



VIRGINIA TECHTM

Developing Online Extension Courses

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Virginia Tech



Why create an online course?

What challenges do you run into?



How I use technology

- Social Media
 - [@VA turf](#) keeps all Virginia turfgrass industry professionals apprised of current trends, events, and topics in turfgrass management.
- Online Courses
 - Fertilizer Applicator Certification Training (eXtension Campus)
 - Nutrient Management Training
- Webinars
 - Turf Grass Tuesdays
 - CFA Recertification Training

Teaching with technology

- Our role in CALS-IT

Non-annotated Standards from the QM Higher Education Rubric, Fifth Edition

For more information or access to the full annotated QM Rubric visit www.qualitymatters.org or email info@qualitymatters.org

Standards	Points
Course Overview Introduction	<p>1.1 Instructions make clear how to get started and where to find various course components. 3</p> <p>1.2 Learners are introduced to the purpose and structure of the course. 3</p> <p>1.3 Etiquette expectations (sometimes called "netiquette") for online discussions, email, and other forms of communication are clearly stated. 2</p> <p>1.4 Course and/or institutional policies with which the learner is expected to comply are clearly stated, or a link to current policies is provided. 2</p> <p>1.5 Minimum technology requirements are clearly stated and instructions for use provided. 2</p> <p>1.6 Prerequisite knowledge in the discipline and/or any required competencies are clearly stated. 1</p> <p>1.7 Minimum technical skills expected of the learner are clearly stated. 1</p> <p>1.8 The self-introduction by the instructor is appropriate and is available online. 1</p> <p>1.9 Learners are asked to introduce themselves to the class. 1</p>
Learning Objectives (Competencies)	<p>2.1 The course learning objectives, or course/program competencies, describe outcomes that are measurable. 3</p> <p>2.2 The module/unit learning objectives or competencies describe outcomes that are measurable and consistent with the course-level objectives or competencies. 3</p> <p>2.3 All learning objectives or competencies are stated clearly and written from the learner's perspective. 3</p> <p>2.4 The relationship between learning objectives or competencies and course activities is clearly stated. 3</p> <p>2.5 The learning objectives or competencies are suited to the level of the course. 3</p>
Assessment and Measurement	<p>3.1 The assessments measure the stated learning objectives or competencies. 3</p> <p>3.2 The course grading policy is stated clearly. 3</p> <p>3.3 Specific and descriptive criteria are provided for the evaluation of learners' work and are tied to the course grading policy. 3</p> <p>3.4 The assessment instruments selected are sequenced, varied, and suited to the learner work being assessed. 2</p> <p>3.5 The course provides learners with multiple opportunities to track their learning progress. 2</p>
Instructional Materials	<p>4.1 The instructional materials contribute to the achievement of the stated course and module/unit learning objectives or competencies. 3</p> <p>4.2 Both the purpose of instructional materials and how the materials are to be used for learning activities are clearly explained. 3</p> <p>4.3 All instructional materials used in the course are appropriately cited. 2</p> <p>4.4 The instructional materials are current. 2</p> <p>4.5 A variety of instructional materials is used in the course. 2</p> <p>4.6 The distinction between required and optional materials is clearly explained. 1</p>
Course Activities and Learner Interaction	<p>5.1 The learning activities promote the achievement of the stated learning objectives or competencies. 3</p> <p>5.2 Learning activities provide opportunities for interaction that support active learning. 3</p> <p>5.3 The instructor's plan for classroom response time and feedback on assignments is clearly stated. 3</p> <p>5.4 The requirements for learner interaction are clearly stated. 2</p>
Course Technology	<p>6.1 The tools used in the course support the learning objectives and competencies. 3</p> <p>6.2 Course tools promote learner engagement and active learning. 3</p> <p>6.3 Technologies required in the course are readily obtainable. 2</p> <p>6.4 The course technologies are current. 1</p> <p>6.5 Links are provided to privacy policies for all external tools required in the course. 1</p>
Learner Support	<p>7.1 The course instructions articulate or link to a clear description of the technical support offered and how to obtain it. 3</p> <p>7.2 Course instructions articulate or link to the institution's accessibility policies and services. 3</p> <p>7.3 Course instructions articulate or link to an explanation of how the institution's academic support services and resources can help learners succeed in the course and how learners can obtain them. 2</p> <p>7.4 Course instructions articulate or link to an explanation of how the institution's student services and resources can help learners succeed and how learners can obtain them. 1</p>
Accessibility and Usability*	<p>8.1 Course navigation facilitates ease of use. 3</p> <p>8.2 Information is provided about the accessibility of all technologies required in the course. 3</p> <p>8.3 The course provides alternative means of access to course materials in formats that meet the needs of diverse learners. 2</p> <p>8.4 The course design facilitates readability. 2</p> <p>8.5 Course multimedia facilitate ease of use. 2</p>


* Meeting QM's accessibility Standards does not guarantee or imply that specific country/federal/state/local accessibility regulations are met. Consult with an accessibility specialist to ensure that accessibility regulations are met.

