the Pencil button (✎) for the Links box you want to move, and then click the Right Triangle button (▶) or Left Triangle button (◀).• To delete a Links box, click the Pencil button (✎) for the Links box you want to delete, and then click the Delete button (⊗).
Links box links	<p>Click the Pencil button (✎) in the Links box next to the link you want to edit, edit the existing link's title and URL, and then click the Checkmark button (✓) to save the link information.</p> <p>Notes:</p> <ul style="list-style-type: none">• To move a link up or down one level in the Links box, click the Pencil button (✎) for the link you want to move, and then click the Up Triangle button (▲) or Down Triangle button (▼).• To delete a link in the Links box, click the Pencil button (✎) for the link you want to delete, and then click the Delete button (⊗).• To add a new link to the Links box, such as to a department webpage, click the Add button (⊕) in the Links box above where you want the new link to appear, type a title and URL, and then save the new link by clicking the Checkmark button (✓).• To add links between iTunes U pages and avoid a trip through the web browser, use an itmss:// URL in the Links box. When you installed iTunes on your system, it added itself as a URL scheme handler for itmss:// URLs. When a user tries to access an itmss:// URL, if the user has not already established a session, iTunes U reroutes the user to the Site login URL.
Featured Content section heading text	<p>Click the Pencil button (✎) in the section heading, edit the section heading text, and then click the Checkmark button (✓) to save the section heading.</p> <p>Notes:</p> <ul style="list-style-type: none">• To move a section up or down one level in the page, click the Up Triangle button (▲) or Down Triangle button (▼).• To delete a section, click the Delete button (⊗).• To add a new section in your Public Feature page, click the Add button (⊕). iTunes U creates a new section below the section where you clicked the Add button. Type a heading for your new section.

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To edit this element	Take this action
Featured Content section page images and information	<p>Choose one of the following options from the Sort pop-up menu in the section where you want to sort page or track images and information:</p> <ul style="list-style-type: none"> Sort Manually. When editing a page or track in a section, iTunes U displays the Left Triangle button (◀) and Right Triangle button (▶) so you can move pages or tracks manually. Sort By Title. iTunes U sorts the page and track images and information in ascending order, by title name. Sort By Last Modified Date. iTunes U sorts the page and track images and information in descending order, by the date the page or track was last modified. <p>Note: You can choose Show All or Show 3 from the pop-up menu to specify how many courses and tracks you want to display in the featured content section.</p>
Destination handle	<p>Click the Pencil button (✎) under the page or track title and details, edit the destination handle, and then click the Checkmark button (✓) to save the information.</p> <p>Notes:</p> <ul style="list-style-type: none"> To move a page or track link left or right one position in the section, click the Left Triangle button (◀) or Right Triangle button (▶). To delete a page or track link from the section, click the Delete button (🗑). To add a new page or track link to the section, choose Create Course Link or Create Track Link from the Create Page pop-up menu in the section where you want to add a new page or track link, type a destination handle for the page or track, and then click the Checkmark button (✓) to save the new page or track link. You can also copy and paste course and track URLs into the Destination Handle field to link to the course or track. For information on how to obtain a handle or URL for a specific iTunes U page, group, or track, see "Linking to iTunes U" in Chapter 2.

Defining Track Preferences

The content users upload into iTunes U can include information fields, such as Name or Artist. Information fields help instructors and students locate and organize their iTunes U content after they download it to their computers, iPod music players, iPhone, and Apple TV. For more information on these fields, see *Creating Content for iPod + iTunes* located at http://www.apple.com/support/itunes_u.

As the site administrator, you control the information field preferences for all content distributed through your institution's iTunes U site. By controlling the information field preferences, you can ensure that the fields are used consistently for all the content. For example, you can specify that the Album field always contains the course title and that the Genre field always contains the institution name. You can also specify the location where tracks are downloaded as well as a site preference to turn podcasting on and off for Course pages. You can also set up iTunes U so all content from your institution's iTunes U site appears in a playlist named for your institution.

If you use helpful and specific information, instructors and students can find the content more quickly and easily. iTunes U can display the following fields for each track:

Field	Suggested Use
Name	Track title, for example, Lecture 1 or Digital Storytelling
Album	Course title
Artist	Instructor name
Genre	Broad category, for example, by subject, organization (such as institution name), or by type (such as podcast)
Comments	Additional information, such as assignment details or upload information
Track Number	Order in which a track appears on a CD

The information for each track appears in columns within the Course page. You can change which columns iTunes U displays on your machine. Choose View > View Options and select the columns you want to appear. Information in track fields other than those listed above is saved when you upload and download a file, but iTunes U does not display the information in the Course page tracklist area.

Note: For non-encrypted PDF files, iTunes U maps PDF fields to iTunes U information fields. For example, iTunes U maps the PDF Author field to the iTunes U track Artist field and the PDF Subject field to the track Album field.

As the site administrator, you can overwrite a track's Album, Artwork, Genre, Comments, and Artist fields, giving you increased control over the information and ensuring that it is used consistently for all content in your iTunes U site. In addition, you can create a rule to download content to a specific playlist; that playlist appears in the Source list of iTunes when users download content from your iTunes U site. You can also specify whether podcasting is enabled for all Course pages.

To define track preferences:

- 1 Log in to iTunes U as the site administrator.
- 2 Click Edit Track Preferences in the Tools area.

3 Specify the rule you want to apply to all track Album information:

- Click “Use original” to continue using a track’s original Album information.
- Click “Override with” to override a track’s original Album information. You can select to override the information with the Course page and group name, only the Course page name, or type a name for the Album information (for example, the course semester and year).
- Click “If empty, use” to specify Album information for a track when none exists. You can select the Course page and group name, only the Course page name, or type a name for the Album information (for example, the course semester and year).

iTunes U applies the preference you specify to all tracks downloaded from your site. If you type a new name for the Album information, make sure you use a name that makes sense for all tracks throughout your entire iTunes U site.

4 Specify the rule you want to apply to all track Artwork information:

- Click “Use original” to continue using a track’s original Artwork information.
- Click “Override with the Course page image” to override a track’s original Artwork with the course image artwork.
- Click “If empty, use the Course page image” to specify that you want iTunes U to use the course image artwork for a track when none exists.

Note: To use specific cover artwork with an audio track, Apple recommends using the AAC file type format (.m4a).

5 Specify the rule you want to apply to all track Genre information:

- Click “Use original” to continue using a track’s original Genre information.
- Click “Override with” to override a track’s original Genre information. You can select to override the information with your institution’s site name, or type a name for the Genre information (for example, the school or college name).

iTunes U applies the preference you specify to all tracks downloaded from your site. If you type a new name for the Genre information, make sure you use a name that makes sense for all tracks throughout your entire iTunes U site.

Note: For podcasts, any Genre information you specify is changed to “Podcast” upon download.

6 Specify the rule you want to apply to all track Comment information:

- Click “Use original” to continue using a track’s original Comment information.
- Click “Override with upload information” to override a track’s original Comment information with identity, date, and time information for the user who uploaded the track.

If you override Comment data with upload information, instructors and course managers cannot use the Comments field to communicate with their students. Any comments the instructor, course manager, or student might write about content they have uploaded are overwritten with information about when the track was uploaded to iTunes U.

Note: When you send user identity information to iTunes U, if you do not include the `displayName` or `emailAddress`, selecting “Override with upload information” provides little information as iTunes U can only display date and time information for the user who uploaded the track.

Chapter 3: Customizing Your iTunes U Site**7** Specify the rule you want to apply to all track Artist information:

- Click “Use original” to continue using a track’s original Artist information.
- Click “Override with” to override a track’s original Artist information. You can select to override the information with your institution’s site name or type a name for the Artist information (for example, the instructor’s name).
- Click “If empty, use” to specify Artist information for a track when none exists. You can select your institution’s site name or type a name for the Artist information (for example, the instructor’s name).

iTunes U applies the preference you specify to all tracks downloaded from your site. If you type a new name for the Artist information, make sure you use a name that makes sense for all tracks throughout your entire iTunes U site.

8 Specify the playlist where you want iTunes U to download tracks:

- Click “A single playlist for the entire site named” to specify that you want iTunes U to create one playlist for your entire site. You can select to use your institution’s site name, or type a name for the playlist.
- Click “Individual playlists per group” to specify that you want iTunes U to create a playlist for each Course page group, using the Course page and group name for the playlist. iTunes U saves the playlists in a folder, using your institution’s site name as the folder name.
- Click “Individual playlists per group” to specify that you want iTunes U to create a playlist for each Course page group, using the Course page and group name for the playlist. iTunes U saves the playlists in a folder, using your institution’s site name as the folder name.

9 Specify whether you want to enable or disable podcasting in all Course pages. If available, users see a Subscribe button in all the Course pages in your site. Clicking Subscribe allows users to subscribe to the selected podcast and use the podcasting features in iTunes.

Podcasting provides a convenient, subscription-based model for distributing course content. Podcasting makes course content mobile and supports anywhere, anytime learning. Users can subscribe to the course or group and have the content automatically downloaded as soon as it is made available. Podcasting is most useful in courses where content is frequently added.

The podcasting feature in iTunes U was created for ease of use and therefore does not require iTunes U to re-authorize users upon each podcast download. When a user first subscribes to a course or group, iTunes U verifies that the user has access permissions to the course or group. After the initial subscription, iTunes U does not re-authorize the user to verify that the user still has permissions to view or download course content. For example, if a student enrolls in a course, clicks Subscribe, and downloads course content, the student continues to receive the podcast content even after the student drops the course or leaves your institution.

Note: When a user subscribes to a podcast, iTunes U displays all information fields (for example, Course name, Group name, Track name, and Comment) in the Description column in the Podcasts library.

- 10 Click Save to save all your track preferences.
- 11 Click Logout.

When a user downloads an object from iTunes U (for example, a track or podcast), depending on how you set up your site and define your track preferences, along with which button the user clicks, iTunes copies the object to the iTunes library, Podcasts library, or Source list, such as the institution playlist. For more details, see the following table:

When you click this button	iTunes U takes this action
Get (or Get Song or Get Movie)	Downloads the selected object into your iTunes library, as well as into your institution's playlist, if specified.
Get Track(s)	Downloads all objects in the selected Course page into your iTunes library, as well as into your institution's playlist, if specified.
Subscribe	Subscribes to the podcast and downloads the most recent episode into your iTunes Podcasts library. As new episodes become available, if you are connected to the Internet, the iTunes application automatically downloads the new episodes. Recently added episodes that have not been downloaded to iTunes appear dimmed. For more information on podcasts, see the iTunes online help.

When a user double-clicks an object to preview content, iTunes U previews the entire track, not just 30 seconds. If users have trouble previewing an object, you can check the following:

- Available bandwidth. A video might not preview due to low bandwidth, as it takes several minutes to download enough content to begin playing a few frames of the video.
- Video encoding. A video might not preview if the video was encoded in a way that requires more data to be downloaded before it can begin playing certain frames.
- Video format. A video might not preview if the video is not flattened. Flatten all movies in iTunes U using the Self Contained option in QuickTime Pro.

Note: To download or preview an object from an iTunes U page or group, users must have download access to the specific page or group.

Editing Site Settings

When Apple created your initial iTunes U site, your site settings were also defined with default values. As the site administrator, you can change these default values to use your institution's actual values, including your site name, login URL, logout message, and technical contact information.

To change your site settings:

- 1 Log in to iTunes U as the site administrator.
- 2 Click Edit Site Settings in the Tools area.
- 3 Type an official organizational name for your site. This should be your organization's full formal name. For example: Cupertino University.
- 4 Type a display name for your site. This should be a short name identifying your site to your users. For example: CU or Cupertino U. iTunes U displays this name in your site's navigation bar, institution playlists, track information fields, and so on.

- 5 Type a login URL for your site. The Site login URL specifies your institution's launch page or web authentication and authorization server and is required for users to bookmark pages, groups, and tracks.

In order to display an exact page, group, or track, you append a destination variable, `{DESTINATION}`, to the end of the Site login URL. If your transfer script is designed to accept the variable through an HTTP POST or GET request, the script can also generate a URL with the destination information and authorization token to pass to iTunes U and display a specific iTunes U page, group, or track.

The `destination={DESTINATION}` portion of the URL uses an HTTP system for passing the destination variable into your transfer script, along with the actual destination value. iTunes U does the variable substitution when it redirects a user to your Site login URL.

For example, if a Course page has an iTunes U destination value of 123456 and a user clicks a track in the Course page after a session timeout, iTunes U redirects the user to the Site login URL with the destination value appended to the end:

`https://www.example.edu/cgi-bin/itunesu?destination=123456`

If the user logs in and is re-authenticated successfully, and your transfer script is designed to handle the destination variable, iTunes U can display the exact Course page when it receives the URL from the transfer script:

`https://deimos.apple.com/WebObjects/Browse.woa/example.edu.123456`

- 6 Type a logout message for your site. iTunes U displays this message when users log out of your site. For example: "You have logged out. Enter the information requested below when you want to log in again."
- 7 Type your email address and full name, as the site administrator. iTunes U uses this contact information to notify you of administrative tasks such as scheduled maintenance, system upgrades, and site usage. If you have multiple contacts that should receive this type of information, type the primary contact's full name and a group email address.
- 8 Type an email address and full name for your site's policy contact. This contact information should be for the person responsible for making policy, legal, and marketing decisions for your iTunes U site.
- 9 Specify copyright information for your site, including a title and link to your copyright policy. iTunes U displays copyright information at the bottom of every Welcome page and Public Feature page in your site.
- 10 Click "Consider this site for inclusion within iTunes U in the iTunes Store" to specify that you want Apple to consider your institution's iTunes U site for inclusion in the iTunes U area in the iTunes Store. Apple will review your site and email the status to you, the site administrator, and your site's policy contact, if specified.
 - To withdraw your request, return to the Edit Site Settings page and click "Cancel my request for inclusion within iTunes U in the iTunes Store."
 - To remove your site after approval, return to the Edit Site Settings page, click "Remove my site from iTunes U in the iTunes Store," and type a reason in the "Provide a reason for your removal request" field.

Note: To be considered for inclusion, be sure your site design follows the guidelines outlined in *Creating Your iTunes U Site* available at http://www.apple.com/support/itunes_u.

- 11 Click Save to save all your site settings.
- 12 Click Logout.

Chapter 4

Controlling User Access

This chapter describes how you can control a user's permissions and actions to iTunes U pages and groups based on a user's credentials and the access levels you specify.

This chapter covers the following topics:

- [Understanding Credentials and User Access](#)
- [Controlling User Access to iTunes U Pages](#)
- [Using Identifier-Based Credentials](#)

Understanding Credentials and User Access

By integrating iTunes U with your existing authentication and authorization services, you validate user information and ensure secure access to your iTunes U site. Using your systems to authenticate and authorize users, you can maintain control over the access users have to every page and group within your site as well as the user information sent to iTunes U. You transfer only the user information you want to provide to iTunes U.

