

# FALCON-EduCase User Guide:

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## Content:

You can go through the User Guide from A to Z or right click on the section of interest in the content list and click on “open hyperlink”.

[1. Introduction to FALCON-Educase](#)

[2. How to get started with FALCON-EduCase](#)

[Additional resource file](#)

[3. Contouring Tools](#)

[Viewing Authors contours and User's Practice contours](#)

[Drawing Contour Tools](#)

[Main Image Pane](#)

[4. View Tools](#)

## Introduction to FALCON-Educase

FALCON-EduCase is an online training tool for educational purposes at ESTRO courses, meetings, workshops and (individual) training at home. The FALCON-EduCase interface is not a treatment planning system but a user friendly educational instrument for training radiotherapy professionals in contouring tumor volumes, target areas, normal structures and OAR. Thus you may not find features such as auto-contouring, interpolation tools, expansion tools etc.

## How to get started with FALCON-EduCase

You do not need specific software other than Adobe Flash Player, which you can download for free from the internet. After having done that (if you do not already have it), go to <http://estro.educase.com> click on “member login” and type your username and password in the



pop-up window. A new page will show up. At the bottom of the page you will find the available ‘Cases for Delineation.’ Click on the type of cases you want to see and you will be

presented to all the available cases within the selected group. For opening a specific case click on “Launch the case viewer” and you will be directed to the case. Allow some time for the data to be fully loaded. Sometimes a second password is needed – this is provided to you by the ESTRO course coordinators.

### Additional resource files

For some cases additional resource files are available for download, such as additional DICOM images, pdf files or power-points. Resource files are indicated under the case name. Click the file to download. Some hospital firewalls may prohibit the download of files, and it may be necessary to perform the download outside the hospital.

Now you are ready to get started!

## Contouring Tools

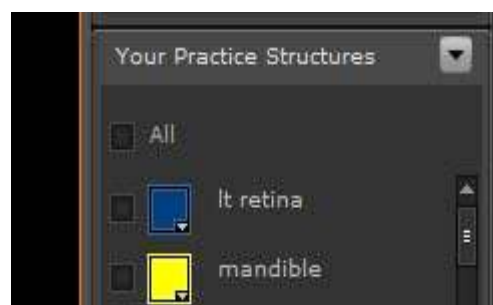
### Viewing Authors contours and User’s Practice contours

On the right menu column you will see an “Author Structures” section on top and “Your Practice Structures” on the bottom. *(The “authors contours” refer to the teacher/expert contours and the “practice contours” will refer to user (student) that is logged in)* Author’s contours can be toggled on/off by clicking the “All” checkbox or each ROI individually. “Your Practice Structures” can be toggled on/off by clicking the “All” checkbox or each ROI individually.

**Clicking “Your Practice Structures” does not initiate contouring. It is only for viewing. For contouring the structures you must select the ROI from the pull down menu in the Contouring Tools menu.**



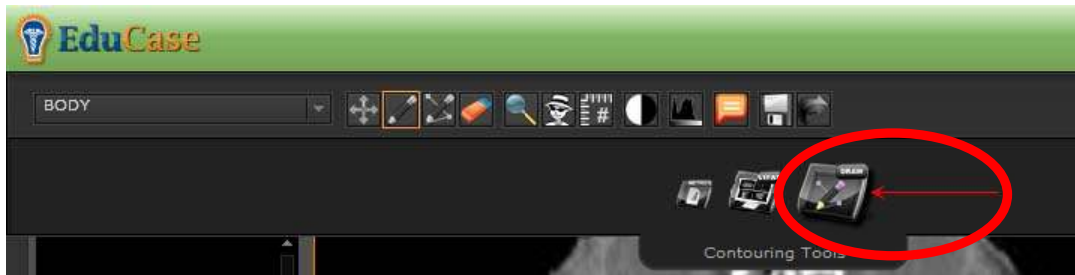
General User View



All User’s Drawn Contours

### Drawing Contour Tools

To find the contouring tools, maximize your screen and roll over the “Tool Console” tab at the top of your CT or MR scan to bring up the Tool folder options. Click the “Contouring Tools” folder to initiate the contouring tool features.



