

# Preparing Files for Submission to ADHE

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The following steps are suggested for preparing files for submission to ADHE via the Student Information System (SIS). The process is divided into three steps—data extraction, data validation and error correction, and data submission—that are summarized in the following sections. In each part, a process is described at a general level, due to the diversity of student information systems, followed by some suggested tools and procedures.

### Data Extraction

Extract data from the institution's student information system and convert the data to the SIS format using a data extract program or a record export utility. Some institutions may have a data extraction program, which performs the extraction process. If your institution does not have a program, you will have to extract and format the data manually using a record export utility (e.g., AmCyber's Multi-Edit, Microsoft Access). NOTE: ADHE does not require or recommend the use of Microsoft Access or AmCyber's Multi-Edit. These are the packages used at ADHE for similar purposes and are supplied as examples only. Other comparable software packages are on the market and your institution should decide what software is best for your institution.

Software such as Microsoft Access will allow you to manipulate data into valid SIS fields and values. An example of this is the gender field in the student file. Your institution may use 'M' and 'F' for valid gender values. SIS requires '1' and '2'. Microsoft Access allows you to easily convert these values. After all fields have been edited for the correct values, the data must be formatted as per the SIS Manual. An export template can be created in Access and used to format the data. The File Layout pages will guide you. Watch for filler fields. These fields must contain spaces and are in place for future growth of the file. Also, numeric fields such as credit hours and enrollments must be right aligned.

Whether you have an extraction program or complete the process manually, it is a good idea to look at the final product in a text editor. Looking at the file will alert you to several types of problems, wrong columns, columns not filled in, blank lines in the submission, multiple header/trailer records, etc.

### Data Validation and Error Correction

Download the SIS validation executable as a binary file. Log in to an FTP session and move to the appropriate sub folder. When using the ftp service at the command prompt, enter binary and press enter. This sets up the file transfer for binary transfer. (Most of the more modern ftp can automatically detect binary or ascii.) After doing this, file transfer can proceed. Remember that the download of the SIS validation executable from the FTP server is only for Access 2000. After the file transfer is completed, type ASCII and press enter to reset the default download back to ASCII so that you are ready for data file transfer.

### Error Clarification

***The importance of running the data through the SIS validation software BEFORE submission to ADHE cannot be overstated.*** Running the validation program loads the data into your Access database. If you do not run the validation program, your Access database will not have that term's data. *If you will be replacing the machine you are running the validation software, it is imperative that you preserve the Sisdb.mdb Access database; at present ADHE cannot reconstruct the database for you.* Running data through the validation also produces an error listing in Crystal Reports, a report generating software provided in the validation program. The error listing report can also be viewed later in Access by selecting the reports tab. Print out the error report for your review. Data errors usually result from one of three scenarios: 1) incorrect coding, 2) problems resulting from data entry or extraction, or 3) inconsistency of data across fields and/or files.

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## Incorrect Coding

The SIS Reference Manual identifies all valid codes that may be used for each record's field. For example, if you enter a code of 7 for a field where the valid options are 1, 2, or 3, an error will result. This type of problem results either from an erroneous data entry or when the data are extracted and/or converted from the institutional files. Generally speaking, a large number of errors in the same field often indicates a data extraction or conversion problem, whereas a small number of errors in the same field is likely due to data entry inaccuracies. Consult your institution's data processing staff or the software vendor for assistance with these types of problems; *ADHE is unable to help with these errors.*

## Problems Resulting from Data Entry or Extraction

You may find it helpful to write some basic queries or reports in Access to help you analyze the data. This will give you information on where errors exist. Do the results make sense to you? For example, you work at a coeducational institution but all of your students are reported as male. You have assigned a code that is valid for that field, but there is a problem either when the data are entered or when the data are extracted and/or converted from the institutional files. Again, contact the data processing staff or the software vendor for assistance; ADHE is unable to help with this type of error.

**Remember:** You know your institution and what its general demographics are. Review the summaries carefully, compare them with last year's data. Look for unusually large changes in the totals and subtotals. A significant increase or decrease from the prior year's numbers, more often than not, is indicative of errors in your data file(s).

## Inconsistency Across Fields and/or Files

Lack of data consistency results when data in a given field does not match with that reported in another field in the same file or one of the other fields to which it is related. For example, the validation software counts each registration associated with a course and cross-checks the total it calculates from the Registration File with the total enrollment reported in Course File. If the two results are different, an error is generated.