Fertilizer Applicator Certification Training


Module 1

Fertilizer Applicator Regulations

This module provides information on who needs to become a certified applicator, the process to follow, and how to report the data. The module details additional restrictions on fertilizer use. Watch the video and take the quiz to complete this module.

 [Fertilizer Applicator Regulations](#)

Presented by
Tim P. Sexton, Nutrient Management Program Manager
Virginia Department of Conservation and Recreation

 [Module 1 Quiz](#)

Required. Take the quiz and score at least 7 out of 10 points to complete module 1.

Module 2

Module 5

Label Interpretation and Basic Fertilizer Calculations

This module explains how to interpret and utilize the data presented on a fertilizer label regarding guaranteed nutrient analysis, fertilizer source, and fertilizer solubility. The module also provides examples of basic fertilizer calculations that consider both dry and liquid sources, as well as nitrogen solubility characteristics. Watch the video and take the quiz to complete this module.

 [Label Interpretation and Basic Fertilizer Calculations](#)

Presented by Mike Goatley, Turfgrass Extension Specialist / Professor
Dept. of Crop and Soil Environmental Sciences
Virginia Tech

 [Module 5 Tutorials](#)

These YouTube tutorials illustrate how to perform the calculations found on the module quiz.

 [Module 5 Quiz](#)

Required. Take the quiz and score at least 7 out of 10 points to complete module 5.

Module 6

Soil and Tissue Testing

This module provides information on the importance of soil testing and includes proper procedures and

Module 10

Management Strategies that Optimize the Environmental Benefits of Turfgrass

This module provides information on basic principles and benefits of environmentally safe application of fertilizers. Watch the video and take the quiz to complete this module.

[Management Strategies that Optimize the Environmental Benefits of Turfgrass](#)

Presented by Mike Goatley, Turfgrass Extension Specialist / Professor
Dept. of Crop and Soil Environmental Sciences
Virginia Tech

[Quiz](#)

Take the quiz and score at least 7 out of 10 points to complete module 10.