The user information you provide to iTunes U consists of the types of users you defined for your system, also known as user credentials. The credential information you send to iTunes U consists of the user's attributes (for example, student, instructor, administrator) and unique identifier. This information officially identifies the user and confirms the user's ability to access the iTunes U site and its individual resources. Once you have defined these credentials in your system, you must specify the exact credential strings in the iTunes U Edit Access pages and select the level of access you want to grant to each type of user. You can specify credentials at any page level in your iTunes U site and assign a different access level for every page or hierarchy of pages. The credentials you send to iTunes U, together with the access levels you define within your site, control the actions a user can perform within each iTunes U page or group.

You can create as many credentials as needed to accomplish the access you want for your site. For each credential, you can define a different access level for every page, group, or hierarchy of pages within your site. The access level you define for a credential at your site's root page is inherited throughout all descendant pages and groups in your site, unless it is explicitly overridden by a descendant page or group definition. For example, if a user has download access at your site's root Welcome page, the user automatically receives download access to the page's descendants. If a user has more than one credential per page (users can have up to 100 credentials), iTunes U grants

access to the page based on the highest level of access defined by all the user's credentials. For example, if a user has download access to a page with one credential, and Shared access to the page with another credential, the user automatically receives the higher-level Shared access to the page.

As an example, you could send iTunes U the following credential, identity, and time information for an instructor at your institution:

```
credentials=Instructor@urn:mace:example.edu:classes:fall06:eeecs302:02&identity="Jane Doe"<jdoe@example.edu>(jdoe)[528392]&time=1139331600
```

You could then define access levels for the Instructor@urn:mace:example.edu:classes:fall06:eeecs302:02&identity="Jane Doe"<jdoe@example.edu>(jdoe)[528392]&time=1139331600 credential in the Edit Access page and restrict the instructor to the specific fall06:eeecs302:02 Course page within your iTunes U site.

To get you started, iTunes U provides you with the following built-in user credentials:

- **Administrator.** iTunes U automatically provides this credential so you, the site administrator, have the most access to your iTunes U site, allowing you to create new pages, assign ownership of pages to specific instructors, and manage the iTunes U site. When editing credentials, you can only change the Group Access Label for the iTunes U built-in site administrator credential. When logging in to your site, you must pass this credential to iTunes U in your transfer script.
- **Authenticated.** iTunes U automatically provides this credential to every user transferred into iTunes U with a valid authorization token. By default, this credential has no access to iTunes U pages or groups. iTunes U determines this credential at login; do not pass this credential to iTunes U in your transfer script.
- **Unauthenticated.** iTunes U automatically provides this credential to every user transferred into iTunes U without a valid authorization token (for example, directly through a URL). By default, this credential has no access to iTunes U pages or groups. iTunes U determines this credential at login; do not pass this credential to iTunes U in your transfer script.
- **All.** iTunes U automatically provides this credential to every user transferred into iTunes U with or without a valid authorization token. By default, this credential has no access to iTunes U pages or groups. iTunes U determines this credential at login; do not pass this credential to iTunes U in your transfer script. Use All to give authenticated and unauthenticated users the same permissions with a single credential. To make content in your iTunes U site available to the public, you must update the access level for this credential.

In addition to the iTunes U built-in credentials, you can create credentials for the specific types of users accessing your site. For example, you might want to create the following types of user credentials:

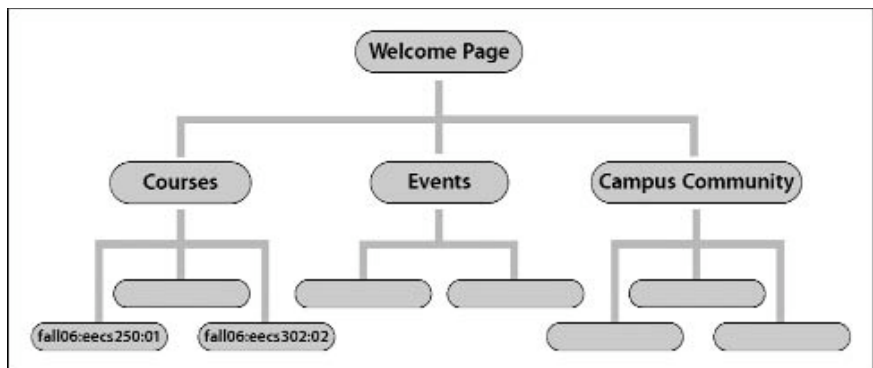
- **Instructor.** You can create an Instructor credential and specify that this user has access constrained to the classes to which the instructor is assigned, allowing the instructor ownership for the particular class and its Course page.
- **Student.** You can create a Student credential and specify that this user has the least access, constrained to the classes in which the student is registered, allowing the student access to the particular class and its Course page, with specific Course page access defined by the instructor who owns the page.

Every user who tries to access your site is assigned the All credential. In addition, users might be assigned the Authenticated or Unauthenticated credential depending on whether or not they were transferred into iTunes U with a valid authorization token.

Creating your site's user access permissions can be a lot of work. Before you begin, you should define some guidelines or strategies for making the task easier. For example, by using a unique page identifier when creating a Course page, and creating a permission for the page with a credential that includes the `#{IDENTIFIER}` variable, the Course page substitutes the provided page identifier for the `#{IDENTIFIER}` variable when performing authentication. By using page identifiers and variables when creating pages and credentials, you can reuse the credentials in multiple pages, and iTunes U makes the appropriate substitutions during authentication. For more detailed information, see ["Controlling User Access to iTunes U Pages"](#) and ["Using Identifier-Based Credentials"](#) later in this chapter.

Controlling User Access to iTunes U Pages

There are many strategies for defining the access your users can have to your site content. For example, if your site has the following structure:



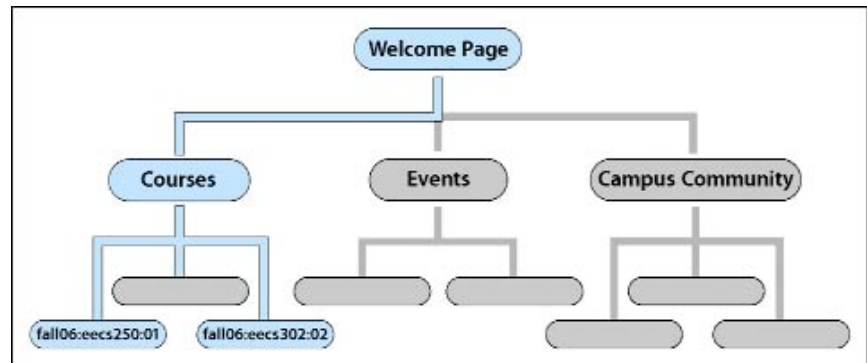
And you have an instructor and student with the following credentials:

- credentials=Instructor@urn:mace:cupertinouniversity.edu:classes:fall06:eecs302:02; Instructor@urn:mace:cupertinouniversity.edu:classes:fall06:eecs250:01;Authenticated@urn:mace:itunesu.com:sites:cupertinouniversity.edu;All@urn:mace:itunesu.com:sites:cupertinouniversity.edu
- credentials=Student@urn:mace:cupertinouniversity.edu:classes:fall06:eecs302:02;Student Body@urn:mace:cupertinouniversity.edu:example;Authenticated@urn:mace:itunesu.com:sites:cupertinouniversity.edu;All@urn:mace:itunesu.com:sites:cupertinouniversity.edu

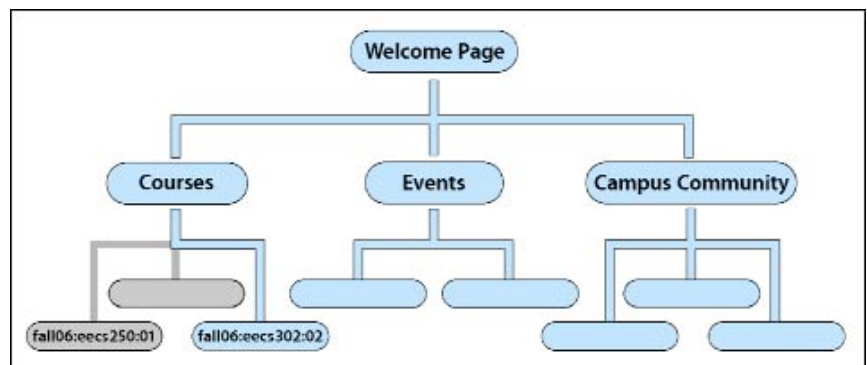
You might want to give the instructors access to edit, upload, and download to their specific Course pages and nothing else, while giving each student download only access to his or her specific Course page as well as Events and Campus Community pages. For this example, you would apply the following access levels to the credentials:

Credential	Access
Instructor	Edit at the specific Course pages.
Student	Download at the specific Course pages.
StudentBody	Download at the Events and Campus Community page level.
Authenticated	No Access at the Events and Campus Community page level and No Access at each Course page.
All	No Access at the Welcome page level.

In this example, the instructor for eecs250 and eecs302 has the following edit view of your iTunes U site:



And the eecs302 student has the following view and download access permissions to your iTunes U site:



To assign access levels and control user permissions and actions to iTunes U pages:

- 1 Log in to iTunes U as the site administrator.
- 2 Click Edit Access in the Tools area for the page where you want to define user access.
- 3 Choose the section or page where you want to define user access from the pop-up menu.

iTunes U displays the built-in and custom permissions defined for the currently selected section or page, or any of the section's or page's ancestors, along with the associated Course page Group Access Label, if applicable.

For a Course page, you define user access for the entire page. For details about how to assign access at the individual group level, see the *iTunes U User's Guide*.

Edit Access

Assign access levels to credentials to control the actions users have within your iTunes U site. The access level you define for a credential at a given page, section, or course are inherited throughout all descendant pages of your site, unless they are overridden by a descendant page definition.

Select the page or section for which you want to edit permissions

Cupertino University Page

Built-in Permissions

iTunes U provides built-in credentials. You can modify only the access level and group access label.

Access Level	Credential Definition	Group Access Label
Edit	Administrator@urn:mace:itunesu.com:sites:cupertino.cupertino.edu	
No Access	Authenticated@urn:mace:itunesu.com:sites:cupertino.cupertino.edu	
No Access	Unauthenticated@urn:mace:itunesu.com:sites:cupertino.cupertino.edu	
No Access	All@urn:mace:itunesu.com:sites:cupertino.cupertino.edu	

Custom Permissions

Customize access to your site by defining credentials and their access levels.

Access Level	Credential Definition	Group Access Label
Edit	Instructor@urn:mace:cupertino.cupertino.edu:classes:fall06:eeecs250:01	Instructor250
Edit	Instructor@urn:mace:cupertino.cupertino.edu:classes:fall06:eeecs302:02	Instructor302
Download	Student@urn:mace:cupertino.cupertino.edu:classes:fall06:eeecs302:02	Student302
Download	StudentBody@urn:mace:cupertino.cupertino.edu:example	

* Access permission inherited from a parent

?

Done



- 4 Click the Add button () to define a new permission (credential, user access level, and label).
 - Click the Pencil button () to edit an existing permission (credential, user access level, and label). When editing an existing permission, if the credential was defined in a section or page other than the current one, you can only edit the access level and Group Access Label; you cannot edit the credential definition itself.
- 5 Type a user credential. For example:
 Student@urn:mace:cupertino.cupertino.edu:classes:fall06:eeecs302:02.
 - The credential you enter must match the credential you send using your transfer script.
 - If you used a unique page identifier in your Course page Identifier field, type a reference to the identifier. For example:
 Student@urn:mace:cupertino.cupertino.edu:classes:\${IDENTIFIER}. If you do not use a unique page identifier, you must assign credential access permissions to the Course page one credential at a time. For more information, see ["Using Identifier-Based Credentials"](#) later in this chapter.
 - Each credential name you enter must be unique. If you enter a duplicate credential name, iTunes U does not save the duplicate credential.

- 6 Choose the access level you want to assign to the credential from the Access Level pop-up menu:
 - **No Access.** Credentials assigned No Access cannot see the page.
 - **Download.** Credentials assigned Download can access the page and download content from the page.
 - **Shared.** Credentials assigned Shared can access the page and upload and download content from the page.
 - **Edit.** Credentials assigned Edit can access the page and upload, download, and delete content in the page, as well as edit groups (create, delete, rename), links (create, delete, rename), images, and text information in the page. Users with Edit access to a Course page can also use the Access pop-up menu in the Access area within a Course page to define group-level access for the page. The user can assign group-level access for other users of the Course page, but cannot change his or her own access. iTunes U displays the current user's credential and Edit access as read-only in the Access pop-up menu within the Course page.

The access level you select determines the permissions and actions a user can perform in any specific iTunes U page, including whether they can even view the page.

- 7 Type a label for the credential in the Group Access Label field.

When you edit a Course page and assign access per group, iTunes U displays this label in the Access pop-up menu in the Access area within the Course page. If you do not specify a label, you cannot assign group-level access for the credential.

- 8 Click the Checkmark button () to save the credential, access level, and label information.
 - Click the Delete button () to delete the selected credential, access level, and label information.
- 9 Repeat steps 4 through 8 for each credential you want to assign access permissions.
- 10 Click Done.
- 11 Click Logout.

The access level you define for a credential in a Welcome page, Public Feature page, or Course page is inherited throughout all descendant pages and groups within your site, unless the access level is explicitly overridden by a descendant page or group definition. For example, if you explicitly define credential access in a Course page group, and then update access for that credential in the parent Course page, iTunes U does not change the group-level access for the credential. For more information on group-level access, see the *iTunes U User's Guide*.

User Access in a Public iTunes U Site

If you have information you want to make available to the general public, without requiring the use of a transfer script, you can create a public site.


To make content in your iTunes U site available to the public, you must update the access level for your site's All@urn:mace:itunesu.com:sites:yoursitedomain.edu credential. In the Edit Access page, in the Built-in Permissions section, edit the All@urn:mace:itunesu.com:sites:yoursitedomain.edu access permission and choose Download from the Access Level pop-up menu. Public visitors can now access content in your iTunes U site. A transfer script is not required for visitors to see your public content. Visitors can enter your site using a URL such as:
<http://deimos.apple.com/WebObjects/Core.woa/Browsev2/your-domain-name.edu>.

Using Identifier-Based Credentials

If your iTunes U site is complex and contains many pages with access restricted by very similar credential structures, you can use unique page identifiers to make the administration of these pages and credentials easier.


By defining page identifiers throughout your site, you guarantee uniqueness across all pages in your site. You can then create a permission associated with each page with a credential string that includes the `${IDENTIFIER}` variable and have iTunes U dynamically generate the credentials, substituting the provided page identifier for the `${IDENTIFIER}` variable when performing authentication. By using page identifiers and variables when creating pages and credentials, you can create more generic credentials, reuse the credentials in multiple pages, and have iTunes U make the appropriate substitutions during authentication.