### “Contouring Tools” menu include:

1. ROI selection pull down menu (This is to select the ROI you wish to contour): you find the menu in the upper left corner of your screen.



2. If a user selects a drawing tool icon, such as the freehand or point-to-point tool, an alert will prompt the user to select a ROI from the pulldown menu



3. Pan Tool: Pans image in main image pane
4. Free hand drawing tool: Used to draw contour after ROI has been selected from ROI pull down menu.
5. The free hand drawing tool also allows to expand and cut a contour:





- To "cut" a contour, begin drawing outside the contour and draw inside the contour you wish to cut. Complete your cut by drawing outside again and let go of mouse to complete your cut.
- To expand your contour, begin drawing inside the contour and draw outside the contour you wish to expand. Complete your expansion by drawing inside again and let go of mouse to complete your expansion.

6. Point-to-Point drawing tool: Used to draw the contour after ROI has been selected from ROI pull down menu. To complete drawing you must click on first point to close the contour loop. Each point can be dragged to optimize contour once loop is closed. A complete contour must have a minimum of 4 clicks (3 point contour) to close the contour loop.



7. You can easily switch from freehand to Point-to-Point tool which allows for more accurate drawing and fine tune editing.

8. For creating an isotropic expansion press the button seen at your right. Choose "select source contour", next type in the requested expansion in mm and then the name of the target contour (the expanded contour).



9. The interpolate button allows you to interpolate between already drawn contours of an selected ROI. Just as with a regular TPS, the interpolation will be more precise if interpolation is done over a few sections.



10. Eraser tool: Click the eraser icon to remove unwanted contours. Each click removes the latest drawn contour. Erasing contours only removes contour on the slice you are on.



11. Magnifying Glass: Click icon to initiate small magnification feature on main image pane. A box will appear to drag over section of image to be magnified. Mouse scroll can change magnification.



12. Spy Glass: Allows user to view through primary image and see secondary image layered below.



13. Ruler measure length in Millimeter based on location of dragging icons on main image screen



14. DVH Chart: The Dose Volume Histogram chart displays the chart lines associated with the ROIs in both Cumulative and Differential values.

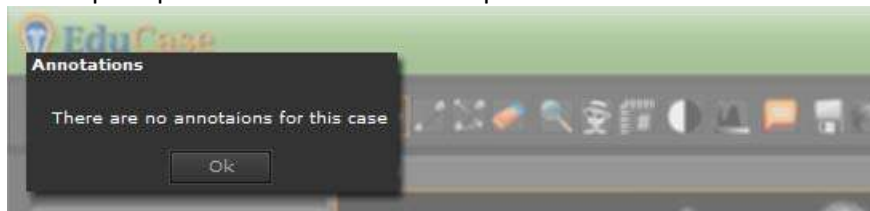


This function is not available in all cases.

15. Window Level: Allows user to change window levels for image data sets using predefined window levels or manual adjustment on main image pane once icon is initiated.



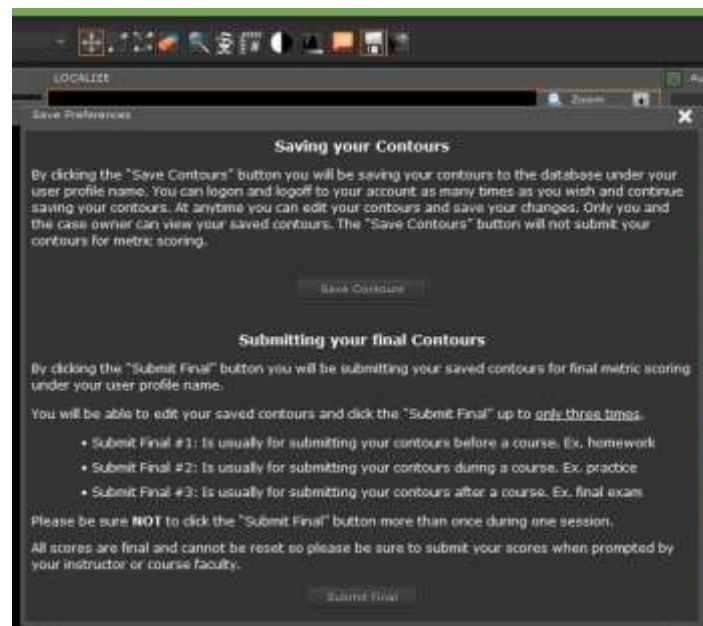
16. Click the Annotation icon, to toggle on/off annotations that were created by the case owner and attached to individual contours. User will be prompted if annotations are not present