Correcting data errors and miscodings can be done in a number of ways. If the error results from incorrect data in your institution's student information system, you always should correct it there and then extract the data again as described in part 1A above. If the error is not a miscoding in the institutional files, then it can be corrected using an editor (e.g., AmCyber's MultiEdit). This method enables you to correct data that is already in ADHE's SIS format, and the extraction process does not have to be repeated. Use this approach **ONLY** if the errors are not in your institution's system, since any extractions made at a later date will reappear in your ADHE data. *Always go back and fix the problem at its source;* shortcutting the process only results in more problems in the long run.

After correcting all errors reported on the error list, and after identifying and correcting errors found in your queries and reports, run the data through the validation program again. Be advised that this step may have to be repeated multiple times as you progress through the file preparation process in making error corrections. Save your work after you complete each cycle of corrections, but if you save multiple versions of the file, be sure to begin with the most recent version of the file. Once the validation report indicates "No Errors Recorded" and you feel comfortable with the results of the queries and reports, you are ready to submit the files to ADHE.

Finally, remember that ultimate responsibility for the validity and integrity of the data files rests with the institutional staff. The accuracy of ADHE's statewide database is no greater than the combined accuracy of the files coming from all of the institutions.

# File Name Conventions

When the data are ready to submit, save a final version on your campus before sending it to ADHE. **You should save and archive all SIS submissions.** It has been necessary for some institutions to go back several academic years to make corrections. If you do not keep a copy, correcting problems could be problematic at best.

Before sending your data to ADHE, it is important to name the submission file properly. This seems like a small thing, but when dealing with the number of files ADHE does, it becomes a real issue. Sections A - C provide you with the information to properly name the submission file. For most institutions the submission files are small and require very little time to send to ADHE.

If your connection to the Internet is slow, or your submission is large you can zip the submission file. See Section A for the file naming conventions for zip files.

## A. Institutional File Name Conventions

<institutional abbr><CALENDAR year><term>.<submission type>

If your files are large, compress the data using the ZIP format. Create the submission file as documented before zipping. When the file is zipped name it using the format:

<institutional abbr><CALENDAR year><term>.zip

## B. File Submission Type (File Extension)

The file extension is a 3-letter abbreviation for the type of data being submitted per the following table. All institutions submitting files for validation through the Arkansas Higher Education Student Information System will use the ADHE web page set up for this purpose. No files will be accepted via the former FTP transfer system due to potential security failures.

### NOTE:

*ANNUAL* files (annual instructor, graduate, athlete, end of term, etc.) should be submitted as FOUR (4) separate files and NOT merged into regular term data submissions.

# File Name Conventions

## C. Filename Examples for Academic Year 2010/2011:

YY = 2-digit *calendar* year of data    T = term of data being reported

<b>Term Files</b>	<b>&lt;School Abbr&gt;YYT.&lt;Extension&gt;</b>
Summer II Regular Term File	<School Abbr>100.DAT
Fall Regular Term File	<School Abbr>101.DAT
Spring Regular Term File	<School Abbr>112.DAT
Summer I Regular Term File	<School Abbr>113.DAT
Summer II End of Term	<School Abbr>100.EOT
Fall 2009 End of Term	<School Abbr>101.EOT
Spring 2010 End of Term	<School Abbr>112.EOT
Summer I 2010 End of Term	<School Abbr>113.EOT
Summer II Private/Student End of Term*	<School Abbr>100.PEOT
Fall 2009 Private/Student End of Term*	<School Abbr>101.PEOT
Spring 2010 Private/Student End of Term*	<School Abbr>112.PEOT
Summer I 2010 Private/Student End of Term*	<School Abbr>113.PEOT
<b>Workforce files report data for the <i>previous</i> term</b>	<b>&lt;School Abbr&gt;YYT.WRK</b>
Summer II Work Force	<School Abbr>103.WRK
Fall 2009 Work Force	<School Abbr>100.WRK
Spring 2010 Work Force	<School Abbr>111.WRK
Summer I 2010 Work Force	<School Abbr>112.WRK
<b>Annual Files</b>	<b>&lt;School Abbr&gt;YY.&lt;Extension&gt;</b>
Annual Instructor	<School Abbr>10.ANN
Athlete	<School Abbr>10.ATH
Graduated Student (Academic Year of all Students graduating between 1 July 2009 and 30 June 2010)	<School Abbr>11.GRD
Financial Aid	<School Abbr>11.FAID

\* Private/Student End-of-Term files are required by the private/independent institutions including BSN, JSN, CRTI, and NTI.