To create identifier-based credentials, using the course examples from earlier in this chapter:

- 1 Log in to iTunes U as the site administrator.
- 2 Click Edit Access in the Tools area for the page where you want to define user access.
- 3 Choose your site name from the pop-up menu.
- 4 Click the Add button () to define a new credential, user access level, and label.
- 5 Type the following user credential:

`Instructor@urn:mace:cupertinouniversity.edu:classes:${IDENTIFIER}`

where `${IDENTIFIER}` specifies that this is an identifier-based credential.

- 6 Choose the access level you want to assign to the credential from the Access Level pop-up menu: No Access, Download, Shared, or Edit.
- 7 Type a label for the credential in the Group Access Label field.
- 8 Click the Checkmark button () to save the credential, access level, and label information.




iTunes U creates the instructor credential with the specified access level and label information.

- 9 Repeat steps 4 through 8 for the following credential:

`Student@urn:mace:cupertinouniversity.edu:classes:${IDENTIFIER}`

iTunes U creates the student credential with the specified access level and label information.

Since you used the `${IDENTIFIER}` variable when you created the credentials, you can reuse the credentials in multiple pages. For the credentials you created, your Edit Access page looks like the following:

Custom Permissions Customize access to your site by defining credentials and their access levels.		
Access Level	Credential Definition	Group Access Label
 Edit	<code>Instructor@urn:mace:cupertinouniversity.edu:classes:\${IDENTIFIER}</code>	Instructor302
 Download	<code>Student@urn:mace:cupertinouniversity.edu:classes:\${IDENTIFIER}</code>	Student302
 Download	<code>StudentBody@urn:mace:cupertinouniversity.edu:example</code>	

- 10 Click Done.
- 11 Click Logout.

To start using the new identifier-based credentials, create a new page (or edit an existing page) and configure it to use the `${IDENTIFIER}` variable by specifying a unique page identifier in the Identifier field. For information on how to create a page using a unique identifier, see [“Creating Welcome and Course Pages”](#) in Chapter 3.

In this example, even though you did not specifically create the `Instructor@urn:mace:cupertinouniversity.edu:classes:fall06:eeecs302:02` or `Student@urn:mace:cupertinouniversity.edu:classes:fall06:eeecs302:02` credentials to the Fall 06 EECS 302 Course page, you can access the page using the identifier-based credentials because iTunes U automatically substitutes `fall06:eeecs302:02` for the `${IDENTIFIER}` variable when a user with these credentials accesses your iTunes U site.

Using this method you can create many pages and never have to create any additional credentials. The only requirements are that the pages have a unique identifier and that this identifier is passed into iTunes U as part of the user's credentials.

Note: When using unique page identifiers in your iTunes U site, because of how identifier-based credentials work, by default iTunes U sets access for the `Authenticated@urn:mace:itunesu.com:sites:example.edu` credential to Download on your site's root Welcome page. Therefore, you must reset the permissions for the `Authenticated@urn:mace:itunesu.com:sites:example.edu` credential to No Access to prevent authenticated users from accessing restricted areas of your site.

Chapter 5

Adding Content to Your iTunes U Site

This chapter describes how you can share files by adding content to your site. You can use iTunes U to share almost any kind of file. However, iTunes, which displays the iTunes U pages, is designed primarily for audio and video files. Therefore, audio and video file types have importance within iTunes U because the software is designed to work in conjunction with iTunes and iPod.

It is recommended that your audio files be in AAC or MP3 format with the appropriate file extension (.m4a or .mp3) and your video files be in MPEG-4 format with H.264 compression and with the appropriate file extension (.mp4, .m4v, or .mov). For more information, see [“Supported Formats”](#) in Chapter 1.

This chapter covers the following topics:

- [Uploading Content Manually](#)
- [Uploading Content Using iTunes U Web Services](#)

Note: Internet Explorer on Windows may have performance limitations when uploading files. For more information, see the Microsoft Help and Support Site at <http://support.microsoft.com/default.aspx?scid=kb;en-us;329781>.

Uploading Content Manually

To manually add content to your iTunes U site:

- 1 Log in to iTunes U as the site administrator (or another user with upload permissions).
- 2 Navigate to the Course page where you want to add content.
- 3 Click Upload Files in the Tools area.

iTunes U displays the Upload and Manage Files webpage where you can select the tracks to upload as well as the location where you want to upload the tracks.

- 4 Click a tab to indicate the group where you want to upload tracks.

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- 5 Click Add Track(s), and then click Choose File and select the track you want to add.

iTunes U displays a status indicator and begins uploading the track you selected. To cancel the upload, click the Cancel button (✕).

- Repeat this step for each track you want to add to the group.
- Depending on the browser you are using, you may, for example, click Browse instead of Choose File to select the track you want to add.

- 6 Repeat steps 4 and 5 for each group in the selected Course page.

- 7 Move, reorder, update, or delete tracks you previously added:

- To move a track to another group, click the tab for the group where the track currently exists, select the track, and then choose the destination from the Move Selected Tracks To pop-up menu. To delete a file, choose Trash from the Move Selected Tracks To pop-up menu. For details on how to permanently delete the file, see the bullet below.
- To reorder tracks within a group, click the tab for the group where you want to reorder tracks, select a track, and then click the Up Triangle button (▲) or Down Triangle button (▼) to move the track up or down one position in the list.
- To update a track, click the tab for the group where the track currently exists, click Replace File in the File column for the track you want to change, click Choose File in the File column, and then select the new file. iTunes U displays a status indicator and begins uploading the file you selected. To cancel the upload, click the Cancel button (✕).
- To delete a track, click the tab for the group where the track currently exists, select the track, and then choose Trash from the Move Selected Tracks To pop-up menu. iTunes U moves the track to the Trash. The track stays in the Trash until you click the Trash tab and click Empty Trash to permanently delete the track. When you click Empty Trash, iTunes U deletes all tracks in the Trash, whether the tracks are selected or not. A Trash group exists for every Course page but is only visible within the Course page while in edit mode.

- 8 Click Return to iTunes.

iTunes U displays the new content in the Course page groups and updates track or podcast information (for example, the number of tracks per group) and controls.

- 9 Click Logout.

Notes:

- iTunes U only accepts files for upload that are less than 500 megabytes (MB).
- After a file is uploaded, only you as the site administrator (or another user with editing access) can move, reorder, update, or delete the file.

Uploading Content Using iTunes U Web Services

As the site administrator, you can use the content upload Web Service to write a program to automate the upload process. You can use this feature to, for example, support an automated lecture recording system.

To use the content upload Web Service, you must update your existing transfer script to return just the authorization token instead of redirecting to a URL. To do this, you can either create a new script or pass an argument to your existing script.

To automatically add content to your iTunes U site using your new or updated transfer script, your upload program must:

- 1 Request an authorization token from your new or updated transfer script. This is the same authorization token used for transferring authorization data to iTunes U as described in [“Transferring Authorization Data to iTunes U”](#) in Chapter 2. For example:

```
credentials=foo&identity=user&time=123456&signature=abc123abc123
```

To request the authorization token using plug-and-play, modify the iTunes U sample code provided at http://www.apple.com/support/itunes_u to return just the authorization token instead of the entire URL. Remember to send identity and password information so your institution's system can authenticate and authorize the request.

- 2 Request an upload URL from iTunes U by sending the authorization token from step 1 as an HTTP POST or GET to the following URL:

```
https://deimos.apple.com/WebObjects/Core.woa/API/GetUploadURL/example.edu.1.2.3?<value of authorization token>
```

The text `example.edu.1.2.3` is the iTunes U destination value for the group (folder destination on the iTunes U site) where you want to upload the content. For information on how to obtain the iTunes U destination value for a group, see [“Linking to iTunes U”](#) in Chapter 2.

The finished URL as a GET becomes the following:

```
https://deimos.apple.com/WebObjects/Core.woa/API/GetUploadURL/example.edu.1.2.3?credentials=foo&identity=user&time=123456&signature=abc123abc123
```

An HTTP POST or GET performed on the finished URL returns another URL.

For an example of how to implement this using a UNIX utility curl script, type:

```
/usr/bin/curl https://deimos.apple.com/WebObjects/Core.woa/API/GetUploadURL/example.edu.1.2.3?credentials=foo&identity=user&time=123456&signature=abc123abc123
```

- 3 Upload your content to iTunes U as an HTTP file-upload POST argument to the final URL created in step 2.

For an example of how to implement this, using the same UNIX utility curl script example and a content file named “file,” type:

```
/usr/bin/curl -F file=@/path/to/file.m4a <url from step 2>
```

iTunes U uploads your content and returns the handle for the uploaded file.

For information on organizing and preparing content before adding it to your iTunes U site, see *Creating Content for iPod + iTunes* located at http://www.apple.com/support/itunes_u.

Note: If your session timeout (30 minutes by default) is less than or equal to your upload timeout (60 minutes by default), iTunes U waits to start counting down your session timeout until it has successfully uploaded your content. If your session timeout is greater than or equal to your upload timeout, iTunes U starts counting down your session timeout immediately, uploads your content, and allows you to browse iTunes U until your session times out.

Chapter 6

iTunes U Web Services

This chapter describes iTunes U Web Services and how you can use the Web Services to extend and automate many of your administrative tasks, including viewing and modifying data in your iTunes U site.

This chapter covers the following topics:

- [What Is iTunes U Web Services?](#)
- [Uploading Your Document to iTunes U](#)
- [Creating an iTunes U Web Services Document](#)
- [Requesting Daily iTunes U Log Reports](#)

What Is iTunes U Web Services?

iTunes U Web Services consist of a set of operations defined and described using XML. You can interact with the Web Services using your existing services or by creating new tools, scripts, or applications. You can use your services, tools, scripts, or applications to remotely call iTunes U Web Services and automate many of your administrative tasks.

When you create a tool, script, or application to interact with the Web Services, you specify specific iTunes U operations, entities, and instructions describing to the iTunes U server how you want to view or modify the structure and data contained within your iTunes U site.

The following is an illustration of the iTunes U Web Services document syntax you can use with the tool, script, or application you create:

```
<?xml version="1.0" encoding="UTF-8"?>
<ITunesUDocument>
  <Version>1.0.1</Version>
  <Operation>
    <entity>...</entity>
  </Operation>
  <Operation>
    <entity>...</entity>
  </Operation>
  <Operation>
    <entity>...</entity>
  </Operation>
</ITunesUDocument>
```

Before you create a tool, script, or application, make sure you understand how to upload documents and content to your iTunes U site. For more information, see [“Uploading Your Document to iTunes U”](#) later in this chapter.

iTunes U provides an XML Schema Definition (XSD) for Web Services. Request and response definitions are available at:

<http://deimos.apple.com/iTunesURequest-1.0.1.xsd>

<http://deimos.apple.com/iTunesUResponse-1.0.1.xsd>

An XSD is similar to a Document Type Definition (DTD) in purpose and is used to describe the elements, attributes, and constraints of an XML document.

Currently, iTunes U does not require that you conform to the XSD. The XSD is provided as a standards-based description of the structure of the available requests and responses in iTunes U Web Services transactions. When you include the version tag in your document, iTunes U returns a response XSD conforming to the specified version.

Uploading Your Document to iTunes U

As the site administrator, you create an iTunes U Web Services document and then upload the document to the iTunes U servers. iTunes U Web Services executes all operations in the `ITunesUDocument` file in order and adds, deletes, updates, or merges the data contained in your site.

To use the Web Services and upload your document to iTunes U, you must update your existing transfer script to optionally return just the authorization token instead of redirecting to a URL. To do this, you can either create a new script or pass an argument to your existing script.

To upload your document to an iTunes U server:

- 1 Request an authorization token from your new or updated transfer script. For details, see [“Uploading Content Using iTunes U Web Services”](#) in Chapter 5.
- 2 Request an upload URL from iTunes U, using the authorization token from step 1. For example, type:

```
/usr/bin/curl https://deimos.apple.com/WebObjects/Core.woa/API/GetUploadURL/  
example.edu.1.2.3?credentials=foo&identity=user&time=123456&signature=abc123ab  
c123&type=XMLControlFile
```

The text `example.edu.1.2.3` is the iTunes U value for the folder destination on the iTunes U site where you want to upload the document. It is recommended that you use the root folder of your site as the destination. An HTTP POST or GET performed on the finished URL returns another URL.

- 3 Upload your document to iTunes U as an HTTP file-upload POST to the final URL created in step 2.

Make sure your HTTP request contains a multipart/form-data content type and that the name of the MIME part representing the XML is “file.” For more information, see RFC 1867 - Form-based File Upload in HTML at <http://www.faqs.org/rfcs/rfc1867.html>.

For example, type:

```
/usr/bin/curl -F file=@/path_to_file.xml -s <url from step 2>
```

iTunes U parses and executes the commands in your document.

Be sure step 3 follows immediately after step 2. For security reasons, the URL returned in step 2 is only valid for 90 seconds. After 90 seconds, step 3 fails.

Note: The credentials you send along with your iTunes U Web Services document officially identify the user and confirm the user's specific access permissions to the iTunes U site, along with the actions the user can perform within any specific section in the site. To use iTunes U Web Services, you must have Shared or Edit access to your iTunes U site. For more information on credentials and access, see [Chapter 4, "Controlling User Access."](#) For information on authorization tokens and credentials, see ["Transferring Authorization Data to iTunes U"](#) in Chapter 2.

iTunes U also provides a two-step process for uploading your document, using the raw XML data and the ProcessWebServicesDocument operation:

- 1 Request an authorization token from your new or updated transfer script. For details, see ["Uploading Content Using iTunes U Web Services"](#) in Chapter 5.
- 2 Invoke a POST of the raw XML data, using the authorization token from step 1, to the ProcessWebServicesDocument operation.

For example, type:

```
/usr/bin/curl --data-binary @/path_to_file.xml -s <url from step 2>
```

A ProcessWebServicesDocument request might look like the following:

```
(echo -n 'url=' && echo -n ` /usr/bin/curl -s  
'https://deimos.apple.com/WebObjects/Core.woa/API/ProcessWebServicesDocument/e  
xample.edu.1.2.3?credentials=foo&identity=user&time=123456&signature=abc123abc  
123&type=XMLControlFile` ) | curl -F  
file=@/Users/yourshortusername/SampleXML/yourXMLOperationFile.xml
```

Creating an iTunes U Web Services Document

When you create an iTunes U Web Services document, you specify specific iTunes U operations, entities, and instructions describing to the iTunes U servers how you want to view or modify the structure and data contained in your iTunes U site.

All iTunes U Web Services operations, with the exception of ShowTree, fall into three categories:

- Adding an object. iTunes U adds the object and information specified in your document to your iTunes U site.
- Deleting an object. iTunes U deletes the object and information specified in your document from your iTunes U site.
- Merging an object. iTunes U recursively adds, deletes, and merges the object and information specified in your document with objects and information in your iTunes U site.