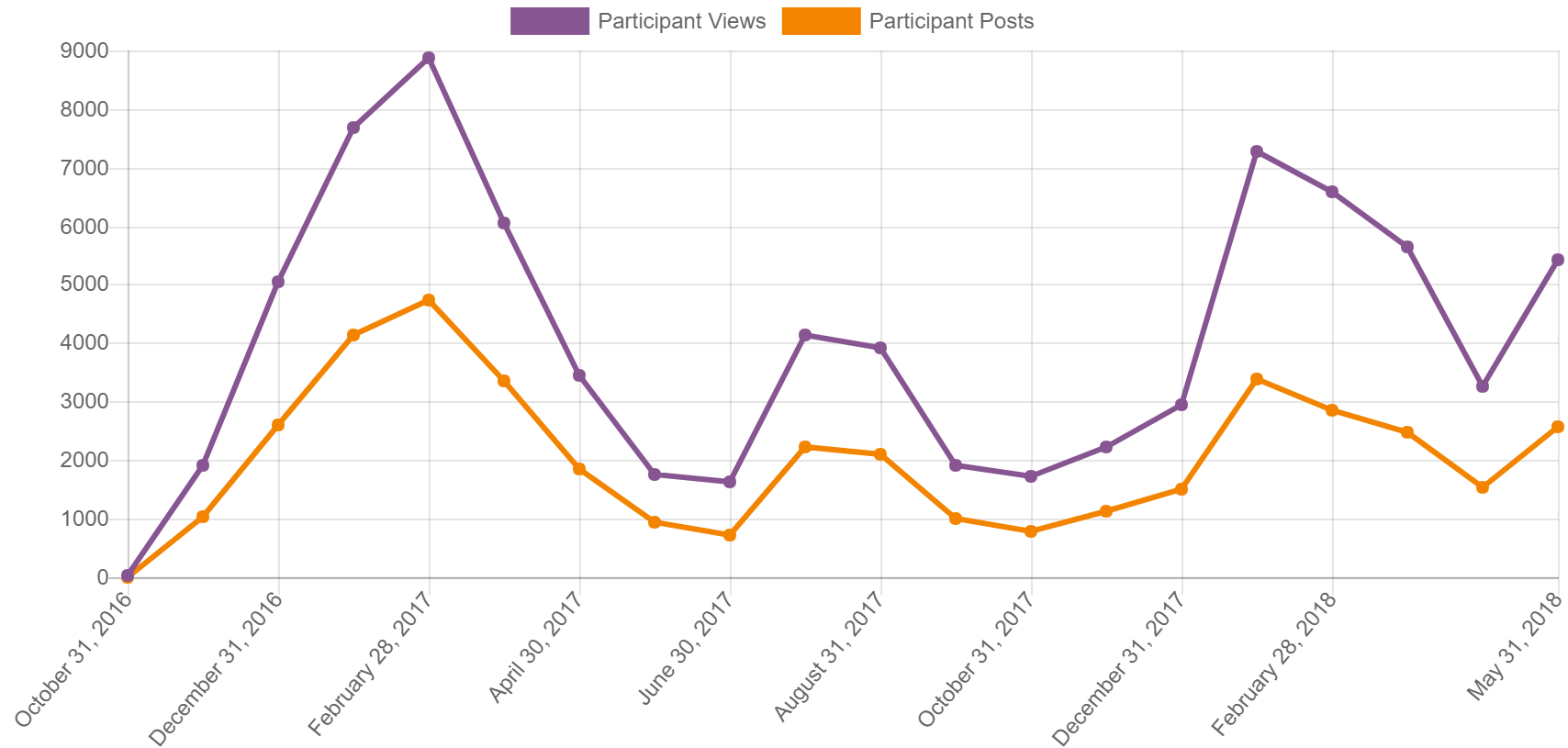
Certification & Wrap-up

After successfully completing all 10 modules, you can download a personalized certificate of completion which can be submitted to your local extension office for application.

eXtension Campus

- Participant enrollment
- Self-paced modules with video presentations
- Quizzes graded automatically
- Certificate of completion
- Reporting features

FACT - All activity (views and posts) Participant



Question banks

Training records must contain all of the following information except,
A. Name of the trained applicator
B. Name of the Certified Fertilizer Applicator or entity who conducted the training event
C. Name of Land Grant University attended
D. Date that training is completed
ANSWER: C

The Regulations for the Application of Fertilizer to Nonagricultural Lands apply to whom?
A. Anyone who applies any type of fertilizer for any purpose
B. All fertilizer contractor-applicators and licensees who apply fertilizer to turf for commercial purposes
C. Anyone who applies fertilizer non- commercially
D. All research laboratories
E. B and D
Answer: B

