Analytical balances, especially the four or five place, digital or substitution balances, are capable of measuring the weight of an object to 0.0001 or even 0.00001 grams—i.e. (0.1 mg or 0.01 mg). These balances if properly calibrated and maintained are possibly the most accurate and precise measuring instrument found in any laboratory. Whether those balances might be in analytical, physical, advanced inorganic and organic and whether they might be in academic or in such industrial laboratories as: biotechnical, forensic, pharmaceutical or polymer laboratory.

Hence it is imperative that our shared analytical balances be kept in excellent operating condition. I should be noted that each balance in the Advanced Chemistry Courses of the Dept. of Chemistry of UCONN is checked daily by a member of the teaching staff for its proper operation and general cleanliness. Also each year, an outside balance servicing company is hired to come in to properly service and if necessarily perform major repair on each balance.

It is absolutely imperative that each student needs to first hear “Introductory Balance Talk” and do the introductory about five minute weighing experiment conducted by a qualified laboratory instructor or teaching assistant. Then each student needs to adhere to the rules that are given below. Repeated failure to do so, after having received a clear warning from their proper teaching staff member, will cause that student to be assigned to do weightings on the older substitution balance, (which takes about 2.0 min.) to accomplish the same weighing measurement that otherwise could be done on the newer digital balances (within about 30 seconds).
(Note these substitution balances are just as accurate but perhaps not as reproducible as the newer digital balances). And as is evident take at least four time longer to achieve the same weighing.

**General Rules for the Use of Analytical Balances**

1. No one may use a balance without first hearing an “introductory balance talk” given by a laboratory instructor or teaching assistant.

2. Use only the balance to which you are assigned. This must be done even if the assigned balance is in use by another assignee at this particular time. (Remember it usually takes within 30 seconds to accomplish one weighing or only a matter of a few minutes to complete a series of weighings). Posted near the balance will be a list of those students that have been assigned to use that particular balance for the current semester.

3. If there seems to be a problem with the balance, report it immediately, to the instructor or teaching assistant. **Do not use another balance**, unless instructed to do so.

4. **It is imperative that you keep the balance and the immediate area around the balance clean!** Clean-up all chemical spills and excess chemical after each use of the balance. Do not leave old Kimwipes® or crumpled papers on the balance table.

5. When the balances are not in use, the balance should be always turned-off and in the case of the substitution balances the beam arrested, all weights on zero and the doors closed.