***Lab Session Schedule***

*Overview: There are 15 lab sessions plus a Final Lab Practical Examination (16 total lab classes). The tasks you will need to complete during the 15 sessions include: two introductory exercises, dating of 17 tree cross sections, and preparation of the tree cores we will collect during the field trip. A general description of the sessions is included below.*

**Session 1 (8/27). Basic information/orientation.** Two paper exercises, one done in class (Bristlecone pine), the other, an archaeological site, started & perhaps finished in class by small working groups of 3-4 students or taken home.

*Purpose: To learn the procedure of* ***skeleton plotting*** *on paper “trees.”*

**Session 2 (9/3).** Have instructor check the take home paper archaeological site crossdating.Then begin skeleton plotting the first two tree cross sections ZMT08 & ZMT19. Both cross sections are Douglas-fir (*Pseudotsuga menziesii,* PSME). Finish and check ZMT08 & ZMT19 and make a composite master chronology from the four skeleton plots. Start two radii skeleton plots on ZMT18. This cross section is also Douglas-fir (PSME).

*Purpose: Make skeleton plots of real wood cross sections (two radii per sample). Construct a skeleton plot* ***composite master chronology*** *from these skeleton plots. Verify crossdating of ZMT18 on the composite master and to provide a crossdate for the damage/event seen in the wood.*

**Session 3 (9/10).** Finish and check ZMT18. Begin plotting two radii for ZMT 14, also a Douglas-fir

(PSME).

*Purpose: to compare the radii from ZMT14 to the composite master to obtain the correct crossdates and identify the* ***absent or locally absent rings****. Also, to extend the composite master back in time with the additional inner rings. Plot two radii from the top of ZMT14 to solve the dating problems of absent and locally absent rings from the lower portion of ZMT 14 (the concept of “stacked cones” of growth).*

**Session 4 (9/17).** Finish and check both cross sections from ZMT14. Plot two radii from ZMT31 a

Douglas-fir (PSME).

*Purpose: to solve* ***absent*** *and* ***locally absent*** *ring problems and confirm the inner portion of the composite master.*

**Session 5 (9/24).** Finish and check ZMT31. Plot two radii from ZMT108, also a Douglas fir (PSME).

*Purpose: to identify* ***false rings*** *and provide crossdates for events seen in the wood. ZMT108 is also intended to confirm and extend the composite master chronology.*

**Session 6 (10/1).** Finish and check ZMT108. Plot two radii from ZMT113.

*Purpose: to introduce a new species, ponderosa pine (Pinus ponderosa, PIPO) and compare the wood anatomy & the crossdating characteristics of this species to that of the Douglas-fir. Please take notice of the differences and similarities of these two species. Also note the locally absent, absent and*

*false rings in this cross section and how it confirms or varies from the composite master chronology.*

**Session 7 (10/8).** Finish and check ZMT113. Plot two radii from ZMT11. This is a ponderosa pine (PIPO).

*Purpose: to solve locally absent and absent ring problems and* ***injury/events*** *seen in*

*the wood and to compare ZMT11 & ZMT113 to each other and to the previous samples of*

*Douglas-fir. Also, to add pertinent information and confirm the inner portion of the composite*

*master chronology.*

**Session 8 (10/15).** Finish and check ZMT11. Plot two radii from ZMT39.

*Purpose: to introduce a new species and it wood anatomy and crossdating characteristics. This is a pinyon pine (Pinus edulis PIED). Please notice the differences between Douglas-fir, ponderosa pine and pinyon pine. This piece will also demonstrate that climatically* ***complacent*** *ring series can be as difficult to crossdate as climatically sensitive ring series and to also demonstrate ecological amplitude.*

**Session 9 (10/22).** Finish and check ZMT39. Plot two radii form ZMT42. This is a pinyon pine(PIED).

*Purpose: to extend the composite master chronology and to solve somewhat complex locally absent and absent ring problems and identify and crossdate injury/events in the wood of the cross section.*

*Some portion of this lab session will be devoted to the glue mounting of increment cores collected on the field trip.*

**Session 10 (10/29).** Finish and check ZMT42. Plot two radii on ZMT04 and two radii on ZMT15.

These two cross sections are from Rocky Mountain juniper (*Juniperus scopulorum* JUSC).

*Purpose: to introduce a new species that is fairly different in appearance from the previous*

*three(3) species examined, but will still crossdate on the composite master chronology. These*

*juniper trees have some very “real” appearing false rings, but using information from many of*

*the previous cross sections plus the crossdating of the composite master these false ring problems*

*can be solved. Some portion of this lab session will be devoted to the surfacing of the increment cores collected on the field trip.*

**Session 11 (11/5).** Finish and check ZMT04 & ZMT15. Plot two radii on BLF01 and two radii

on BLF24. These two cross sections are from quaking aspen (*Populus tremuloides* POTR).

*Purpose: These cross sections are not only a different species. They are from an entirely*

*different plant family. Up to this point all the samples were from conifers in the gymnosperms.*

*These quaking aspens are diffuse porous wood angiosperms. They will however, crossdate with*

*the composite master chronology.*

**Session 12 (11/12).** Finish and check BLF01 & BLF24. Plot two radii from ZMT05 and ZMT22.

*Purpose: These two cross sections are from gambel oak (Quercus gambelii QUGA), which is a*

*ring porous wood angiosperm. The “search image” for rings in oak can initially be confusing.*

*However, these cross sections can also be crossdated using the composite master chronology*

*though they do have some specific problems that need to be explained when plotting them.*

**Session 13 (11/19).** Finish and check ZMT05 & ZMT22.

*Purpose:* This will end the required lab exercise sets. This leaves Sessions 14 & 15 to work on student projects or special applications such as archaeology, ecology eg. fire history, geomorphology, etc.

*It should be noted that some cross sections (i.e. ZMT14, 11, 42 and perhaps some other sections) might need more than one lab session to complete so that Lab Sessions 14 & 15 might be needed to finish the required exercise sets.*

**Session 14 (11/26).** Student projects or applications.

**Session 15 (12/3).** Student projects or applications and a review and preparation for the Lab Practical Exam.

**Session 16 (12/10).** The Laboratory Practical Examination.

Purpose: to use the methods and techniques learned during the previous sessions.