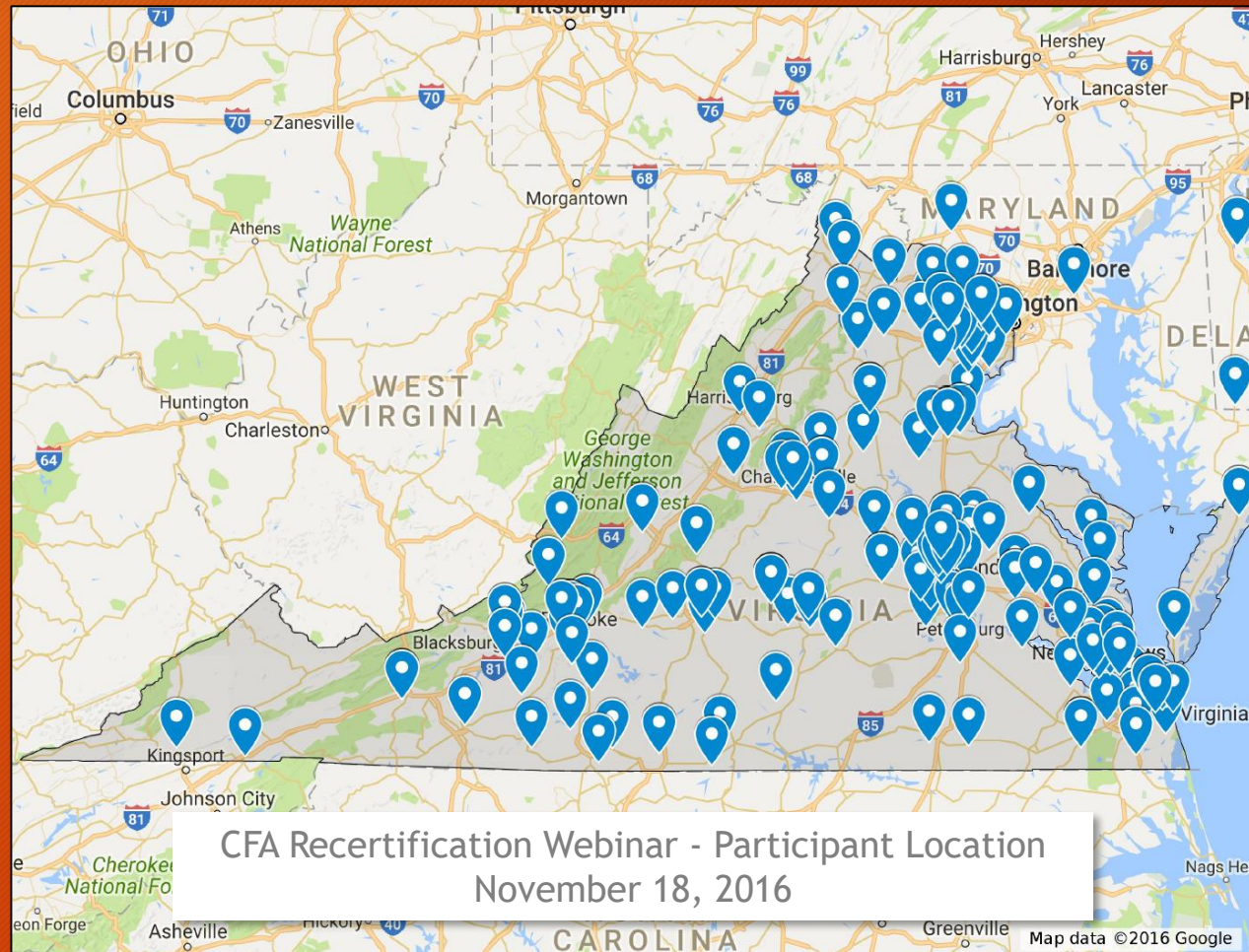
Fertilizer applicator certification is valid for how long?
A. 18 months, on a trial basis
B. It does not expire
C. 4 years
D. 2 years
E. 1 year
ANSWER: C

Certified Fertilizer Applicators shall apply fertilizer according to which of the following?
A. According to farm management regulations
B. According to EPA requirements
C. According to the Virginia Nutrient Management Standards and Criteria
D. According to AAPFCO recommendations
E. None of the above
ANSWER: C

