

# Hemp Extraction Course Outline



## Lesson 1: Cannabis 101

- *Basic introduction to the cannabis extraction process*
- *Decarboxylation*
- *Extraction*
- *winterization/filtration*
- *Solvent removal*
- *Distillation*
- *Chromatography*



## Lesson 2: Extraction - Past, Present, and Future

- *Learn the history of botanical extraction*
- *How technology has changed*
- *The current status of the extraction industry*
- *Where the industry is headed*
- *The potential future of cannabis extraction*



## Lesson 3: CO2 Extraction vs. Ethanol Extraction

- *Detailed overview of Ethanol and CO2*
- *Extraction variables of each solvent*
- *Cost factors of using either extraction method*
- *The risk of residual chemical denaturants*
- *Why CO2 is the safest extraction solvent*



## Lesson 4: Advanced Solvent Removal

- *Learn the process of solvent removal*
- *The difference between various solvents*
- *Various equipment used for solvent removal*
- *Falling film vs rotary evaporators*



## Lesson 5: All Things Distillation

- *Learn the process of distillation*
- *How to make CBD distillate*
- *Wiped film evaporation & Short path distillation*
- *Distillate potency*

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## Lesson 6: Chromatography Explained

- *The process of Chromatography*
- *Explanation of CBD isolate*
- *THC Remediation*
- *HPLC and Flash Chromatography Methods*
- *Successful separation processes*



## Lesson 7: Advanced Testing

- *The basic principles of analytical testing*
- *HPLC testing methods*
- *Residuals, unknowns and denaturants*
- *Third party testing & COAs*



## Lesson 8: Bottlenecks Solved

- *Learn how to identify common processing bottlenecks*
- *Streamlining the process from receiving to formulation*
- *Why bottlenecks slow you down*
- *The value of a quality MES system*

**Certification will be available at a later date.**

*Quizzes are optional, if you want certification then quizzes will be required.*

*We hope you enjoy this course. If you have any questions or concerns, please contact us at (651) 600-0036.*