

Acknowledgements

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About this resource

The purpose of this resource is to provide guidance on competencies required for interprofessional practice in culinary nutrition (CN) and culinary medicine (CM). It was developed through expert consensus via a collaborative research project at Australian Catholic University (ACU). ACU has an extensive curriculum in culinary nutrition including short courses, microcredentials, undergraduate units and the interprofessional Graduate Certificate in Culinary Nutrition Science.

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To the author's knowledge this is the first study to investigate an interprofessional framework with competency domains and elements for professionals delivering CN and CM. The framework includes unique elements grouped into eight domains and summarised into guiding statements. This framework can act as a critical prompt to consider extensive capabilities across an interprofessional team to strengthen successful design, delivery and impact in targeted CN and CM interventions. It will inform further consistent advancements, fundamental to education, research and practice in CN and CM, including multiple specific competency standards evolving for delivery of CN and CM, that will be distinct to disciplines, settings, organisations, population groups and practice areas.



Key terms

Culinary Nutrition	The integration of culinary arts and nutrition that applies practical knowledge and skills to improve food and nutrition-related health (Croxford, 2024).	Scope of practice	"The term scope of practice (SOP) refers to the limits of a health professional's 'knowledge, skills and experience' and reflects all tasks and activities they undertake within the context of their professional role. It is important for health professionals to be aware of their own individual SOP, as well as the broader SOP for their discipline, to ensure they are practising 'Safely, lawfully and effectively' and that their skill development and growth is in keeping with the expectations for their profession." (Downie, 2023).
Culinary Medicine	A health practitioner-led culinary nutrition intervention or activity (Croxford, 2024).	Theories of understanding behaviour change	Explanations of how and why behaviour change is made. General theories propose reasons for change based on a range of factors e.g. intention is critical to the Theory of Reasoned Action, inner forces i.e. self-efficacy drives change in the Social Cognitive Theory.
Culinary nutrition professional	An expert in one or more of the culinary arts, nutrition science, health, and education fields, who takes an interprofessional approach to culinary nutrition (Croxford, 2024).	Models of behaviour change	Models of making behaviour change include specific guidance for program interventions and activities to effect change and are usually underpinned by understanding behaviour change theory. The terms 'theory' and 'model' are often used interchangeably.
Culinary nutrition activity	An experiential educational activity designed to build culinary nutrition competence in individuals and groups (Croxford, 2024).	Theories of making behaviour change	A theory of change considers assumptions and risks of an intervention and identifies solutions to problems that might hinder change. It should be evidence-based, and developed in consultation with all interest-holders and be relevant to the context of the intervention.
Culinary nutrition intervention	A set of activities to support nutrition and health goals and behavior change in individuals and groups (Croxford, 2024).	Implementation frameworks	High level structure for implementation of evidence-based or informed practice that considers the complexity of practice-based interventions, understanding the barriers and facilitators of program success, and results in desired outcomes.
Food is Medicine	Food-based disease prevention and treatment integrated and personalised interventions including medically tailored meals, medically tailored groceries, produce prescription programs and nutrition and culinary education.	Food literacy	"Food literacy is the scaffolding that empowers individuals, house-holds, communities or nations to protect diet quality through change and strengthen dietary resilience over time. It is composed of a collection of inter-related knowledge, skills and behaviours required to plan, manage, select, prepare and eat food to meet needs and determine intake". (Vidgen & Gallegos, 2014). Food literacy should also consider cultural, social and environmental contexts. Culinary nutrition and culinary medicine build food literacy.
Medically Tailored Meals	Meals prescribed by healthcare professionals and made for individuals to meet dietary needs to treat specific diseases, often home delivered.	Gastronomy	The art and science of all aspects of eating, from conception to post-enjoyment of a meal or food-related occasion. It encompasses elements of culture and heritage, society and community, and sharing experiences to sustainability and naturally preserving the environment.
Produce Prescription Programs	Fresh produce or vouchers for produce prescribed by healthcare professionals for individuals to improve vegetable and fruit intake and food security.	Planetary health	"The achievement of the highest attainable standard of health, well-being and equity worldwide through judicious attention to the human systems – political, economic and social – that shape the future of humanity, and the Earth's natural systems that define the safe environmental limits within which humanity can flourish." (WHO, 2021, p8).
Person-centred (culinary nutrition)	An inclusive, collaborative, tailored approach to culinary nutrition/culinary medicine that focuses on the needs, goals, preferences and safety of the individual person participating in an activity or intervention.	Traditional diets	Traditional food practices are both old and new. In order for a food to be traditional there must be continuity with the past, yet it may be influenced by the present (Croxford, 2018).
Teaching kitchen framework	A structure that has experiential learning in a kitchen as a cornerstone of food and culinary skill development in individuals in the prevention and treatment of disease and promotion of health and wellbeing.	Multi-sensory learning	"Multisensory learning is a process that consists of learning a new subject through the use of two or more senses, which may include visual, auditory, tactile or synesthetic, olfactory, and gustatory sensation." (Esplendori, 2022 as cited in Prasannakumar, 2018).