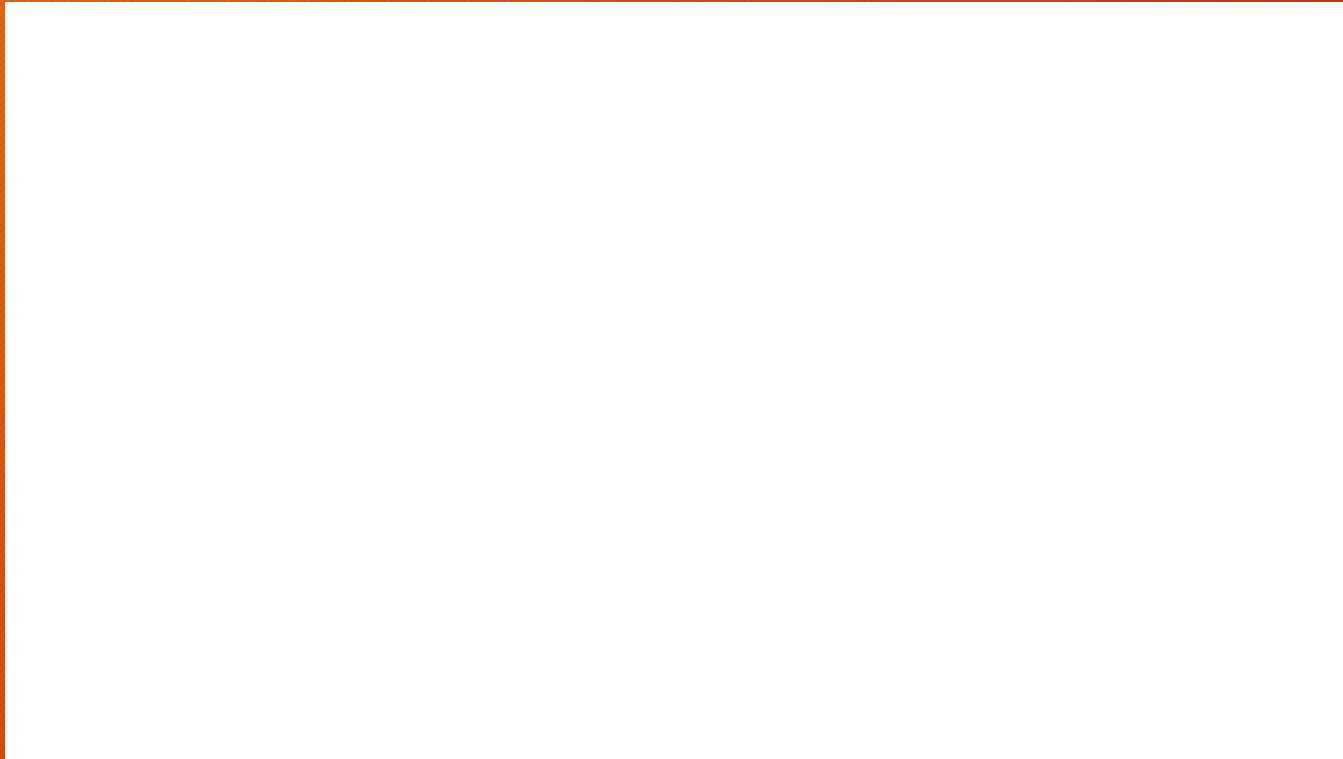
To renew a fertilizer applicator certification, one must:
A. Complete two hours of field training
B. Receive an evaluation from another certified fertilizer applicator
C. Complete two hours of course work every two years
D. Complete five hours of course work on recordkeeping requirements
E. B and C
ANSWER: C

Fertilizer applicators shall be maintained for

Webinars




Tips for creating presentations



Why Camtasia?

- Easy to use
- Record presentations
- Edit smartphone video
- Available online tutorials
- Includes video assets such as backgrounds, music tracks, etc...

 Record

34%

 Share

Media

Media Bin

Basic Components of a Turfgrass

- Basic Composition
- 85% water
- 8-13% carbon
- 2-7% other essential elements

3-003 Principles...

Essential Elements

- Water and other elements that are considered essential plant growth
- essential nutrients: N, P, K, Mg, S, Ca, Mn, Zn, Cu, B, Mo, Cl, Si, Fe, Ni, Co, Se, V, As, Sb, Sn, Pb, Cd, Cr, Hg, Al, Li, Na, K, Rb, Cs, Fr, Ba, Sr, Y, Zr, Nb, Mo, Tc, Ru, Rh, Pd, Ag, Cd, In, Sn, Sb, Te, I, Xe, La, Ce, Pr, Nd, Pm, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Hf, Ta, W, Re, Os, Ir, Pt, Au, Hg, Tl, Pb, Bi, Po, At, Rn, Fr, Ra, Ac, Th, Pa, U, Np, Pu, Am, Cm, Bk, Cf, Es, Fm, Md, No, Lr, La, Ce, Pr, Nd, Pm, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Hf, Ta, W, Re, Os, Ir, Pt, Au, Hg, Tl, Pb, Bi, Po, At, Rn, Fr, Ra, Ac, Th, Pa, U, Np, Pu, Am, Cm, Bk, Cf, Es, Fm, Md, No, Lr


4-003 Principles...

Macronutrients

- essential from soil/water
- nitrogen (N)
- phosphorus (P)
- potassium (K)
- calcium (Ca)
- magnesium (Mg)
- sulfur (S)

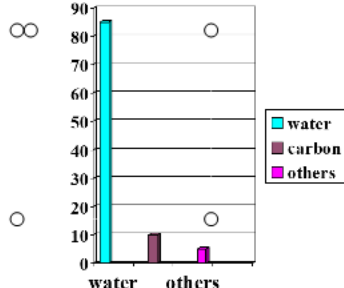
Microelements

- Water elements are obtained primarily from the soil
- boron (B)
- manganese (Mn)
- nickel (Ni)
- copper (Cu)
- vanadium (V)
- barium (Ba)
- strontium (Sr)