# Header and Trailer Record Layout

## Header Record Layout

Field Name	Field #	Length	Valid Choices
Record Type	1	2	01
Data Type	3	1	1 – Student 2 – Graduate 3 – Athlete 4 – Instructor 5 – Credit Course 6 – Registration 7 – Annual Instructor 9 – End of Term C – ID Change N – Workforce <b>F – Financial Aid</b> <b>P – Private EOT</b>
College FICE Code	4	6	000001 - 999999
Academic Year	10	4	YYYY
Filler	14	2	spaces

## Trailer Record Layout

Field Name	Field #	Length	Valid Choices
Record Type	1	2	99
Data Type	3	1	1 – Student 2 – Graduate 3 – Athlete 4 – Instructor 5 – Credit Course 6 – Registration 7 – Annual Instructor 9 – End of Term C – ID Change N – Workforce <b>F – Financial Aid</b> <b>P – Private EOT</b>

To let the software know it has come to the end of a file segment, a trailer record must accompany EACH header record. In the case of annual reports, that is usually the entire report.

Column 1: ALL trailer records should begin with 99 regardless of the file type.

Column 3: the type of file. In the case of the Workforce File it would be N.

As a further note, in the term files such as fall, there may be *several* header and trailer records.

Examples:

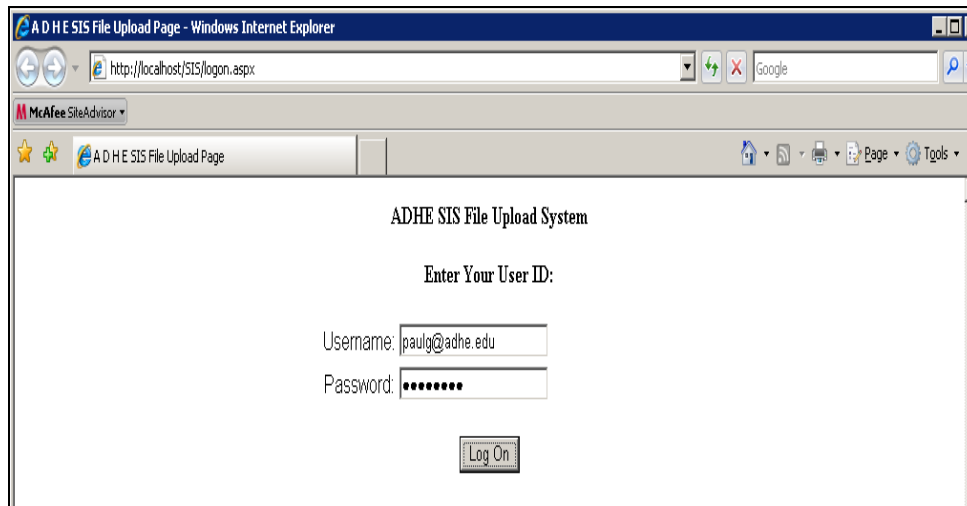
The trailer for the end of the student file would be: 991 The registration trailer would look like: 996

# Accessing The Upload System

## Log On

The only software requirement for accessing the upload system is a current web browser. The url for accessing the entry page is: SIS.ADHE.EDU

The first page the user will encounter is the logon page.