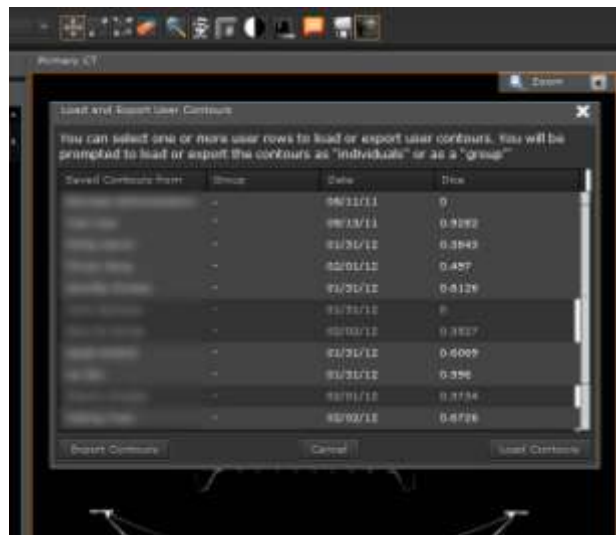
17. "Save Contours": By clicking this button you will be prompted with a popup window to save your contours or submit your final contours for scoring



18. "Save Contours" and "Submit Final" contours popup window:
- Click the "Save Contours" icon, to initiate the Save window on the main image.
  - The "Save Contours" button allows users to save their contours as they progress through a case. Users can return to the same case at a later date, start where they left off from the last time they "Saved"
  - The "Submit Final" button save the user's contours, calculates the user's Area Domain and Line Domain scores, and takes the user to the default page of the Area Domain metric section.

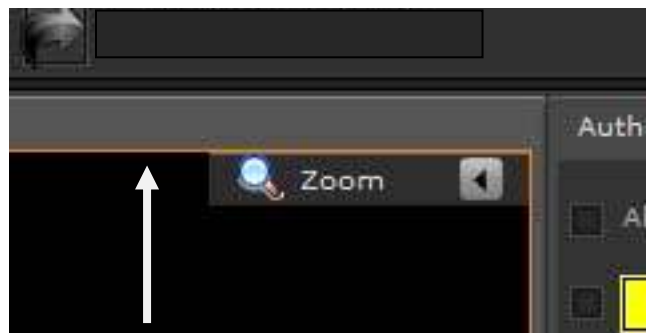


19. Load Contours (Case Owners only): This button allows case owners to select individuals or groups from the master saved list and toggle on/off their contours from the contouring menu column.



### “Main Image Pane”

1. Initiate Main Image Pane: You must click on the Main Image Pane in order to interact with the image. An orange border will appear when image pane is active.



2. **Pan image:** Panning image is set as default. Once a user clicks a contouring tool icon, example: *Freehand drawing*, they must click the “pan” icon again to pan an image on the main image pane
3. **Zoom image:**
  - a. Click on Main Image Pane to initiate “Zoom” menu bar Click “Zoom” menu bar to initiate zoom feature
  - b. Drag arrow or click line to zoom image in and out
  - c. Click “Zoom” menu bar again to close



4. Navigate image slices: You go navigate from slice to slice by using any of the three following methods:

a. Image Pane: slice number navigation is located at the bottom of the main image pane. Can be viewed when main image pane is initiated



b. Mouse Scroll: Slice can be navigated up or down by using the mouse scroll wheel



c. Thumbnails: You can select a specific numbered slice by choosing one of the thumbnail images on the left-hand "Slices" menu bar