You can specify the following operations and entities:

Operation	Entity	Value (default values in bold)	Description
ShowTree	Handle KeyGroup	destination handle minimal most maximal	Displays the data in your iTunes U site.
AddCourse	ParentHandle ParentPath TemplateHandle Course	destination handle destination path handle specifying course object entities	Specifies a course you want to add to a section in your iTunes U site.
DeleteCourse	CourseHandle CoursePath	destination handle destination path	Specifies a course you want to delete from a section in your iTunes U site.

Operation	Entity	Value (default values in bold)	Description
MergeCourse	CourseHandle CoursePath MergeByHandle Course Destructive	destination handle destination path true false specifying course object entities true false	Specifies the course information you want to update in your iTunes U site. iTunes U merges the course information specified in your document with the course information in your iTunes U site.
AddGroup	ParentHandle ParentPath Group	handle path specifying group object entities	Specifies a group you want to add to a course in your iTunes U site.
DeleteGroup	GroupHandle GroupPath	handle path	Specifies a group you want to delete from a course in your iTunes U site.
MergeGroup	GroupHandle GroupPath MergeByHandle Group Destructive	handle path true false specifying group object entities true false	Specifies the group information you want to update in a course in your iTunes U site. iTunes U merges the group information specified in your document with the group information in your iTunes U site.
AddPermission	ParentHandle ParentPath Permission	handle path specifying permission object entities	Specifies a permission you want to add to a section, course, or group in your iTunes U site.
DeletePermission	ParentHandle ParentPath Credential	handle path specifying credential object entities	Specifies a credential you want to delete from a section, course, or group in your iTunes U site.
MergePermission	ParentHandle ParentPath Credential	handle path specifying permission object entities	Specifies the permission information you want to update for a section, course, or group in your iTunes U site. iTunes U merges the permission information specified in your document with the permission information in your iTunes U site.
DeleteTrack	TrackHandle	handle	Specifies a track you want to delete from your iTunes U site.
MergeTrack	TrackHandle Track	handle specifying track object entities	Specifies the track properties you want to update in your iTunes U site. iTunes U merges the track information specified in your document with the track information in your iTunes U site.
AddDivision	ParentHandle ParentPath Division	destination handle destination path specifying division object entities	Specifies a division you want to add to your iTunes U site.
DeleteDivision	DivisionHandle DivisionPath	destination handle destination path	Specifies a division you want to delete from your iTunes U site.
MergeDivision	DivisionHandle DivisionPath MergeByHandle Division Destructive	destination handle destination path true false specifying division object entities true false	Specifies the division information you want to update in your iTunes U site. iTunes U merges the division information specified in your document with the division information in your iTunes U site.
AddSection	ParentHandle ParentPath Section	destination handle destination path specifying section object entities	Specifies a section you want to add to your iTunes U site.

Operation	Entity	Value (default values in bold)	Description
DeleteSection	SectionHandle SectionPath	destination handle destination path	Specifies a section you want to delete from your iTunes U site.
MergeSection	SectionHandle SectionPath MergeByHandle Section Destructive	destination handle destination path true false specifying section object entities true false	Specifies the section information you want to update in your iTunes U site. iTunes U merges the section information specified in your document with the section information in your iTunes U site.
MergeSite	SiteHandle MergeByHandle Site Destructive	destination handle true false specifying site object entities true false	Specifies the site information you want to update in your iTunes U site. iTunes U merges the site information specified in your document with the information in your iTunes U site.

Notes:

- In order to return a timely response, iTunes U may not process all of the requests in your Web Services document. If this occurs, iTunes U returns a message with the response indicating which operations were not processed.
- Each page, each group within each page, and each track within each group in your iTunes U site has a unique handle and unique URL, making it easy for you to reference a specific iTunes U page, group, or track. For information on how to obtain a handle or URL for a specific iTunes U page, group, or track, see [“Linking to iTunes U”](#) in Chapter 2.

ShowTree

Displays the data in your iTunes U site.

You specify the following entities with the ShowTree operation:

- Handle. Specifies the handle in your iTunes U site for the page where you want iTunes U to begin displaying data. If you do not specify the Handle entity, iTunes U uses the destination string in your URL.
- KeyGroup. Specifies the level of detail you want iTunes U to return from your site. If you do not specify the KeyGroup entity, iTunes U uses Most. You can specify one of the following values:
 - Minimal. Displays the overall hierarchical structure of your iTunes U site. You can specify this entity value to obtain handle and hierarchical information and names within your site's structure, without specific structure details.
 - Most. Displays iTunes U site information in more detail than the Minimal level, but in a more readable format than the Maximal level.
 - Maximal. Displays the maximum level of information for your iTunes U site. You can specify this entity value to obtain the maximum level of detail about your site and save the information for later use. Currently there is no way to restore your site using the information provided with the Maximal value.

The following is an example of an iTunes U Web Services document using ShowTree:

```
<?xml version="1.0" encoding="UTF-8"?>
<ITunesUDocument>
  <Version>1.0.1</Version>
  <ShowTree>
    <Handle>27361720</Handle>
    <KeyGroup>maximal</KeyGroup>
  </ShowTree>
</ITunesUDocument>
```

For this example, when you upload the document, iTunes U displays your entire iTunes U site.

Only send one ShowTree request per iTunes U Web Services document. If you send more than one, iTunes U ignores the other requests.

Tip: To accomplish the same task in a single step, without creating and uploading an iTunes U Web Services document, you can invoke the ShowTree operation directly by performing a GET request. Use the destination string in your URL to specify the root handle of your site, and use the default Most KeyGroup level of detail. For example, type:

```
curl 'https://deimos.apple.com/WebObjects/Core.woa/API/ShowTree/example.edu?
credentials=40004001.40004002.5b.5c.5e&identity=&time=1159908125&signature=&x=
true'
```

The following is an example of the output iTunes U returns from a ShowTree operation. The output displays an iTunes U site hierarchy as XML. The XML output is representative of the XML you can use later to modify the structure and data contained in the site, including additional informational elements.

```
<?xml version="1.0" encoding="UTF-8"?>
<ITunesUResponse>
  <Version>1.0.1</Version>
  <Site>
    <Name>adc.education.apple.com</Name>
    <Handle>27361720</Handle>
    <AllowSubscription>true</AllowSubscription>
    <Permission>
      <Credential>Authenticated@urn:mace:itunesu.com:sites:adc.education.apple.
com</Credential>
      <Access>Download</Access>
    </Permission>
    <Permission>
      <Credential>Administrator@urn:mace:itunesu.com:sites:adc.education.apple.
com</Credential>
      <Access>Edit</Access>
    </Permission>
    <Permission>
      <Credential>All@urn:mace:itunesu.com:sites:adc.education.apple.com</
Credential>
      <Access>No Access</Access>
    </Permission>
    <Permission>
      <Credential>Unauthenticated@urn:mace:itunesu.com:sites:adc.education.
apple.com</Credential>
      <Access>No Access</Access>
    </Permission>
    <Permission>
      <Credential>Role@urn:mace:itunesu.com</Credential>
      <Access>No Access</Access>
    </Permission>
    <Section>
      <Name>Courses</Name>
```

```
<Handle>27362003</Handle>
<Course>
  <Name>ENG 350: Love and Despair in Poetry</Name>
  <Handle>27362036</Handle>
  <Instructor>Instructor: Jane Doe</Instructor>
  <Description>Explore the depths of human emotion through the power of
  verse.</Description>
  <Permission>
    <Credential>Unauthenticated@urn:mace:itunesu.com:sites:adc.education.
    apple.com</Credential>
    <Access>No Access</Access>
  </Permission>
  <Trash>
    <Name>Trash</Name>
    <Handle>1211646326</Handle>
  </Trash>
  <Group>
    <Name>Love</Name>
    <Handle>1250607352</Handle>
    <Track>
      <Name>Sonnet 55</Name>
      <Handle>1250054257</Handle>
      <Kind>song</Kind>
      <TrackNumber>0</TrackNumber>
      <DiscNumber>1</DiscNumber>
      <DurationMilliseconds>75000</DurationMilliseconds>
      <AlbumName>LiteralSystems.com Audio Books</AlbumName>
      <ArtistName>William Shakespeare</ArtistName>
      <Comment>LiteralSystems.com (c) 2004. Licensed to the public under
      http://creativecommons.org/licenses/by-nd-nc/1.0/&#x0D;</Comment>
      <DownloadURL>https://deimos.apple.com/WebObjects/Core.woa/Download
      Track/adc.education.apple.com.27362036.01250607352.1250054257
      </DownloadURL>
    </Track>
    <Track>
      <Name>Sonnet 106</Name>
      <Handle>1249447970</Handle>
      <Kind>song</Kind>
      <TrackNumber>0</TrackNumber>
      <DiscNumber>1</DiscNumber>
      <DurationMilliseconds>72000</DurationMilliseconds>
      <AlbumName>LiteralSystems.com Audio Books</AlbumName>
      <ArtistName>William Shakespeare</ArtistName>
      <Comment>LiteralSystems.com (c) 2004. Licensed to the public under
      http://creativecommons.org/licenses/by-nd-nc/1.0/&#x0D;</Comment>
      <DownloadURL>https://deimos.apple.com/WebObjects/Core.woa/
      DownloadTrack/adc.education.apple.com.27362036.01250607352.12494
      47970</DownloadURL>
    </Track>
  </Group>
  <Group>
    <Name>Despair</Name>
    <Handle>28051011</Handle>
    <Permission>
      <Credential>Student@urn:mace:itunesu.com:sites:adc.education.
      apple.com</Credential>
      <Access>Download</Access>
    </Permission>
    <Track>
      <Name>Alone</Name>
      <Handle>28182070</Handle>
      <Kind>song</Kind>
      <DiscNumber>1</DiscNumber>
      <DurationMilliseconds>98000</DurationMilliseconds>
      <AlbumName>LiteralSystems.com Audio Books</AlbumName>
      <ArtistName>Edgar Allan Poe</ArtistName>
```

```
<DownloadURL>https://deimos.apple.com/WebObjects/Core.woa/Download
Track/adc.education.apple.com.27362036.028051011.28182070</
DownloadURL>
</Track>
<Track>
  <Name>Sonnet 40</Name>
  <Handle>28182060</Handle>
  <Kind>song</Kind>
  <DiscNumber>1</DiscNumber>
  <DurationMilliseconds>66000</DurationMilliseconds>
  <AlbumName>LiteralSystems.com Audio Books</AlbumName>
  <ArtistName>William Shakespeare</ArtistName>
  <DownloadURL>https://deimos.apple.com/WebObjects/Core.woa/Download
Track/adc.education.apple.com.27362036.028051011.28182060</
DownloadURL>
</Track>
</Group>
<Group>
  <Name>Drop Box</Name>
  <Handle>28411837</Handle>
  <Permission>
    <Credential>Student@urn:mace:itunesu.com:sites:adc.education.
apple.com</Credential>
    <Access>Shared</Access>
  </Permission>
  <Track>
    <Name>Ch13_IPod</Name>
    <Handle>1246841721</Handle>
    <Kind>feature-movie</Kind>
    <TrackNumber>0</TrackNumber>
    <DiscNumber>1</DiscNumber>
    <DurationMilliseconds>2260000</DurationMilliseconds>
    <Comment> </Comment>
    <DownloadURL>https://deimos.apple.com/WebObjects/Core.woa/Download
Track/adc.education.apple.com.27362036.028411837.1246841721
    </DownloadURL>
  </Track>
</Group>
</Course>
<Course>
  <Name>SCI 450: Computational Biology</Name>
  <Handle>27362054</Handle>
  <Instructor>Dr. Michael B. Gonzales</Instructor>
  <Description>The core focus of this course is on the computational
tools used by scientists. Covered topics will include a survey of the
tools, databases and algorithms available for studying subjects such as
how protein structure determines function and how these structures can
be used as a model to identify/design ligands to modulate that
function.</Description>
  <Trash>
    <Name>Trash</Name>
    <Handle>1130286495</Handle>
  </Trash>
  <Group>
    <Name>Videos</Name>
    <Handle>27656238</Handle>
    <Track>
      <Name>Comparison of Meiosis and Mitosis</Name>
      <Handle>27656256</Handle>
      <Kind>feature-movie</Kind>
      <DiscNumber>1</DiscNumber>
      <DurationMilliseconds>69000</DurationMilliseconds>
      <AlbumName>Chapter 4</AlbumName>
      <ArtistName>Ken Saladin</ArtistName>
      <DownloadURL>https://deimos.apple.com/WebObjects/Core.woa/Download
Track/adc.education.apple.com.27362054.027656238.27656256</
DownloadURL>
```

```
</Track>
<Track>
  <Name>Membrane-Bound Receptors that Activate G Proteins</Name>
  <Handle>27656258</Handle>
  <Kind>feature-movie</Kind>
  <DiscNumber>1</DiscNumber>
  <DurationMilliseconds>74000</DurationMilliseconds>
  <AlbumName>Chapter 12</AlbumName>
  <ArtistName>Ken Saladin</ArtistName>
  <DownloadURL>https://deimos.apple.com/WebObjects/Core.woa/Download
Track/adc.education.apple.com.27362054.027656238.27656258
</DownloadURL>
</Track>
</Group>
<Group>
  <Name>Presentation</Name>
  <Handle>27073377</Handle>
  <Track>
    <Name>informatics101</Name>
    <Handle>27656262</Handle>
    <Kind>pdf</Kind>
    <DiscNumber>1</DiscNumber>
    <DurationMilliseconds>3000</DurationMilliseconds>
    <DownloadURL>https://deimos.apple.com/WebObjects/Core.woa/Download
Track/adc.education.apple.com.27362054.027073377.27656262
    </DownloadURL>
  </Track>
</Group>
</Course>
<Course>
  <Name>econ14</Name>
  <Handle>1194983850</Handle>
  <Identifier>econ101:sec4</Identifier>
  <ShortName>Economics 14</ShortName>
  <Permission>
    <Credential>Authenticated@urn:mace:itunesu.com:sites:adc.education.
apple.com</Credential>
    <Access>No Access</Access>
  </Permission>
  <Group>
    <Name>Audio</Name>
    <Handle>1194983859</Handle>
  </Group>
  <Group>
    <Name>Video</Name>
    <Handle>1194983860</Handle>
  </Group>
</Course>
</Section>
<Templates>
  <Name>Templates</Name>
  <Handle>1137492150</Handle>
  <Course>
    <Name>Standard Course</Name>
    <Handle>1194148486</Handle>
    <ShortName>Standard Course</ShortName>
    <Permission>
      <Credential>Authenticated@urn:mace:itunesu.com:sites:adc.education.
apple.com</Credential>
      <Access>No Access</Access>
    </Permission>
    <Group>
      <Name>Audio</Name>
      <Handle>1194148489</Handle>
    </Group>
  </Course>
</Templates>
```

```
<Name>Video</Name>
<Handle>1194148490</Handle>
</Group>
</Course>
</Templates>
</Site>
</ITunesUResponse>
```

AddCourse

Specifies a course you want to add to a section in your iTunes U site.