The Log On Page, Figure 1

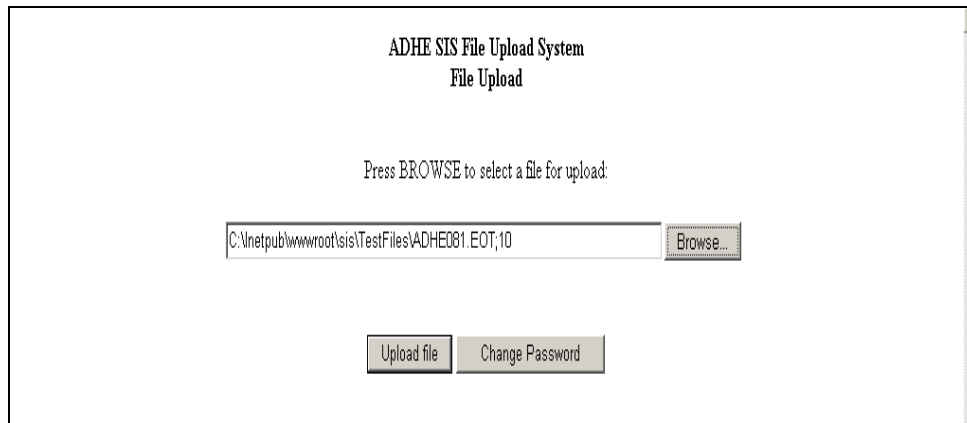
The log on page has two edit boxes for entering the user name and password. The user name is the e-mail address of the person or persons authorized by the institution to upload student information files. The initial user password will be assigned by ADHE. Each submitting institution is responsible for informing ADHE of any personnel changes for persons authorized to access the page for file uploading. The institution has the responsibility of informing ADHE that individuals need to be removed from access to the upload web page. Institutions are responsible for the security of their respective passwords.

After user name and password have been entered, click on the Log On button. If the user name and password are correct, the page will be automatically transferred to a secure sockets layer (SSL) security protocol. This is a further security measure to ensure that data being submitted is secure from capture by none authorized sources.

If the log in is successful , a new page for file upload will be opened. If the log in fails, the user is informed of this fact. Log on failures may be caused by typographical errors, the deletion of the user as an authorized user or system failures. Contact ADHE if you are experiencing problems in logging into the web site.

# File Upload Procedure

## File Upload Procedure



File Upload Page, Figure 2

The file upload page is used to actually transfer the file from your computer or network to ADHE. There are two ways this can be done via the page.

If you know the path where the file is located on your computer or the network from which you are uploading the file, the full path and name may be typed into the text box.

For example, if the file was located on your local hard drive in a folder named ADHE Files, the full path and file would be entered in the edit box: C:\ADHEFile\file name

The browse button may be clicked and a file dialog box will open. The file can be located using this control and when it is located, click on the file and the path should appear in the edit box.

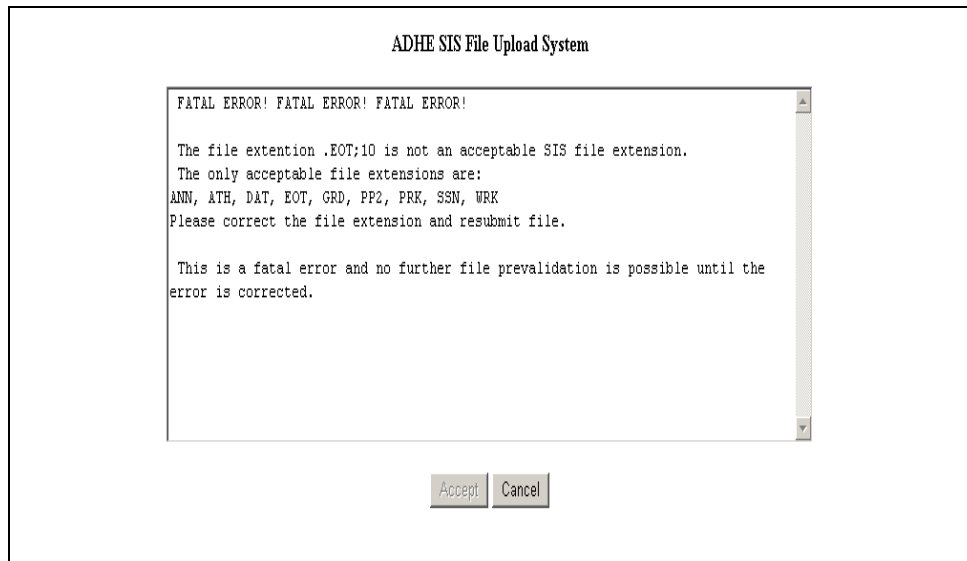
Move to the upload button and click on the upload button.

Zipped files may also be submitted. The standard zip compression methods should be used and the zip file name should be in the form <school abbreviation>. zip. The program behind the web page will decompress and remove the compressed file. There is no further action required on the part of the user.

If an unzipping error occurs, the user will be notified and the currently loaded zip file will be deleted automatically from the web page storage area. If the file is successfully decompressed or unzipped, the user will be taken to the next page automatically.