## View Tools

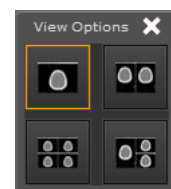
### View Tools Icon



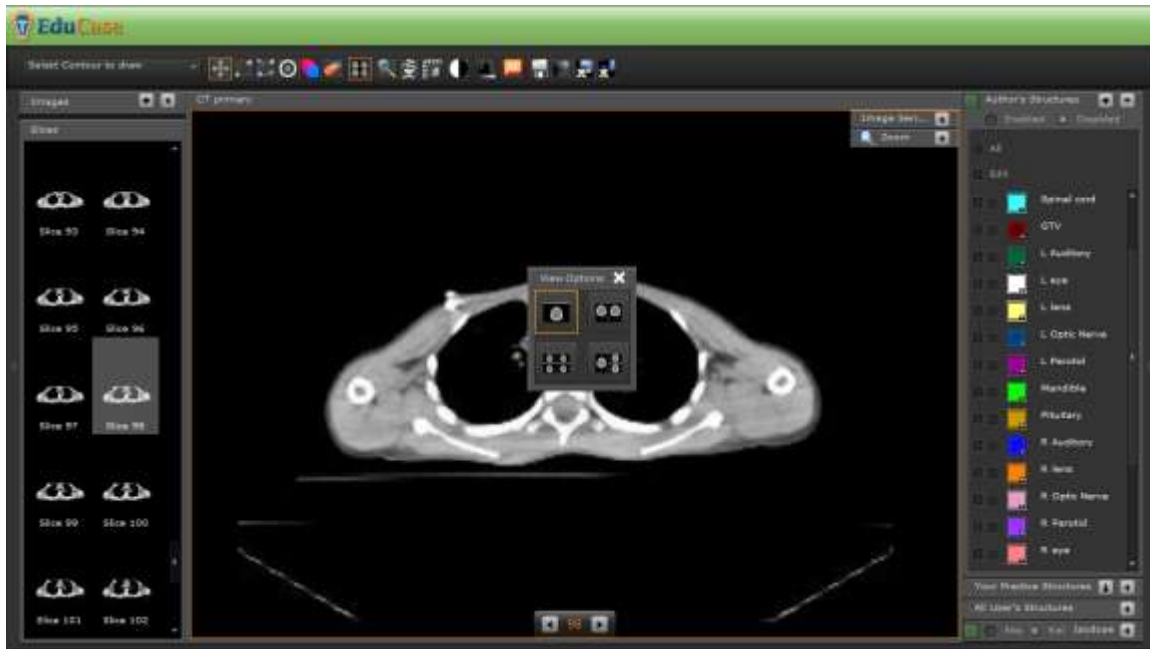
The "View Tools" icon allows the user to view reconstructions in one plane or multiple planes. Once viewed as preferred by the user, contouring tools are deployed to execute the segmentation.

### Single Window mode

This is the default mode for viewing each axial reconstruction in a single window.

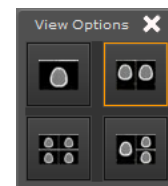






## Two Window mode

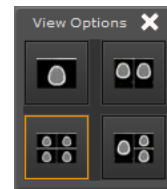
In this example we have opened two windows, revealed the primary CT from the Image Series controls in the first window, and revealed only the secondary CT/PET images in the second window.





### Four Window mode

In this example we have opened the four window mode and revealed only one of the data sets from the Image Series controls for each window.



### Orthogonal Window mode

Orthogonal view allows users to navigate the Axial, Sagittal, and Coronal planes for any case. Currently secondary image sets can only be viewed in the primary Axial plane.

- Users can drag and drop each smaller plane into the larger primary plane window by holding your mouse on the header bar and dragging the image to the larger plane.
- Navigation: Users can hold down the space bar for guidelines navigation or rollover each plane and use the mouse roller to scroll through each of the individual plane slices.
- Sagittal view orientation: Users can rotate the Sagittal image plane by clicking the rotate icon in the Sagittal view header bar