You specify the following entities with the AddCourse operation:

- **ParentHandle.** Specifies the handle for a section in your iTunes U site where you want to add a course. The parent handle must correspond to an object to which you can add a Course page in your iTunes U site. For example, currently you can only add a Course page to a section. If you do not specify the ParentHandle entity, iTunes U uses the destination string in your URL.
- **ParentPath.** Specifies the path for a section in your iTunes U site where you want to add a course. The parent path must correspond to an object to which you can add a Course page in your iTunes U site. For example, currently you can only add a Course page to a section. If you do not specify the ParentPath entity, iTunes U uses the destination string in your URL. The ParentPath entity must be in the form "a/b/c" where a, b, and c are folder names. For example, if you have a site named "CupertinoU" containing a section named "Humanities," you can refer to the ParentPath as `<ParentPath>CupertinoU/Humanities</ParentPath>` in your AddCourse operation. If specifying the root path, you must start the ParentPath entity with a leading slash (/). To specify a slash (/) as a character within a node of the slash-delimited path, escape the character with a second slash (/).
- **TemplateHandle.** Specifies the handle of the template you want to use when adding the course. The template handle can correspond to a template or Course page object in your iTunes U site. iTunes U uses the template you specify to provide default values for entities not provided within the Course entity. For example, if you do not specify a course Name entity, iTunes U uses the Name in the specified template.
- **Course.** Specifies the entities for the course attributes you want to add, including course Name, ShortName, Identifier, Instructor, and Description. iTunes U adds the new course to the end of the existing courses in the destination section. The Web Services course Name entity corresponds to the course Title in your iTunes U site.

Notes:

- Specify simple text string values for the Name, ShortName, Identifier, Instructor, and Description entities.
- Specify all details for any Group (including Name) or Permission (including Credentials and Access) entities.

The following is an example of an iTunes U Web Services document using AddCourse:

```
<?xml version="1.0" encoding="UTF-8"?>
<ITunesUDocument>
  <Version>1.0.1</Version>
  <AddCourse>
    <ParentHandle>517</ParentHandle>
    <ParentPath/>
    <TemplateHandle>1073758214</TemplateHandle>
    <Course>
      <Name>COMM 410: Digital Storytelling</Name>
      <ShortName>Digital Storytelling</ShortName>
```

```
<Identifier>COMM410</Identifier>
<Instructor>Marco Torres</Instructor>
<Description>Learn the process of storyboarding, production, and
editing to communicate effectively in various digital
mediums.</Description>
<Group>
  <Name>Video</Name>
  <Handle/>
  <Track>
    <Name/>
    <Handle/>
    <Kind/>
    <DiscNumber/>
    <DurationMilliseconds/>
    <AlbumName/>
    <ArtistName/>
    <DownloadURL/>
  </Track>
  <Permission>
    <Credential>Administrator@urn:mace:itunesu.com:sites:
adc.education.apple.com</Credential>
    <Access>Edit</Access>
  </Permission>
</Group>
</Course>
</AddCourse>
</ITunesUDocument>
```

DeleteCourse

Specifies a course you want to delete from a section in your iTunes U site.

You specify the following entities with the DeleteCourse operation:

- **CourseHandle.** Specifies the handle in your iTunes U site for the course you want to delete. The course handle must correspond to a Course page object in your iTunes U site. If the handle does not match an existing object, iTunes U returns an error message. If you do not specify the CourseHandle entity, iTunes U uses the destination string in your URL.
- **CoursePath.** Specifies the path in your iTunes U site for the course you want to delete. The course path must correspond to a Course page object in your iTunes U site. If the path does not match an existing object, iTunes U returns an error message. If you do not specify the CoursePath entity, iTunes U uses the destination string in your URL. The CoursePath entity must be in the form “a/b/c” where a, b, and c are folder names. For example, if you have a site named “CupertinoU” containing a section named “Humanities” and a course in that section named “Literature,” you can refer to the CoursePath as <CoursePath>CupertinoU/Humanities/Literature</CoursePath> in your DeleteCourse operation. If specifying the root path, you must start the CoursePath entity with a leading slash (/). To specify a slash (/) as a character within a node of the slash-delimited path, escape the character with a second slash (/).

Warning: You cannot undo any changes you make using the DeleteCourse operation. Before you delete a course, you can use the ShowTree operation to obtain your site structure to help in restoring information. However, if you delete a course using DeleteCourse, there is no way to restore the actual course files.

The following is an example of an iTunes U Web Services document using DeleteCourse:

```
<?xml version="1.0" encoding="UTF-8"?>
<ITunesUDocument>
  <Version>1.0.1</Version>
  <DeleteCourse>
    <CourseHandle>1073840130</CourseHandle>
    <CoursePath></CoursePath>
  </DeleteCourse>
</ITunesUDocument>
```

MergeCourse

Specifies the course information you want to update in your iTunes U site. iTunes U merges the course information specified in your document with the course information in your iTunes U site.

When you specify this operation, iTunes U:

1. Updates existing course objects with the information you specify.
2. Creates new objects in the course for any Group or Permission entities you specify that do not already exist in the destination course, and, if the Destructive entity is set to true, deletes any existing objects in the destination course for Group or Permission entities you do not specify.
3. Merges information in the course for any Group or Permission entities you specify that already exist in the destination course.

You specify the following entities with the MergeCourse operation:

- **CourseHandle.** Specifies the handle in your iTunes U site for the course you want to update. The course handle must correspond to a Course page object in your iTunes U site. If the handle does not match an existing object, iTunes U returns an error message. If you do not specify the CourseHandle entity, iTunes U uses the destination string in your URL.
- **CoursePath.** Specifies the path in your iTunes U site for the course you want to update. The course path must correspond to a Course page object in your iTunes U site. If the path does not match an existing object, iTunes U returns an error message. If you do not specify the CoursePath entity, iTunes U uses the destination string in your URL. The CoursePath entity must be in the form "a/b/c" where a, b, and c are folder names. For example, if you have a site named "CupertinoU" containing a section named "Humanities" and a course in that section named "Literature," you can refer to the CoursePath as <CoursePath>CupertinoU/Humanities/Literature</CoursePath> in your MergeCourse operation. If specifying the root path, you must start the CoursePath entity with a leading slash (/). To specify a slash (/) as a character within a node of the slash-delimited path, escape the character with a second slash (//).
- **MergeByHandle.** Specifies whether or not you want to merge course group information using Group handles. You can specify one of the following values: true, false. By default, iTunes U merges course group information using the Name entity.

iTunes U preserves the order of objects within the Group entity. By default, when you merge a course containing Group entities, iTunes U uses the Name entity to determine how to merge and order similar Group entities in the destination course. For example, if the destination course has groups foo and bar and your XML document defines Group entities alpha, foo, beta, and bar in MergeCourse, iTunes U updates the destination course with the following groups: alpha, foo, beta, and bar. Because alpha and beta did not exist in the destination course, iTunes U creates the new groups and adds them into the course's existing groups as specified in your document. Because foo and bar already existed in the destination course, iTunes U merges the groups with existing foo and bar.

Since iTunes U uses the Name entity to determine how to merge and order Group entities, if you also want to rename a Group, set the MergeByHandle entity to true to specify that iTunes U merge the entities based on handles in your document. For example, if the specified course has groups with handles 10, 11, 12 and names foo, bar, alpha respectively, and your document defines Group entities with handles 10, 11, 13 and names beta, delta, gamma respectively, iTunes U merges the groups with handles 10 and 11, including the names, leaves 12 alone, and adds 13. Your final course has the following updated groups: 10 (beta), 11 (delta), 12 (alpha), and 13 (gamma).

- **Course.** Specifies the entities for the course attributes you are updating, including course Name, ShortName, Identifier, Instructor, and Description. By specifying this information, you can override any existing settings in the course. The Web Services course Name entity corresponds to the course Title in your iTunes U site.
- **Destructive.** Specifies whether or not you want to delete from the destination course any Group or Permission objects not specified in the Course entity. You can specify one of the following values: true, false. By default, iTunes U sets the Destructive entity to false and merges objects.

Notes:

- Specify simple text string values for the Name, ShortName, Identifier, Instructor, and Description entities.
- Specify all details for any Group (including Name) or Permission (including Credential and Access) entities.

Warning: When used with the Destructive entity, you cannot undo any changes you make using the MergeCourse operation. Be careful when using the Destructive entity. If misused, you can destroy your entire iTunes U site structure.

The following is an example of an iTunes U Web Services document using MergeCourse:

```
<?xml version="1.0" encoding="UTF-8"?>
<ITunesUDocument>
  <Version>1.0.1</Version>
  <MergeCourse>
    <CourseHandle>1073856521</CourseHandle>
    <CoursePath/>
    <MergeByHandle>true</MergeByHandle>
    <Destructive>true</Destructive>
    <Course>
      <Name>COMM 410: Digital Storytelling</Name>
      <ShortName>Digital Storytelling</ShortName>
      <Identifier>COMM410</Identifier>
      <Instructor>Marco Torres</Instructor>
      <Group>
        <Name>New Added Group</Name>
        <Handle>123456</Handle>
        <Track>
          <Name/>
          <Handle/>
          <Kind/>
          <DiscNumber/>
          <DurationMilliseconds/>
          <AlbumName/>
          <ArtistName/>
          <DownloadURL/>
        </Track>
        <Permission>
          <Credential/>
          <Access/>
        </Permission>
      </Group>
    </Course>
  </MergeCourse>
</ITunesUDocument>
```

```
        </Permission>
      </Group>
    </Course>
  </MergeCourse>
</ITunesUDocument>
```

AddGroup

Specifies a group you want to add to a course in your iTunes U site.

You specify the following entities with the AddGroup operation:

- **ParentHandle.** Specifies the handle in your iTunes U site where you want to add a group. The parent handle must correspond to a Course page object in your iTunes U site.
- **ParentPath.** Specifies the path in your iTunes U site where you want to add a group. The parent path must correspond to a Course page object in your iTunes U site. The ParentPath entity must be in the form "a/b/c" where a, b, and c are folder names. For example, if you have a site named "CupertinoU" containing a section named "Humanities" and a course in that section named "Literature," you can refer to the ParentPath as <ParentPath>CupertinoU/Humanities/Literature</ParentPath> in your AddGroup operation. If specifying the root path, you must start the ParentPath entity with a leading slash (/). To specify a slash (/) as a character within a node of the slash-delimited path, escape the character with a second slash (/).
- **Group.** Specifies the entities for the group attributes you want to add, including group Name and Permission. iTunes U adds the new group to the end of the existing groups in the destination course. Specify all details for any Group (including Name) or Permission (including Credential and Access) entities.

The following is an example of an iTunes U Web Services document using AddGroup:

```
<?xml version="1.0" encoding="UTF-8"?>
<ITunesUDocument>
  <Version>1.0.1</Version>
  <AddGroup>
    <ParentHandle>1073856521</ParentHandle>
    <ParentPath/>
    <Group>
      <Name>Background Material</Name>
      <Handle/>
      <Track>
        <Name/>
        <Handle/>
        <Kind/>
        <DiscNumber/>
        <DurationMilliseconds/>
        <AlbumName/>
        <ArtistName/>
        <DownloadURL/>
      </Track>
      <Permission>
        <Credential>Authenticated@urn:mace:itunesu.com:sites:adc.
          education.apple.com</Credential>
        <Access>Download</Access>
      </Permission>
    </Group>
  </AddGroup>
</ITunesUDocument>
```

DeleteGroup

Specifies a group you want to delete from a course in your iTunes U site.

You specify the following entities with the DeleteGroup operation:

- **GroupHandle.** Specifies the handle in your iTunes U site for the group you want to delete. The group handle must correspond to a Course page group object in your iTunes U site.
- **GroupPath.** Specifies the path in your iTunes U site for the group you want to delete. The group path must correspond to a Course page group object in your iTunes U site. The GroupPath entity must be in the form "a/b/c" where a, b, and c are folder names. For example, if you have a site named "CupertinoU" containing a section named "Humanities," a course named "Literature," and a group in that course named "Audio," you can refer to the GroupPath as `<GroupPath>CupertinoU/Humanities/Literature/Audio</GroupPath>` in your DeleteGroup operation. If specifying the root path, you must start the GroupPath entity with a leading slash (/). To specify a slash (/) as a character within a node of the slash-delimited path, escape the character with a second slash (/).

Warning: You cannot undo any changes you make using the DeleteGroup operation.

The following is an example of an iTunes U Web Services document using DeleteGroup:

```
<?xml version="1.0" encoding="UTF-8"?>
<ITunesUDocument>
  <Version>1.0.1</Version>
  <DeleteGroup>
    <GroupHandle>1074003970</GroupHandle>
    <GroupPath></GroupPath>
  </DeleteGroup>
</ITunesUDocument>
```

MergeGroup

Specifies the group information you want to update in a course in your iTunes U site. iTunes U merges the group information specified in your document with the group information in your iTunes U site.

When you specify this operation, iTunes U:

1. Updates existing group objects with the information you specify.
2. Creates new objects in the group for any entities you specify that do not already exist in the destination group, and, if the Destructive entity is set to true, deletes any existing objects in the destination group for entities you do not specify.
3. Merges information in the group for any entities you specify that already exist in the destination group.

You specify the following entities with the MergeGroup operation:

- **GroupHandle.** Specifies the handle in your iTunes U site for the group you want to update. The group handle must correspond to a Course page group object in your iTunes U site.
- **GroupPath.** Specifies the path in your iTunes U site for the group you want to update. The group path must correspond to a Course page group object in your iTunes U site. The GroupPath entity must be in the form "a/b/c" where a, b, and c are folder names. For example, if you have a site named "CupertinoU" containing a section named "Humanities," a course named "Literature," and a group in that course named "Audio," you

can refer to the GroupPath as

<GroupPath>CupertinoU/Humanities/Literature/Audio</GroupPath> in your MergeGroup operation. If specifying the root path, you must start the GroupPath entity with a leading slash (/). To specify a slash (/) as a character within a node of the slash-delimited path, escape the character with a second slash (/).

- MergeByHandle. Specifies whether or not you want to merge course group information using Group handles. You can specify one of the following values: true, false. By default, iTunes U merges course group information using the Name entity.

iTunes U preserves the order of objects within the Group entity. By default, when you merge a group, iTunes U uses the Name entity to determine how to merge and order similar objects in the destination section. You can use MergeByHandle to reorder group objects. If you also want to rename a group, set the MergeByHandle entity to true to specify that iTunes U merge the entities based on handles in your document instead of Names.