# File Upload Procedure

## Upload Warnings and Error Messages



Incorrect File Extension Error Page, Figure 3

After the file has been uploaded, the first pre-validation which occurs is a check of the file extension. If the file does not have an acceptable extension, the user is notified of this fact and must click the cancel button. File extensions such as .EOT.TXT, .DAT; 10, .ATH.2 or any other file extension outside the acceptable ADHE authorized file extensions will not be permitted. The file name must be corrected and uploaded again.

If the file extension is correct, the user is presented with a page informing the user of the period of time covered by the file and the type of file being submitted. If the file meets the correct file naming criteria but is designated for a term or year other than that intended by the user and the file passes all pre-validation, the file will be treated as a correctly named file and will over write previous data submitted.

If the user is not sure the file name is correct, the cancel button may be clicked to return the user to the upload page. The file currently on the web storage area will be deleted. The user may resubmit a corrected file name at this time.

If the user feels confident the file name is for the period described on the page, the accept button should be clicked.

# File Upload Procedure

## Upload Warnings and Error Messages



File Warning Page, Figure 4.



File Error Page, Figure 5.

## File Error Messages

A variety of characteristics are checked within the first 2 lines of the file. If all tests are passed successfully, the user is informed of this fact and an e-mail message is simultaneously sent to the submitting institution to all addressees of record in the ADHE SIS database.

The uploaded file is next transferred automatically to the appropriate ADHE storage area for the file. The file will then be validated through the SIS validation process.

If errors are encountered, the user will be provided a screen showing the errors and a simultaneous e-mail error message will be generated.

## Important Note!

Only one file may be uploaded at a time. After either a final notification of a successful pre-validation test or the presence of errors is presented to the user, the return button should be clicked if further uploads are to be performed. The return button returns the user to the upload page for another file upload. If no further file uploads are to be performed, the browser may be closed at this point.

# Viewing and Printing File Error Submission Reports

After a submitted file has been validated at the Department of Higher Education, an automatically generated summary report will be sent to all registered users at the submitting institution. The summary report will appear similar to the following:

Arkansas Department of Higher Education  
Student Information System Data Validation  
Error Listing --- fall 2007  
Submission Validated and Loaded  
<Institution name goes here>  
13:9 April 9, 2008

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## Submission Report Summaries

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Total Records Submitted: 5865  
Total Records Inserted: 5857  
Total Header Trailers: 8  
Total Warnings: 0  
Total Errors: 61  
Total Student Records: 1558  
Total Credit Course Records: 293  
Total Registration Records: 3899  
Total End of Term Records: 0  
Total Graduate Records: 24  
Total Athlete Records: 0  
Total Annual Instructor Records: 0

For a detailed listing go to <https://Sis.adhe.edu>.

This summary will serve as the notice to the institution that the file named in the summary has been validated by ADHE. In order to review the detailed error report, do the following:

Open your browser and go to <https://sis.adhe.edu> .

The log in page for the SIS upload page should appear. Enter the same user name and password that is used to upload a SIS file submission.

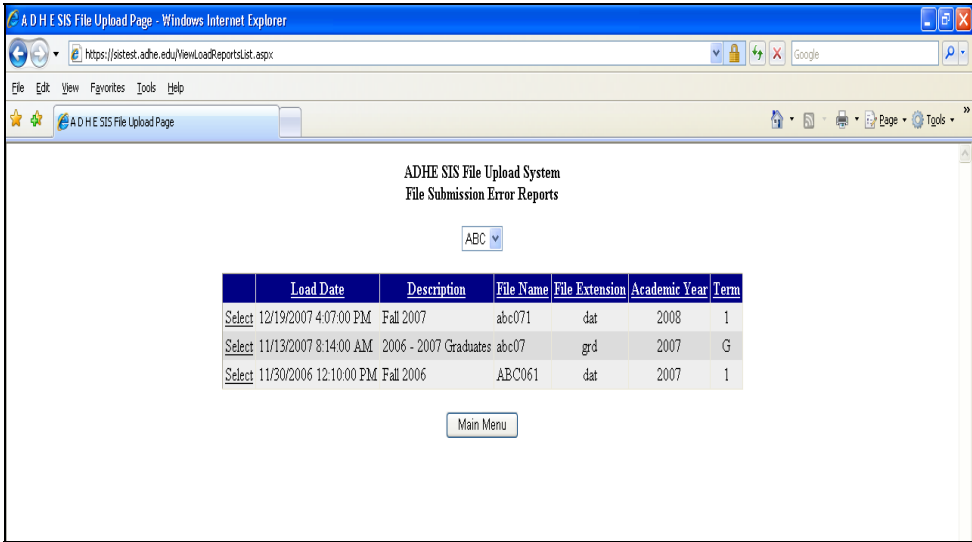
If the log in is successful, the file upload page should appear. To view the file /files error report, click on the "View File Error Reports" button.