Interprofessional Framework for Culinary Nutrition (CN) and Culinary Medicine (CM) Competencies

DOMAINS



Interprofessional Framework for Culinary Nutrition (CN) and Culinary Medicine (CM) Competencies

-Interprofessional roles in practice
-Interprofessional collaboration and practice
-Team based approach to competency attainment

-Scope of practice
-Discipline level competencies in culinary nutrition
-Innovative practice

-Impact of technology e.g. AI -Strategic planning -Entrepreneurship

-Professional conduct
-Ethical conduct

-Evolution of distinct field of practice -Continuing professional development -Leadership

-Advocacy
-Systems thinking

-Emerging science across all domains
-Critical evaluation

Management

Domain 4

Nutrition Science

-Creation of new knowledge

-Activity and intervention aims and objectives -Targeted interventions -Participatory action research approaches -Theories and frameworks of understanding and

 -Theories and frameworks of understanding and changing behaviour e.g. Social Cognitive Theory, Theory and Framework for Experiential Drivers of

-Ethical and inclusive principles

Behaviour Change
-Models of understanding and changing behaviour e.g.
COM-B, Transtheoretical (Stages of Change) Model

-Theories of education e.g. Adult Learning Theory (Andragogy), Experiential Learning

Domain 2

Health Promotion

-Psychosocial role of food -Implementation Frameworks -Evidence-based behaviour change

-Technologies for behaviour change
-Person-centred culinary nutrition goal setting
-Self-monitoring

-Habit, decision making and motivation insights

-Self-(and group) efficacy -Teaching kitchen models -Cooking demonstration

-Experiential learning -Multimodal sensory perception knowledge

-Multimodal sensory perception knowledge
-Gastrophysics related to behaviour change
-Eating environments and food behaviours
-Commensality

-Mindful eating and cooking
-Quality improvement and evaluation
-Participation and engagement data / research

-Outcome evaluation / research -Critical approach -Reflective practice -Gastronomy

-Ingredient knowledge, innovation and substitution
 -Flavour theory and balance (recipe development)
 -Recipe creation knowledge and innovation
 -Menu creation knowledge and innovation

-Special diets
-Plating and food styling in culinary arts

-Plating and food styling in culinary arts
 -Dining and hospitality
 -Food preparation, including knife skills

-Methods of cookery

-Novel and emerging culinary techniques and cuisine
-Culinary terminology

-Skill development

Food service settings and creativity e.g. dining in the dark
-Food service environment operations

-Choice architecture e.g. nudging
-Food safety practices -equipment and utensils
-Safe food handling / hygiene practices

-Sanitation in kitchens

-Ordering for foodservice / cooking -Mise en place

-Workflow planning
-Budgeting in the kitchen
-Kitchen set up and organisation
-Grant writing

-Grant administration and reporting -Budget and resource management

-Food and macronutrients
-Food and micronutrients

-Food and bioactive components
-Non nutrients, supplements, alcohol and water
-Food, nutrition and health, wellbeing and

performance in humans
-Human nutrition and metabolism

-Nutrition assessment -Recommended reference values for nutrients/dietary intakes for health, wellbeing

and performance
-Dietary guidelines
-Food guides

-Public health nutrition priorities
-Recipe development and modification, including for

special diets

-Menu development, including for special diets

-Implementation tools e.g. medically tailored meals, groceries and produce prescriptions
-Food and nutrition across lifestages

-Food and nutrition for healthy individuals -Food and nutrition for diverse populations -Altered eating conditions

-Diet-related diseases in individuals and populations
-Nutrition analysis - theoretical

-Nutrition analysis - analytical -Nutrition assessment criteria

-Dietary analysis and modification -Food and nutrition goal setting -Food and kitchen chemistry

-Flavour science and palate development -Ingredient functionality

-New product development
-Recipe development for product quality and

performance
-Chemical reactions in food production, storage,

Chemical reactions in food production, storage preparation and cooking

-Nutrient/Non nutrient reactions in food and cooking
 -Functional substitutions with food and cooking
 -Current and future food technologies, and impact of

d future food technologies, and impact on nutrient content of foods

-Food safety -Food preservation

-Food and safety-related microbiology

-Multimodal sensory perception

Food Science

Domain 6

Food Systems.