- Group. Specifies the entities for the group attributes you want to update, including the group Name and Permission. By specifying this information, you can override existing settings in the group. Specify all details for any Group (including Name) or Permission (including Credential and Access) entities.
- Destructive. Specifies whether or not you want to delete from the destination group any Track or Permission objects not specified in the Group entity. You can specify one of the following values: true, false. By default, iTunes U sets the Destructive entity to false and merges objects.

Warning: When used with the Destructive entity, you cannot undo any changes you make using the MergeGroup operation. Be careful when using the Destructive entity. If misused, you can destroy your entire iTunes U site structure.

The following is an example of an iTunes U Web Services document using MergeGroup:

```
<?xml version="1.0" encoding="UTF-8"?>
<ITunesUDocument>
  <Version>1.0.1</Version>
  <MergeGroup>
    <GroupHandle>1074003970</GroupHandle>
    <GroupPath/>
    <MergeByHandle/>
    <Destructive/>
    <Group>
      <Name>Presentations</Name>
      <Handle/>
      <Track>
        <Name/>
        <Handle/>
        <Kind/>
        <DiscNumber/>
        <DurationMilliseconds/>
        <AlbumName/>
        <ArtistName/>
        <DownloadURL/>
      </Track>
      <Permission>
        <Credential>Authenticated@urn:mace:itunesu.com:sites:adc.
          education.apple.com</Credential>
        <Access>No Access</Access>
      </Permission>
    </Group>
  </MergeGroup>
</ITunesUDocument>
```

AddPermission

Specifies a permission you want to add to a section, course, or group in your iTunes U site.

When you specify this operation, iTunes U adds the permission with the specified credential string and access level (No Access, Download, Drop Box, Shared, Edit) to your iTunes U site.

You specify the following entities with the AddPermission operation:

- **ParentHandle.** Specifies the handle in your iTunes U site where you want to add a permission. The parent handle must correspond to a section, Course page, or Course page group object in your iTunes U site.
- **ParentPath.** Specifies the path in your iTunes U site where you want to add a permission. The parent path must correspond to a section, Course page, or Course page group object in your iTunes U site. The ParentPath entity must be in the form "a/b/c" where a, b, and c are folder names. For example, if you have a site named "CupertinoU" containing a section named "Humanities," a course named "Literature," and a group in that course named "Audio," you can refer to the ParentPath as `<ParentPath>CupertinoU/Humanities/Literature/Audio</ParentPath>` in your AddPermission operation. If specifying the root path, you must start the ParentPath entity with a leading slash (/). To specify a slash (/) as a character within a node of the slash-delimited path, escape the character with a second slash (/).
- **Permission.** Specifies the entities for the permission attributes you want to add, including the Credential string and Access level.

The following is an example of an iTunes U Web Services document using AddPermission:

```
<?xml version="1.0" encoding="UTF-8"?>
<ITunesUDocument>
  <Version>1.0.1</Version>
  <AddPermission>
    <ParentHandle>1073905670</ParentHandle>
    <ParentPath></ParentPath>
    <Permission>
      <Credential>Authenticated@urn:mace:itunesu.com:sites:adc.education.
apple.com</Credential>
      <Access>Drop Box</Access>
    </Permission>
  </AddPermission>
</ITunesUDocument>
```

DeletePermission

Specifies a credential permission you want to delete from a section, course, or group in your iTunes U site.

When you specify this operation, iTunes U deletes the destination permission with the specified credential string and access level (No Access, Download, Drop Box, Shared, Edit) from your iTunes U site.

You specify the following entities with the DeletePermission operation:

- **ParentHandle.** Specifies the handle in your iTunes U site for the credential permission you want to delete. The parent handle must correspond to a section, Course page, or Course page group object in your iTunes U site.
- **ParentPath.** Specifies the path in your iTunes U site for the credential permission you want to delete. The parent path must correspond to a section, Course page, or Course page group object in your iTunes U site. The ParentPath entity must be in the form

"a/b/c" where a, b, and c are folder names. For example, if you have a site named "CupertinoU" containing a section named "Humanities," a course named "Literature," and a group in that course named "Audio," you can refer to the ParentPath as `<ParentPath>CupertinoU/Humanities/Literature/Audio</ParentPath>` in your DeletePermission operation. If specifying the root path, you must start the ParentPath entity with a leading slash (/). To specify a slash (/) as a character within a node of the slash-delimited path, escape the character with a second slash (/).

- **Credential.** Specifies the entities for the credential attributes you want to delete, including the Credential string and Access level.

Warning: You cannot undo any changes you make using the DeletePermission operation.

The following is an example of an iTunes U Web Services document using DeletePermission:

```
<?xml version="1.0" encoding="UTF-8"?>
<ITunesUDocument>
  <Version>1.0.1</Version>
  <DeletePermission>
    <ParentHandle>1073905670</ParentHandle>
    <ParentPath></ParentPath>
    <Credential>Authenticated@urn:mace:itunesu.com:sites:adc.education.
      apple.com</Credential>
  </DeletePermission>
</ITunesUDocument>
```

MergePermission

Specifies a permission you want to update for a section, course, or group in your iTunes U site. iTunes U merges the permission information specified in your document with the permission information in your iTunes U site.

When you specify this operation, iTunes U updates the destination permission in your iTunes U site with the specified credential string and access level (No Access, Download, Drop Box, Shared, Edit). You can use this operation to change the access level the destination credential has to a section, course, or group in your iTunes U site.

You specify the following entities with the MergePermission operation:

- **ParentHandle.** Specifies the handle in your iTunes U site where you want to update a permission. The parent handle must correspond to a section, Course page, or Course page group object in your iTunes U site.
- **ParentPath.** Specifies the path in your iTunes U site where you want to update a permission. The parent path must correspond to a section, Course page, or Course page group object in your iTunes U site. The ParentPath entity must be in the form "a/b/c" where a, b, and c are folder names. For example, if you have a site named "CupertinoU" containing a section named "Humanities," a course named "Literature," and a group in that course named "Audio," you can refer to the ParentPath as `<ParentPath>CupertinoU/Humanities/Literature/Audio</ParentPath>` in your MergePermission operation. If specifying the root path, you must start the ParentPath entity with a leading slash (/). To specify a slash (/) as a character within a node of the slash-delimited path, escape the character with a second slash (/).
- **Permission.** Specifies the entities for the permission attributes you want to update, including the Credential string and Access level.

Warning: You cannot undo any changes you make using the MergePermission operation.

The following is an example of an iTunes U Web Services document using MergePermission:

```
<?xml version="1.0" encoding="UTF-8"?>
<ITunesUDocument>
  <Version>1.0.1</Version>
  <MergePermission>
    <ParentHandle>1073905670</ParentHandle>
    <ParentPath></ParentPath>
    <Permission>
      <Credential>Authenticated@urn:mace:itunesu.com:sites:adc.education.
apple.com</Credential>
      <Access>Download</Access>
    </Permission>
  </MergePermission>
</ITunesUDocument>
```

DeleteTrack

Specifies a track you want to delete from your iTunes U site.

You specify the following entities with the DeleteTrack operation:

- TrackHandle. Specifies the handle in your iTunes U site for the track you want to delete. The track handle must correspond to a track object in your iTunes U site.

Warning: You cannot undo any changes you make using the DeleteTrack operation.

The following is an example of an iTunes U Web Services document using DeleteTrack:

```
<?xml version="1.0" encoding="UTF-8"?>
<ITunesUDocument>
  <Version>1.0.1</Version>
  <DeleteTrack>
    <TrackHandle>1074003970</TrackHandle>
  </DeleteTrack>
</ITunesUDocument>
```

MergeTrack

Specifies the track properties you want to update in your iTunes U site. iTunes U merges the track information specified in your document with the track information in your iTunes U site.

When you specify this operation, iTunes U updates the destination track's Name, Handle, Kind, DiscNumber, DurationInMilliseconds, AlbumName, ArtistName, and DownloadURL information in your iTunes U site. Use this operation when you want to update track preferences without uploading the entire track again.

You specify the following entities with the MergeTrack operation:

- TrackHandle. Specifies the handle in your iTunes U site for the track you want to update. The track handle must correspond to a track object in your iTunes U site.
- Track. Specifies the entities for the track attributes you want to update, including track Name, Handle, Kind, DiscNumber, DurationInMilliseconds, AlbumName, ArtistName, and DownloadURL. By specifying this information, you can override existing settings in the track.

Warning: You cannot undo any changes you make using the MergeTrack operation.

The following is an example of an iTunes U Web Services document using MergeTrack:

```
<?xml version="1.0" encoding="UTF-8"?>
<ITunesUDocument>
  <Version>1.0.1</Version>
  <MergeTrack>
    <TrackHandle>466</TrackHandle>
    <Track>
      <Name>Track 1</Name>
      <Handle/>
      <Kind/>
      <DiscNumber/>
      <DurationMilliseconds/>
      <AlbumName/>
      <ArtistName/>
      <DownloadURL/>
    </Track>
  </MergeTrack>
</ITunesUDocument>
```

AddDivision

Specifies a division you want to add to your iTunes U site.

You specify the following entities with the AddDivision operation:

- **ParentHandle.** Specifies the handle in your iTunes U site where you want to add a division. The parent handle must correspond to a root or a section object in your iTunes U site. If the handle does not match an existing object, iTunes U returns an error message. If you do not specify the ParentHandle entity, iTunes U uses the destination string in your URL.
- **ParentPath.** Specifies the path in your iTunes U site where you want to add a division. The parent path must correspond to a root or a section object in your iTunes U site. If the path does not match an existing object, iTunes U returns an error message. If you do not specify the ParentPath entity, iTunes U uses the destination string in your URL. The ParentPath entity must be in the form "a/b/c" where a, b, and c are folder names. For example, if you have a site named "CupertinoU" containing a section named "Humanities," you can refer to the ParentPath as `<ParentPath>CupertinoU/Humanities</ParentPath>` in your AddDivision operation. If specifying the root path, you must start the ParentPath entity with a leading slash (/). To specify a slash (/) as a character within a node of the slash-delimited path, escape the character with a second slash (/).
- **Division.** Specifies the entities for the division attributes you want to add, including division Name, ShortName, Identifier, Permission, Section, and AllowSubscription.

Notes:

- Specify simple text string values for the Name, Shortname, and Identifier entities.
- To specify whether or not users can subscribe to a specific division as a podcast, you can specify the following values for AllowSubscription: true, false. You can use this entity to override your global track preferences setting on a per-division basis.
- Specify all details for any Group (including Name) or Permission (including Credential and Access) entities.

Only send four AddDivision requests per iTunes U Web Services document. If you send more than four, iTunes U ignores the other requests.

The following is an example of an iTunes U Web Services document using AddDivision:

```
<?xml version="1.0" encoding="UTF-8"?>
<ITunesUDocument>
  <Version>1.0.1</Version>
  <AddDivision>
    <ParentHandle>1082540042</ParentHandle>
    <ParentPath/>
    <Division>
      <Name>This is an inner division</Name>
      <ShortName/>
      <Identifier/>
      <AllowSubscription/>
      <Permission>
        <Credential/>
        <Access/>
      </Permission>
      <Section>
        <Name>Section 1</Name>
        <Handle/>
        <Course>
          <Name>theoretical course</Name>
        </Course>
      </Section>
    </Division>
  </AddDivision>
</ITunesUDocument>
```

DeleteDivision

Specifies a division you want to delete from your iTunes U site.

You specify the following entities with the DeleteDivision operation:

- **DivisionHandle.** Specifies the handle in your iTunes U site for the division you want to delete. The division handle must correspond to a division object in your iTunes U site. If the handle does not match an existing object, iTunes U returns an error message. If you do not specify the DivisionHandle entity, iTunes U uses the destination string in your URL.
- **DivisionPath.** Specifies the path in your iTunes U site for the division you want to delete. The division path must correspond to a division object in your iTunes U site. If the path does not match an existing object, iTunes U returns an error message. If you do not specify the DivisionPath entity, iTunes U uses the destination string in your URL. The DivisionPath entity must be in the form "a/b/c" where a, b, and c are folder names. For example, if you have a site named "CupertinoU" containing a division named "Fall07," you can refer to the DivisionPath as <DivisionPath>CupertinoU/Fall07</DivisionPath> in your DeleteDivision operation. If specifying the root path, you must start the DivisionPath entity with a leading slash (/). To specify a slash (/) as a character within a node of the slash-delimited path, escape the character with a second slash (/).

Warning: You cannot undo any changes you make using the DeleteDivision operation.

Only send four DeleteDivision requests per iTunes U Web Services document. If you send more than four, iTunes U ignores the other requests.

The following is an example of an iTunes U Web Services document using DeleteDivision:

```
<?xml version="1.0" encoding="UTF-8"?>
<ITunesUDocument>
  <Version>1.0.1</Version>
  <DeleteDivision>
    <DivisionHandle>1082540094</DivisionHandle>
    <DivisionPath></DivisionPath>
  </DeleteDivision>
</ITunesUDocument>
```

MergeDivision

Specifies the division information you want to update in your iTunes U site. iTunes U merges the division information specified in your document with the division information in your iTunes U site.

When you specify this operation, iTunes U:

1. Updates existing division objects with the information you specify.
2. Creates new objects in the division for any entities you specify that do not already exist in the destination division, and, if the Destructive entity is set to true, deletes any existing objects in the destination division for entities you do not specify.
3. Merges information in the division for any entities you specify that already exist in the destination division.

You specify the following entities with the MergeDivision operation:

- **DivisionHandle.** Specifies the handle in your iTunes U site for the division you want to update. The division handle must correspond to a division object in your iTunes U site. If the handle does not match an existing object, iTunes U returns an error message. If you do not specify the DivisionHandle entity, iTunes U uses the destination string in your URL.
- **DivisionPath.** Specifies the path in your iTunes U site for the division you want to update. The division path must correspond to a division object in your iTunes U site. If the path does not match an existing object, iTunes U returns an error message. If you do not specify the DivisionPath entity, iTunes U uses the destination string in your URL. The DivisionPath entity must be in the form "a/b/c" where a, b, and c are folder names. For example, if you have a site named "CupertinoU" containing a division named "Fall07," you can refer to the DivisionPath as <DivisionPath>CupertinoU/Fall07</DivisionPath> in your MergeDivision operation. If specifying the root path, you must start the DivisionPath entity with a leading slash (/). To specify a slash (/) as a character within a node of the slash-delimited path, escape the character with a second slash (//).
- **MergeByHandle.** Specifies whether or not you want to merge division information using Division handles. You can specify one of the following values: true, false. By default, iTunes U merges division information using the Name entity.

iTunes U preserves the order of section objects within the Division entity. By default, when you merge a division, iTunes U uses the Name entity to determine how to merge and order similar objects in the destination division. You can use MergeByHandle to reorder division objects. If you also want to rename a division, set the MergeByHandle entity to true to specify that iTunes U merge the entities based on handles in your document instead of Names.