# Viewing and Printing File Error Submission Reports

## File Selection Display Page

After the view error report button is clicked, a new page is presented. A grid of each file submitted for the past academic year is shown. Files are displayed in a default mode of most recently submitted file based on the file load date. Files may also be sorted with respect to the other parameters such as academic year, term, or file type.

In order to select the output of a particular report, the select link is clicked and the error report for that specific file is displayed. Each time a new select is clicked, a new file error report is displayed for the file selected. Files displayed are the most recently validated file submitted. Any number of files can be displayed one at a time by clicking select on the grid.



ADHE SIS File Upload System  
File Submission Error Reports

ABC

	Load Date	Description	File Name	File Extension	Academic Year	Term
Select	12/19/2007 4:07:00 PM	Fall 2007	abc071	dat	2008	1
Select	11/13/2007 8:14:00 AM	2006 - 2007 Graduates	abc07	grd	2007	G
Select	11/30/2006 12:10:00 PM	Fall 2006	ABC061	dat	2007	1

Main Menu

Screen shot of File Selection display Page

## Printing the Report

There are 2 basic methods for printing the display to a file.

Right click on the display page and select print in the drop down menu. The entire page with grid and error display will be sent to the printer which is the default printer connected to the computer on which you are displaying the report.

If only the actual content of the error report are desired for printing, begin selecting by holding down the left mouse button and rolling the mouse to the last location which is to be printed.

After highlighting the material to be printed, right-click in the selected material area and click print in the drop down menu. In the dialog box which appears, choose selection to print only the selected material you wish printed and next click print. Continue this process for each file desired to be printed. When you are finished viewing or printing error reports, click the main menu button to return to the main upload page.

# Off-Schedule Reporting

If a class starts later than the 11 day of classes, the course is considered off-schedule. Thus, the course record is reported in the off-schedule term that is most closely associated with the courses starting date. For a fall off-schedule class, the course record, along with an instructor record, one or more student records, and one or more registration records are submitted together as term 5 with the spring submission. Even though the records are included in the spring submission, they are part of a different term.

The simplest way to think of an off-schedule submission is as a completely separate term. If the course is off-schedule, you also must treat the instructor, student and registration records as if they fall into a separate term. For example, a student takes three courses in the fall semester and also registers for a class that begins on October 25. He/she will appear in two separate term submissions: term 1 and term 5. He/she will have a term 1 student record and three registration records for term 1. He/she will also have a term 5 student record and one term 5 registration record. The term 5 records, both student and registration, will appear in the spring submission file along with the associated course and instructor records.

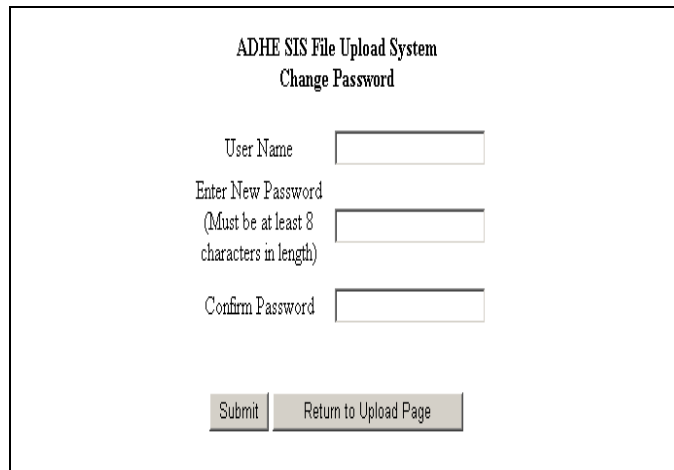
As a second example, a student registers only for fall courses beginning on October 10. All associated records for him/her (student, course, registration, and instructor) are coded as 5, and he/she would not have any on-schedule records.

