Sketching the Deep Sky

Recording what you see through the telescope is an important part of amateur observing; it is a permanent record of what the night sky looks like and the easiest way to do this is by sketching.
Of course, other means of recording are possible such as conventional long exposure photography and web cam or CCD imaging, but these methods require expensive equipment and an observatory to store them in, sketching only requires pens, pencils, and paper.
Sketching need not be difficult, it doesn't matter if you are not proficient at putting pencil to paper as we don't need to draw a masterpiece but as long as the dimensions and placement of detail are correct and the field stars accurately placed it will serve as a valuable observation.
In addition, visually recording what you see eventually makes you a better observer; you don't just look at an object but actually observe it and after a time the eye begins to pick out minute detail, perhaps the hint of spiral structure within a galaxy until a few months ago was a featureless haze with your inexperienced eye.

Before we can start sketching, we need certain items but always try to use artist quality materials because they use pure pigments that give the best results.
First, you will need some blank pure white paper; a spiral bound pad of cartridge paper is perfect but try to get a pad with at least 180gsm weight, thicker paper will take more punishment from rubbing and blending techniques.
Visually nebulosity is diffuse and often quite delicate looking so to represent this softness we need a 3B pencil. The B series have soft graphite, which smudge easily to represent nebulosity, do not get an H series as these pencils are for technical drawing and as a result, the graphite is far too hard for making deep sky observations.
As even the best artists make mistakes you will need an eraser, a soft putty rubber from an art store is best as these are easily moulded into whatever shape you like and can rub out without smudging and finally for drawing the stars use a fine black technical pen with a nib 0.5mm in diameter.

When starting to sketch a deep sky object (a galaxy in this case), first have a circle drawn onto your paper for your telescopes field of view, then using the technical pen, position the brighter stars on the paper. Be very careful and take your time when doing this to try to get the positions of the field stars accurate then position the fainter stars in the field.
Once this done gently using the side of the pencil graphite to roughly draw in the shape of the object under study then very gently rub the graphite with your finger and blend it into nebulosity.
Continue laying graphite onto the drawing and continue to blend with your finger gradually building up the brightness until your sketch is accurate to the object in the eyepiece.
Next draw in any interesting details you can see like a brighter nucleus or bright HII regions with the pencil or use the eraser to put in any dark dustlanes if visible or features of that nature.
You should now have a completed sketch of a galaxy but there are many different types of deep sky objects that can be sketched, below is a guide on how to draw the other types of celestial wonders.

OPEN CLUSTERS
Open clusters are straight foreword as they are only stars; the only difficulty you can have is the complexity of some clusters like M11 or M37.
The only advice here is to take your time and persevere.

GLOBULAR CLUSTERS
Globulars are quite easy as there are far to many stars involved when resolved that its impossible to accurately position in every star so you have to represent what you see.

Start by using the pencil and draw a circular glow and blend it with your finger, this represents the halo of the globular then depending how well resolved the object is in your telescope, use the pen to make the centre of the globular granular and then position the outer stars making careful note of features such as arms and clumping of stars etc.

EMISSION NEBULAE

Emission nebulae can be very difficult to draw especially in a large aperture or with the use of nebulas filters as the complexity can be staggering. The best way to sketch them is using the same method as for galaxies but be prepared to spend a long time sketching something like M42.

PLANETARY NEBULAE

Planetary nebulae are a mixed bag; small apertures usually show planetary nebulae as small puffballs or stellar points but through larger apertures especially using nebula nebula filters, the detail can be staggering.
Sketch as a galaxy or open cluster if stellar.

REFLECTION NEBULAE

Reflection nebulae are usually faint and don't show much detail in a typical amateur sized scope. Sketch as galaxies.

DARK NEBULAE

Dark nebulae are usually represented by a dashed line representing the shape of the object in a starfield as if drawing an open cluster.

RECORDING OBSERVATIONS

When your sketch is finished let the object drift through the telescope field until it exits and mark that point on your sketch as West, you now know the orientation of the sketch.
Also, write down the field of view of the eyepiece you used, the date and time in U.T., the instrument, aperture and F/Ratio of the telescope you used, not forgetting to mention the seeing, and transparency.
When describing an object mention the angular size of the object you drew, if you know the field of your eyepieces you can judge accurately the visual size of the object you are looking at.
Also mention the orientation of the object, when you know where west is on your sketch then this is easy.
When you write the description for the object, just try to put in a sentence about what you can see. Mention any areas of brightness (condensations) in the object; also mention any other details you may see like a stellar nucleus in a galaxy or any dark lanes. For open clusters try to make a star count and note any doubles or any colours in the stars.

If you follow these simple rules you will have produced a worthwhile observation which will be detailed enough to compare with other observations from other observers but best of all you will have your own view of the universe on hand to look at on those cloudy nights.