- **Division.** Specifies the entities for the division attributes you want to update, including division Name, Permission, Section, and AllowSubscription. By specifying this information, you can override existing settings in the division.
- **Destructive.** Specifies whether or not you want to delete from the destination division any Section or Permission objects not specified in the Division entity. You can specify one of the following values: true, false. By default, iTunes U sets the Destructive entity to false and merges objects.

Notes:

- Specify simple text string values for the Name entity.
- To specify whether or not users can subscribe to a specific division as a podcast, you can specify the following values for AllowSubscription: true, false. You can use this entity to override your global track preferences setting on a per-division basis.
- Specify all details for any Group (including Name) or Permission (including Credential and Access) entities.

Warning: When used with the Destructive entity, you cannot undo any changes you make using the MergeDivision operation. Be careful when using the Destructive entity. If misused, you can destroy your entire iTunes U site structure.

Only send four MergeDivision requests per iTunes U Web Services document. If you send more than four, iTunes U ignores the other requests.

The following is an example of an iTunes U Web Services document using MergeDivision:

```
<?xml version="1.0" encoding="UTF-8"?>
<ITunesUDocument>
  <Version>1.0.1</Version>
  <MergeDivision>
    <DivisionHandle>1082556418</DivisionHandle>
    <DivisionPath/>
    <MergeByHandle/>
    <Destructive>true</Destructive>
    <Division>
      <Name>This is an inner division</Name>
      <ShortName/>
      <Identifier/>
      <AllowSubscription/>
      <Permission>
        <Credential>DivisionPermission@urn:mace:itunesu.com:sites:
wstest.edu</Credential>
        <Access>Download</Access>
      </Permission>
      <Section>
        <Name>This is the first section of the division</Name>
        <Handle/>
        <Course>
          <Name>Warga 1</Name>
          <Group>
            <Name>Group 1</Name>
            <Handle/>
            <Track>
              <Name/>
              <Handle/>
              <Kind/>
              <DiscNumber/>
              <DurationMilliseconds/>
              <AlbumName/>
              <ArtistName/>
              <DownloadURL/>
            </Track>
            <Permission>
              <Credential/>
              <Access/>
            </Permission>
          </Group>
        </Course>
      </Section>
    </Division>
  </MergeDivision>
</ITunesUDocument>
```

AddSection

Specifies a section you want to add to your iTunes U site.

You specify the following entities with the AddSection operation:

- **ParentHandle.** Specifies the handle in your iTunes U site where you want to add a section. The parent handle must correspond to the root or a division object in your iTunes U site. If the handle does not match an existing object, iTunes U returns an error message. If you do not specify the ParentHandle entity, iTunes U uses the destination string in your URL.
- **ParentPath.** Specifies the path in your iTunes U site where you want to add a section. The parent path must correspond to the root or a division object in your iTunes U site. If the path does not match an existing object, iTunes U returns an error message. If you do not specify the ParentPath entity, iTunes U uses the destination string in your URL. The ParentPath entity must be in the form "a/b/c" where a, b, and c are folder names. For example, if you have a site named "CupertinoU" containing a division named "Fall07," you can refer to the ParentPath as <ParentPath>CupertinoU/Fall07</ParentPath> in your AddSection operation. If specifying the root path, you must start the ParentPath entity with a leading slash (/). To specify a slash (/) as a character within a node of the slash-delimited path, escape the character with a second slash (/).
- **Section.** Specifies the entities for the section attributes you want to add, including section Name, Permission, Course, Division, and AllowSubscription.

Notes:

- Specify simple text string values for the Name entity.
- To specify whether or not users can subscribe to a specific section as a podcast, you can specify the following values for AllowSubscription: true, false. You can use this entity to override your global track preferences setting on a per-section basis.
- Specify all details for any Group (including Name) or Permission (including Credential and Access) entities.

Only send four AddSection requests per iTunes U Web Services document. If you send more than four, iTunes U ignores the other requests.

The following is an example of an iTunes U Web Services document using AddSection:

```
<?xml version="1.0" encoding="UTF-8"?>
<ITunesUDocument>
  <Version>1.0.1</Version>
  <AddSection>
    <ParentHandle>1082474533</ParentHandle>
    <ParentPath/>
    <Section>
      <Name>This is the first section of the division</Name>
      <Handle/>
      <Course>
        <Name>Warga 1</Name>
        <Group>
          <Name>BLerga</Name>
          <Handle/>
          <Track>
            <Name/>
            <Handle/>
            <Kind/>
            <DiscNumber/>
            <DurationMilliseconds/>
            <AlbumName/>
            <ArtistName/>
            <DownloadURL/>
          </Track>
        </Group>
      </Course>
    </Section>
  </AddSection>
</ITunesUDocument>
```

```
        <Permission>
          <Credential>Student@urn:mace:itunesu.com:sites:
            wstest.edu</Credential>
          <Access>No Access</Access>
        </Permission>
      </Group>
    </Course>
  </Section>
</AddSection>
</iTunesUDocument>
```

DeleteSection

Specifies a section you want to delete from your iTunes U site.

You specify the following entities with the DeleteSection operation:

- **SectionHandle.** Specifies the handle in your iTunes U site for the section you want to delete. The section handle must correspond to a section object in your iTunes U site. If the handle does not match an existing object, iTunes U returns an error message. If you do not specify the SectionHandle entity, iTunes U uses the destination string in your URL.
- **SectionPath.** Specifies the path in your iTunes U site for the section you want to delete. The section path must correspond to a section object in your iTunes U site. If the path does not match an existing object, iTunes U returns an error message. If you do not specify the SectionPath entity, iTunes U uses the destination string in your URL. The SectionPath entity must be in the form "a/b/c" where a, b, and c are folder names. For example, if you have a site named "CupertinoU" containing a section named "Humanities," you can refer to the SectionPath as
<SectionPath>CupertinoU/Humanities</SectionPath> in your DeleteSection operation. If specifying the root path, you must start the SectionPath entity with a leading slash (/). To specify a slash (/) as a character within a node of the slash-delimited path, escape the character with a second slash (/).

Warning: You cannot undo any changes you make using the DeleteSection operation.

Only send four DeleteSection requests per iTunes U Web Services document. If you send more than four, iTunes U ignores the other requests.

The following is an example of an iTunes U Web Services document using DeleteSection:

```
<?xml version="1.0" encoding="UTF-8"?>
<iTunesUDocument>
  <Version>1.0.1</Version>
  <DeleteSection>
    <SectionHandle>1082540094</SectionHandle>
    <SectionPath>1082540094</SectionPath>
  </DeleteSection>
</iTunesUDocument>
```

MergeSection

Specifies section information you want to update in your iTunes U site. iTunes U merges the section information specified in your document with the section information in your iTunes U site.

When you specify this operation, iTunes U:

1. Updates existing section objects with the information you specify.
2. Creates new objects in the section for any entities you specify that do not already exist in the destination section, and, if the Destructive entity is set to true, deletes any existing objects in the destination section for entities you do not specify.
3. Merges information in the section for any entities you specify that already exist in the destination section.

You specify the following entities with the MergeSection operation:

- **SectionHandle.** Specifies the handle in your iTunes U site for the section you want to update. The section handle must correspond to a section object in your iTunes U site. If the handle does not match an existing object, iTunes U returns an error message. If you do not specify the SectionHandle entity, iTunes U uses the destination string in your URL.
- **SectionPath.** Specifies the path in your iTunes U site for the section you want to update. The section path must correspond to a section object in your iTunes U site. If the path does not match an existing object, iTunes U returns an error message. If you do not specify the SectionPath entity, iTunes U uses the destination string in your URL. The SectionPath entity must be in the form "a/b/c" where a, b, and c are folder names. For example, if you have a site named "CupertinoU" containing a section named "Humanities," you can refer to the SectionPath as `<SectionPath>CupertinoU/Humanities</SectionPath>` in your MergeSection operation. If specifying the root path, you must start the SectionPath entity with a leading slash (/). To specify a slash (/) as a character within a node of the slash-delimited path, escape the character with a second slash (//).
- **MergeByHandle.** Specifies whether or not you want to merge section information using Section handles. You can specify one of the following values: true, false. By default, iTunes U merges section information using the Name entity.

iTunes U preserves the order of division and course objects within the Section entity. By default, when you merge a section, iTunes U uses the Name entity to determine how to merge and order similar objects in the destination section. You can use MergeByHandle to reorder section objects. If you also want to rename a section, set the MergeByHandle entity to true to specify that iTunes U merge the entities based on handles in your document instead of Names.

- **Section.** Specifies the entities for the section attributes you want to update, including section Name, Permission, Course, Division, and AllowSubscription. By specifying this information, you can override existing settings in the section.
- **Destructive.** Specifies whether or not you want to delete from the destination any Course or Permission objects not specified in the Section entity. You can specify one of the following values: true, false. By default, iTunes U sets the Destructive entity to false and merges objects.

Notes:

- Specify simple text string values for the Name entity.
- To specify whether or not users can subscribe to a specific section as a podcast, you can specify the following values for AllowSubscription: true, false. You can use this entity to override your global track preferences setting on a per-section basis.
- Specify all details for any Group (including Name) or Permission (including Credential and Access) entities.

Warning: When used with the Destructive entity, you cannot undo any changes you make using the MergeSection operation. Be careful when using the Destructive entity. If misused, you can destroy your entire iTunes U site structure.

Only send four MergeSection requests per iTunes U Web Services document. If you send more than four, iTunes U ignores the other requests.

The following is an example of an iTunes U Web Services document using MergeSection:

```
<?xml version="1.0" encoding="UTF-8"?>
<ITunesUDocument>
  <Version>1.0.1</Version>
  <MergeSection>
    <SectionHandle>1082458114</SectionHandle>
    <SectionPath/>
    <MergeByHandle/>
    <Destructive/>
    <Section>
      <Name>This is the merged section name</Name>
      <Handle/>
      <Course>
        <Name>Warga 1</Name>
        <Group>
          <Name>BLerga</Name>
          <Handle/>
          <Track>
            <Name/>
            <Handle/>
            <Kind/>
            <DiscNumber/>
            <DurationMilliseconds/>
            <AlbumName/>
            <ArtistName/>
            <DownloadURL/>
          </Track>
          <Permission>
            <Credential/>
            <Access/>
          </Permission>
        </Group>
      </Course>
    </Section>
  </MergeSection>
</ITunesUDocument>
```

MergeSite

Specifies the site information you want to update in your iTunes U site. iTunes U merges the site information specified in your document with the site information in your iTunes U site.

When you specify this operation, iTunes U:

1. Updates existing site objects with the information you specify.
2. Creates new objects in the site for any entities you specify that do not already exist in the destination site, and, if the Destructive entity is set to true, deletes any existing objects in the destination site for entities you do not specify.
3. Merges information in the site for any entities you specify that already exist in the destination site.

You specify the following entities with the MergeSite operation:

- SiteHandle. Specifies the handle for the site you want to update. The site handle must correspond to a root object in your iTunes U site. If the handle does not match an existing object, iTunes U returns an error message. If you do not specify the SiteHandle entity, iTunes U uses the destination string in your URL.
- MergeByHandle. Specifies whether or not you want to merge site information using Site handles. You can specify one of the following values: true, false. By default, iTunes U merges site information using the Name entity.

iTunes U preserves the order of section objects within the Site entity. By default, when you merge a site, iTunes U uses the Name entity to determine how to merge and order similar objects in the destination site. You can use MergeByHandle to reorder site objects. If you also want to rename a site, set the MergeByHandle entity to true to specify that iTunes U merge the entities based on handles in your document instead of Names.

- Site. Specifies the entities for the site attributes you want to update, including site Name, Permission, Section, and AllowSubscription. By specifying this information, you can override existing settings in the site.
- Destructive. Specifies whether or not you want to delete from the destination site any Section or Permission objects not specified in the Site entity. You can specify one of the following values: true, false. By default, iTunes U sets the Destructive entity to false and merges objects.

Notes:

- Specify simple text string values for the Name entity.
- To specify whether or not users can subscribe to a specific site as a podcast, you can specify the following values for AllowSubscription: true, false. You can use this entity to override your global track preferences setting on a per-site basis.
- Specify all details for any Group (including Name) or Permission (including Credential and Access) entities.

Warning: When used with the Destructive entity, you cannot undo any changes you make using the MergeSite operation. Be careful when using the Destructive entity. If misused, you can destroy your entire iTunes U site structure.

The following is an example of an iTunes U Web Services document using MergeSite:

```
<?xml version="1.0" encoding="UTF-8"?>
<ITunesUDocument>
  <Version>1.0.1</Version>
  <MergeSite>
    <Site>
      <Name>wsttest.edu</Name>
      <Handle/>
      <AllowSubscription/>
      <Permission>
        <Credential>Person@urn:mace:itunesu.com:sites:wsttest.edu
        </Credential>
        <Access>Download</Access>
      </Permission>
      <Section>
        <Name>New Section by MergeSite</Name>
        <Handle/>
        <Course>
          <Name>New course by MergeSite</Name>
        </Course>
      </Section>
      <Templates>
        <Name/>
        <Handle/>
        <Course/>
      </Templates>
    </Site>
  </MergeSite>
</ITunesUDocument>
```

Requesting Daily iTunes U Log Reports

To receive daily reporting information from your iTunes U site, you can use the GetDailyReportLogs Web Service operation to request an iTunes U log report in raw text file format.

To use the GetDailyReportLogs Web Service, you must update your existing transfer script to optionally return just the authorization token instead of redirecting to a URL. To do this, you can either create a new script or pass an argument to your existing script.

To request a daily log report:

- 1 Request an authorization token from your new or updated transfer script. For details, see [“Uploading Content Using iTunes U Web Services”](#) in Chapter 5.
- 2 Invoke a GET, using the authorization token from step 1, to the GetDailyReportLogs operation, including a `StartDate` (required) and `EndDate` (optional) formatted as `YYYY-MM-DD`.