When merging the off-schedule and on-schedule of the following term, merge the data to put the current term on-schedule of a particular type followed by the off-schedule of the preceding semester between the header and trailer for that record type. The figure below presents the layout:

011001101	Student header record
021.....2	Spring on-schedule (term 2) student record
021.....2	Spring on-schedule (term 2) student record
021.....2	Spring on-schedule (term 2) student record
021.....5	Fall off-schedule (term 5) student record
021.....5	Fall off-schedule (term 5) student record
991000005	Student trailer record

# Changing Passwords

## Changing Passwords



The screenshot shows a web form titled "ADHE SIS File Upload System" with a subtitle "Change Password". The form contains three input fields: "User Name", "Enter New Password (Must be at least 8 characters in length)", and "Confirm Password". Below the input fields are two buttons: "Submit" and "Return to Upload Page".

Changing Passwords, Figure 6.

Once a user has logged in to the system, the user may change their password. There is a change password button on the file upload page. By clicking the change password button, the user is relocated to the change password page. The user name is automatically transferred to the change password page along with the old password. The user does not need to enter either.

Two edit boxes are presented to the user. The new password is entered into each of the two edit boxes. The new password will not be visible. Passwords must be at least 8 characters in length and may be any alpha-numeric character as well as punctuation symbols.

Do not use common names, birth dates or other personal information which could be guessed by someone else. Use good password security. Be sure to write your new password down and keep it in a secure location. ADHE cannot give you the forgotten password since the passwords are hashed for security purposes. If the password is lost or forgotten, the user will have to contact ADHE to receive a temporary password to reenter the system.

After the new password has been entered in both edit boxes, click the submit button to initiate the new password. If the password is less than 8 characters in length or the two new password entries do not match, the user is informed of this fact and the new password must be reentered.

If the password is successfully entered into the system, the user will be informed. Click the return button to return to the file upload page or exit the web site by closing the browser.

# ID Change for Student or Instructor Record Layout

When possible, all past invalid student identification numbers need to be updated with valid social security numbers using the ID Change record if students are to be tracked.\*

Field Name	Field #	Length	Valid Choices
Record Header	1	2	02
Record Type	3	1	C
Original Social Security Number	4	9	
New Social Security Number	13	9	
Date of Birth	22	8	MMDDYYYY
Change Record Type	30	1	1 or 4

The file naming convention is: <institutional abbr>.SSN

The Identification Number Change File includes all students and/or instructors whose social security number or college identification number has changed, for any reason, from previous submissions.

\*International students with student visas may not have valid SSNs. Also, 5 U.S.C. §552a allows students to withhold their SSN.

The 'number' is **numeric**.

Provide a Social Security Number in the format:

XXXYYZZZZ

The rules for valid SSNs are available on the SSA website: <http://ssa.gov> by searching for 'invalid number'.

According to SSA, these rules constitute **INVALID** numbers:

Left most 3 digits (xxx) = 000

Left most 3 digits (xxx) between 773 and 799 (inclusive)

Left most 3 digits (xxx) between 800 and 899 (inclusive)

Left most 3 digits (xxx) between 900 and 999 (inclusive)

Left most 3 digits (xxx) = 666

Middle 2 digits (yy) = 00

Right most 4 digits (zzzz) = 0000

# ID Change for Student or Instructor Field Definitions

Field Name	Field #	Length	Valid Choices
Record Type	1	2	Enter 02 for detail record
Data Type	3	1	Enter C for identification number change
Original Identification Number	4	9	Enter the social security number or college identification number reported in previous submissions
New Identification Number	13	9	Enter the corrected or current social security number or college identification number reported in previous submissions.
Date of Birth	22	8	Enter the date of birth for the student or instructor's date. If the birth date is known, use the first two positions to designate the month, the second two positions for the day, and the last four positions for the year. Ex: MMDDYYYY where: MM = month (01-12) DD = day (01-31) YYYY = year (0000 – 9999) If birth date is unknown, enter eight zeros.
Change of Record Type	30	1	Enter the type of identification number type to be changed. 1 = Student Record 4 = Instructor Record  <b>Note:</b> 1. Student changes will be applied to all instances of the original number at the reporting institution in the: Student Table, Graduated Student Table, Athlete Table, and Registration Table.  2. Instructor changes will be applied to all instances of the original number at the reporting institution in the: Instructor Table, Annual Instructor Table, and Course Table.