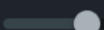






More 

Basic Components of a Turfgrass

- Basic Composition
 - 85% water
 - 8-13% carbon
 - 2-7% other essential elements












Component	Percentage
water	85%
carbon	8-13%
others	2-7%




00:19 / 03:11

Properties



00:00:00 00:00:10:00 00:00:20:00 00:00:30:00 00:00:40:00 00:00:50:00 00:01:00:00 00:01:10:00 00:01:20:00 00:01:30:00

Marker ▾

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Slides

Audio

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Highlighter



ZOOM

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(44.1/16) MONO-009.WAV

L -12 -6 0
R -12 -6 0
-48 -24 0 12 18 24 30 36 42 48

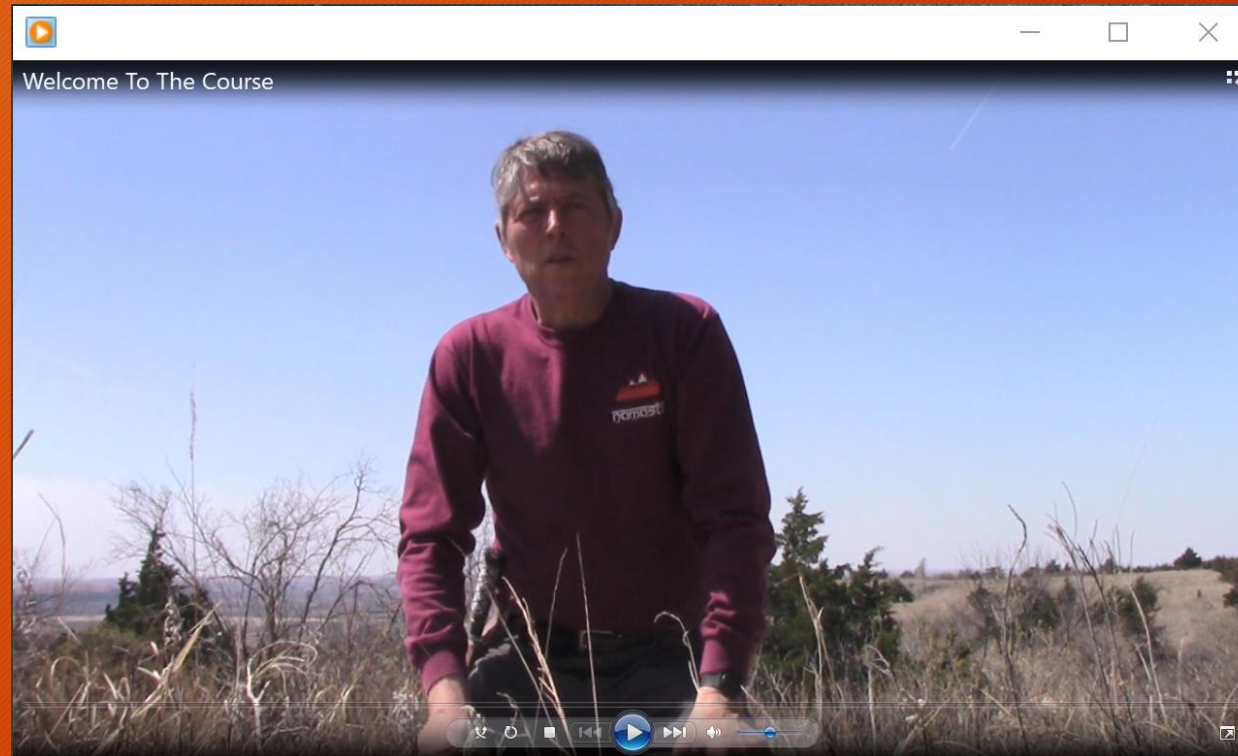
FOLDER FILE SPEED WAV/MP3

INPUT MIC 1 2 TRACK 3 4

REC

H4n Pro
Recorder

Introduce yourself with a video



Smartphone video kit

- Compact tripod and phone mount
- Rode VideoMicro directional microphone
- Rode TRS to TRRS patch cable



Tips for shooting video with your smartphone

1. Use a tripod to keep your shot steady.
2. Pay attention to the framing and the background of your shot.
3. Find your shot before pressing record.
4. Record a little extra at the start and end of your shot.
5. Use an external microphone to improve audio.