For example, a GetDailyReportLogs request might look like the following:

```
http://deimos.apple.com/WebObjects/Core.woa/API/GetDailyReportLogs/example.edu?StartDate=2007-09-12&EndDate=2007-09-13&credentials=Administrator@urn:mace:itunesu.com:sites:example.edu&identity=%22Jane+Doe%22+%3Cjdoe%40example.edu%3E+%28jdoe%29+%5B42%5D&signature=38bda70d9aa6975ae8756754034feb6e3c794aca4b21665f6dc85d2ed42d4f6b
```

Or, from the command line:

```
/usr/bin/curl  
"http://deimos.apple.com/WebObjects/Core.woa/API/GetDailyReportLogs/example.edu?StartDate=2007-09-12&EndDate=2007-09-13&credentials=Administrator@urn:mace:itunesu.com:sites:example.edu&identity=%22Jane+Doe%22+%3Cjdoe%40example.edu%3E+%28jdoe%29+%5B42%5D&signature=38bda70d9aa6975ae8756754034feb6e3c794aca4b21665f6dc85d2ed42d4f6b"
```

The iTunes U daily log report returns information for the following space-delimited fields:

- 1.0
- Site Name
- Date of Log (GMT)
- Time of Log
- Action
- Destination String
- User
- Client
- Path

The following is an illustration of sample output from an iTunes U daily report log:

```
1.0 sample.edu 2007-08-07 11:11:46.972-07:00 Browse sample.edu  
AppleAdministrator@sample.edu 0.0.0.0 iTunes/7.3.2/Macintosh "Sample College"  
1.0 sample.edu 2007-08-07 12:11:55.708-07:00 Browse sample.edu  
AppleAdministrator@sample.edu 0.0.0.0 iTunes/7.3.2/Macintosh "Sample College"  
1.0 sample.edu 2007-08-07 14:10:58.363-07:00 EditPage sample.edu  
AppleAdministrator@sample.edu 0.0.0.0 iTunes/7.3.2/Macintosh "Sample College"  
1.0 sample.edu 2007-08-07 16:24:37.858-07:00 Browse sample.edu  
AppleAdministrator@sample.edu 0.0.0.0 iTunes/7.3.2/Macintosh "Sample College"  
1.0 sample.edu 2007-08-07 12:23:11.028-07:00 Browse sample.edu  
AppleAdministrator@sample.edu 0.0.0.0 iTunes/7.3.2/Macintosh "Sample College"
```

```
1.0 sample.edu 2007-08-07 14:41:33.552-07:00 Browse sample.edu
AppleAdministrator@sample.edu 0.0.0.0 iTunes/7.3.2/Macintosh "Sample College"
1.0 sample.edu 2007-08-07 10:56:29.453-07:00 Browse sample.edu
AppleAdministrator@sample.edu 0.0.0.0 iTunes/7.3.2/Macintosh "Sample College"
1.0 sample.edu 2007-08-07 16:28:24.010-07:00 Browse sample.edu
AppleAdministrator@sample.edu 0.0.0.0 iTunes/7.3.2/Macintosh "Sample College"
1.0 sample.edu 2007-08-07 12:10:34.166-07:00 Upload sample.edu
member@itunesu.com 0.0.0.0 ?/?/? "Sample College" "XMLControlFile" 0 0
1.0 sample.edu 2007-08-07 12:29:18.993-07:00 Upload sample.edu
member@itunesu.com 0.0.0.0 ?/?/? "Sample College" "XMLControlFile" 0 0
1.0 sample.edu 2007-08-07 16:25:11.726-07:00 Upload sample.edu
member@itunesu.com 0.0.0.0 ?/?/? "Sample College" "XMLControlFile" 0 0
1.0 sample.edu 2007-08-07 12:34:31.522-07:00 Browse sample.edu
AppleAdministrator@sample.edu 0.0.0.0 iTunes/7.3.2/Macintosh "Sample College"
```

Notes:

- iTunes U returns only the last 60 days of report logs.
- The current day's logs are not available until the morning of the next day.

Chapter 7

Searching Your iTunes U Site

You can use the search field (in the upper-right corner of the iTunes window) to quickly locate items in your iTunes U site. When you search for items within your iTunes U site, iTunes U displays results that contain the text you entered based on matches within specific fields, including page name, group name, track title, artist name, album name, comments, lyrics, and course descriptions.

To find an item in your iTunes U site:

- 1 Log in to iTunes U as the site administrator (or another user with download access).
- 2 Click the search field and type the text you want to find.
- 3 Press the Return key.

In the top half of the Search Results window, iTunes U displays up to four unique iTunes U pages that contain the most relevant matches to the text you entered (for example, a track title match has a higher relevance than an information field match). Clicking a page in the Search Results window displays the Welcome page, Public Feature page, or Course page with the first tab selected.

In the tracklist area of the Search Results window, iTunes U displays the items that contain the text you entered, sorted by relevance. You cannot search on tracks that were moved to the Trash.

To view comments matching the search results for the Comment column, make sure iTunes is displaying the Comment column (choose View > View Options).

To see all your items again, click the Back button in the navigation bar.

- 4 Click Logout.

For MPEG-4 files, you can also search on keyword, description, and information fields. iTunes sets the information field when a user edits the Grouping field in the iTunes Get Info page for an MPEG-4 file. For ID3-compliant files, you can also search on the TIT1 and TIT3 fields. iTunes sets the ID3 TIT1 field when a user edits the Grouping field in the iTunes Get Info page for an ID3-compliant file.

If your iTunes U site is included in the iTunes Store directory and you search your site from within the iTunes Store, your initial search returns all matches throughout all iTunes U sites, as well as all matches throughout the iTunes Store.

To narrow your initial search to your iTunes U site:

- 1 Click the iTunes U category in the Search Results window.
- 2 Click Power Search.
- 3 Type a title, description, or institution name in the search fields.
- 4 Click Search or press the Enter key.

To add a power search tool within your iTunes U site:

- 1 Click Power Search in the QUICK LINKS box within iTunes U in the iTunes Store.
- 2 Click the iTunes U category in the Search Results window.
- 3 Type your institution name in the Institution search field.
- 4 Click Search or press the Enter key.
- 5 Drag the Search Results navigation bar to an open plain text file. For example:

`http://phobos.apple.com/WebObjects/MZSearch.woa/wa/advancedSearch?media=iTunes
U&searchButton=submit&titleTerm=&descriptionTerm=&institutionTerm=cupertinou`

- 6 Copy and paste the URL from step 5 into a new link in a Links box within your iTunes U site.

To add additional keywords for iTunes U to search:

- 1 Control-click the track where you want to add keywords, then choose Get Info from the shortcut menu that appears.
- 2 Click the Info tab.
- 3 Add keywords to the Grouping field.

When searching your iTunes U site, after a track title, keywords in the Grouping field have the second-highest matching relevance.

- 4 Click OK.

Chapter 8

Understanding iTunes U Reports

As the site administrator, once a week, you will receive an email from Apple containing an Excel spreadsheet report that details usage information for your iTunes U site. This chapter describes the data provided in the weekly report.

You can use the data provided in your iTunes U site weekly report to monitor your site usage as well as help you determine what content is most popular within your site.

This chapter covers the following topics:

- [iTunes U Reports](#)
- [Understanding Summary Data](#)

Note: If you want Apple to send iTunes U reports to a different contact person or group email list, update the Email address in the Site Administrator Contact group in the Edit Site Settings page.

iTunes U Reports

Your iTunes U weekly report contains multiple worksheets, each including information about a different week of site usage. The main worksheet, Summary, contains a week-by-week overview of your site activity.

Your iTunes U weekly report includes the following worksheets:

- **Summary.** The Summary sheet lists your site's disk usage, user actions, and software. For more information on the user actions in the Summary sheet, see ["Understanding Summary Data"](#) later in this chapter.
- **Tracks.** The Tracks sheet lists all the iTunes U tracks users downloaded that week through the DownloadTrack, DownloadTracks, and SubscriptionEnclosure actions.
- **Browse.** The Browse sheet lists all the iTunes U pages users viewed that week. You can use this sheet to help you determine which pages within your site are most popular.
- **Edits.** The Edits sheet lists all the iTunes U pages or groups users edited that week through the EditFiles and EditPage actions.
- **Previews.** The Previews sheet lists all the iTunes U tracks users previewed that week. Previewing tracks does not result in the track actually being downloaded to the user's iTunes U library.
- **Users.** The Users sheet lists all the iTunes U users that accessed your iTunes U site that week. This Users sheet only applies to non-public sites. iTunes U can only collect this user data if you provided identify information (for example, displayName, emailAddress, username, userIdentifier) in your transfer script.

Chapter 8: Understanding iTunes U Reports**Notes:**

- If iTunes U cannot log the actual user that performed an action, iTunes U uses the following string as a placeholder to identify the user: visitor@indigo.apple.com.
- If an Apple iTunes U representative accesses your site, your report contains the following email address: AppleAdministrator520044@example.edu.
- If your Summary sheet displays unknown Client Software as "?/?/?,""?/?/Macintosh," or "?/?/Windows," one of the following may have occurred:
 - The site administrator or instructor uploaded a file or edited a page using a web browser and performed user actions within the web browser.
 - A user downloaded a track and iTunes passed the download task to another application, usually a web browser. For "?/?/?," the track download was performed by an application that did not send a user-agent identifying the application on either Mac or Windows.
- Non-iTunes podcasting clients subscribed to your feeds.

Understanding Summary Data

In addition to your site's disk usage and software versions, the Summary worksheet lists aggregate values for the individual worksheet user actions. The following table describes what occurs for each user action returned in the Summary sheet:

This user action	Occurs when this action occurs
Browse	A user views a page in your iTunes U site. It's analogous to browsing a page in a web browser.
DownloadPreview	A user double-clicks a track in a Course page to preview a file instead of downloading it.
DownloadTrack	A user clicks the Get, Get Song, or Get Movie button in iTunes U to download a track.
DownloadTracks	A user clicks the Get Track(s) button to download all tracks in a Course page group. This action appears multiple times in the report; once for each track the user downloads.
EditFiles	A user clicks the Upload Files link.
EditPage	A user with edit access clicks Edit Page or Edit Access in an iTunes U page.
Logout	A user clicks the Logout link.
SearchResultsPage	A user types text in the Search field at the top right of the iTunes window to search your iTunes U site.
Subscription	A user clicks the Subscribe button to subscribe to the group's podcast.
SubscriptionEnclosure	The podcast reader downloads a new episode in the podcast. If the podcast reader detects new content in the podcast, it downloads the content.
SubscriptionFeed	The podcast reader automatically checks for new content in the podcast. Podcast readers automatically check for new content at regular intervals.

The Total Track Downloads value is a combination of tracks downloaded for a podcast subscription (SubscriptionEnclosure) as well as when a user clicks Get, Get Song, or Get Movie (DownloadTrack) or Get Track(s) (DownloadTracks) in iTunes U.

Glossary

The glossary defines terms you'll encounter as you read this guide.

access

Values of No Access, Download, Drop Box, Shared, and Edit that define the level of permissions assigned to a user credential for a specific group, page, or hierarchy of pages within iTunes U. See also *credential*; *permission*.

authorization token

A string containing a user's credentials and, optionally, user identity information, as well as a time stamp and a digital signature, packaged together and formatted for transfer to iTunes U. This token is required to securely communicate with iTunes U.

Course page

A page in iTunes U that administrators, instructors, staff, and students use to access objects (for example, audio tracks and video tracks). You can divide a Course page into groups, displayed as tabs, to organize different types of information together or to divide the Course page into areas of differing access permissions. Compare *Public Feature page*, *Welcome page*.

Course page group

A shared group with permissions that allow users to browse, but not upload or download content from the group. Only the owner (for example, instructors and staff) has full access. See also *Drop Box group*; *Shared group*.

credential

A text string containing a user's attributes and a unique identifier with the user's specific access permissions to iTunes U pages, groups, and resources. For example: Student@urn:mace:example.edu:psych101.3.200609.

destination

An internal set of numbers that uniquely identifies an iTunes U page, group, or track.

digital signature

A digital signal or pattern that identifies a user or the user's habits. You create the digital signature by using the HMAC-SHA256 algorithm to cryptographically sign the token data you generated with the shared secret you received when you activated your site. See also *authorization token*; *shared secret*.

Drop Box group

A shared group with permissions that allow users to upload to, but not download from, the group. For example, a student can upload a file to a Drop Box group and ask the instructor to review the file and provide feedback, but other students cannot see the file's content. Only the group owner has full access permissions to the group objects. The ownership of an item written to the group is automatically transferred to the owner of the group, thus giving the owner of a Drop Box group full access permissions to and control over the items. See also *Course page group*; *Shared group*.

Glossary

Links box

A separate box in an iTunes U page containing links to additional content, supporting documents, and content considered external to the primary content in the iTunes U page or group.

navigation bar

A user interface tool within the iTunes application that allows the user to see where the current page or group is in relation to the site's hierarchy. The bar controls the navigation between pages. You can configure page and group names and affect what appears in the iTunes navigation bar.


page identifier

A unique string you specify in the Identifier field to identify a specific page within iTunes U. If you create a permission for the page with a credential that includes the `${IDENTIFIER}` variable, this page substitutes the provided page identifier for the `${IDENTIFIER}` variable when performing authentication. iTunes U uses the page identifier to automatically derive identifier-based credentials based upon substitution rules. See also *credential*.

permission

A term used to describe the actions a user is permitted to perform within a specific group, page, or hierarchy of pages within iTunes U, based on the access levels assigned to the user. Access values are: No Access, Download, Drop Box, Shared, and Edit. See also *access*.

podcast

A downloadable audio or video file meant for download by subscribers or by those viewing a specific page. Podcast files contain content that typically occurs on a periodic basis. Podcasts with a Display icon () next to them also show video. If you have the correct access permissions, you can download individual podcasts or subscribe to podcasts so they are automatically downloaded as they become available from your iTunes U site. Podcast episodes are downloaded to your computer and you can copy them to an iPod, iPhone, or Apple TV.

Public Feature page

A page in iTunes U that administrators, instructors, staff, students, and the public use to access descendant Welcome pages, Course pages, courses, and tracks, used exclusively for public content. The Public Feature page is the first page iTunes U displays when you access your public iTunes U site. Compare *Course page*; *Public Feature page*.

Shared group

A group with permissions that allow users to upload content to and download content from the group. See also *Course page group*; *Drop Box group*.

shared secret

A value used to sign the token data you created and transform the data into an encrypted format, creating an authorization token. Only you and Apple should have access to the shared secret; be sure to store the shared secret in a secure location. See also *authorization token*; *digital signature*.

Site login URL

The URL, defined in the iTunes U Edit Site Settings page, iTunes U redirects you to if your integration is not working properly, or you do not have access to the iTunes U site you are trying to log into. By default:
`https://<domainname>/itunesu/?destination=<domainname>.`

Glossary**Tools area**

An area within an iTunes U page containing options for editing pages, uploading files, defining access levels, and updating your site preferences, appearance, and settings, provided a user has the appropriate permissions to perform these actions.

TOP DOWNLOADS box

A separate box in the iTunes U Public Feature page containing links to the top downloads for your site. By default, iTunes U shows the top five downloads for your site. iTunes U begins collecting download data as soon as your site is active. A few days after the first track is download from your site, iTunes U has enough data to determine the most downloaded tracks and display the top tracks in the TOP DOWNLOADS box.

web service

A software system designed to support interoperable machine-to-machine interaction over a network.

Welcome page

A page in iTunes U that administrators, instructors, staff, and students use to access descendant Welcome pages and Course pages, usually used for non-public content. The root Welcome page is the first page iTunes U displays when you access your iTunes U site. Compare *Course page*; *Public Feature page*.

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