Sustainability

and Sovereignty

theory and practice
-Gastrophysics
-Science of pleasure

-Altered taste conditions

-Compensatory strategies in altered taste -Sensory evaluation

-Sensory testing of food using validated methods

-Sensory testing of recipes using validated methods

Food commodities, systems and sustainability
 Food supply chains
 Agricultural and farming systems e.g.

regenerative agriculture
-Soil science and nutrient composition
-Primary and secondary food production

-Food regulations -Food governance

-Systems thinking and sustainability frameworks e.g. Planetary Health and SDGs -Ethical food and ingredient sourcing

-Sustainable procurement practices
-Farmer, producer and food artisan collaboration

armer, producer and food artisan collaboration
-Food security
-Food justice

-Food sovereignty

-Advocacy in food security, justice and sovereignty
-Horticulture integrated culinary nutrition activity
-Provenance

-Kitchen, community and sensory gardens
-Edible landscapes

-Urban farms -Produce prescription programs

-Seasonality -Food waste

-Sustainable diets and climate change

-Circular economy -Charitable food systems **ELEMENTS**

-Cultural foodways
-Food heritage and traditional diets
-Cross-cultural exchange of knowledge and skills
-Research methods e.g. ethnography
-Dietary acculturation

-Tracking dietary behaviours -First Nations foodways -Indigenous knowledges

-Decolonising approaches
-Special dietary requirements for religions
-Special dietary requirements for cultural diets

-Cultural safety
-Culturally safe care
-Reflexivity and culturally

safe practice

rsity

-Targeted campaigns in culinary nutrition -Effective storytelling -Positive, non-stigmatising, trust-building approaches -Social media strategies

-Digital strategies e.g. live streamed, synchronous and asynchronous virtual -Emerging communication strategies and technologies e.g. AI, immersive

technologies
-Culinary nutrition translation for diverse and broad audiences

-Food trends and forecasts
-Flavour trends
-Culinary trends

-Eating behaviour and dining trends -Food media

> -Tested and proven recipe writing

-Multi-media communication -Cookbook creation collaboration

-Visual assets
-Graphic design
-Food styling

-Food styling
-Food photography
-Food videography

-Food videography

Australian Catholic University, 2025

The Interprofessional Framework for Culinary Nutrition and Culinary Medicine Competencies

Interprofessional Framework for Culinary Nutrition (CN) and Culinary Medicine (CM)

Competencies

Health Promotion and

- 2.1 Plan ethical and inclusive Culinary Nutrition Interventions and Culinary Medicine that is targeted and utilises insights from participatory action research approaches, theories and models of understanding and changing behaviour, theories of education and implementation frameworks to achieve clearly defined aims and objectives.
- 2.2 Apply evidence-based frameworks and technologies to guide person-centred goal setting, self-monitoring, motivation, self-(and group) efficacy, habit change and decision-making in Culinary Nutrition Interventions. 2.3 Design and deliver individual and group Culinary Nutrition Activity with a Teaching Kitchen framework and with Culinary Nutrition Professionals skilled in facilitating experiential learning and culinary demonstration.

2.4 Apply knowledge of multimodal

sensory perception, gastrophysics,

commensality and mindful eating and cooking techniques in Culinary

2.5 Critically adapt Culinary

Nutrition Interventions using

feedback, participation and

engagement data, outcome

measures, quality improvement,

reflective practice and research.

eating environments.

Nutrition Activity.

Culinary Arts. Foodservice and Management

3.1 Creatively apply principles of gastronomy to innovate ingredients, flavour science, recipes, menus, plating, food styling, and dining environments for targeted Culinary Nutrition Interventions. 3.2 Apply traditional and novel culinary terminology, techniques of cookery and cuisines for skill development and reinforcement in Culinary Nutrition Activity. 3.3 Design effective, creative foodservice environments for Culinary Nutrition Interventions using principles of choice architecture. 3.4 Maintain food safety, hygiene, and sanitation in the Culinary Nutrition teaching kitchen and food

and kitchen environments.

place, workflow planning,

3.6 Apply for and manage funding

and resources in Culinary Nutrition.

budgeting, and kitchen

4.5 Transform recipes, menus, food 3.5 Execute ordering, mise en intake, and dietary patterns through theoretical and analytical nutrition analysis using evidence-based organisation for Culinary Nutrition criteria to inform Culinary Nutrition Activity.

Nutrition Science

4.1 Apply knowledge of macronutrients, micronutrients, and bioactive components in food. human metabolism and health to Culinary Nutrition Interventions. 4.2 Understand and apply recommended reference values for nutrients and dietary intakes, dietary guidelines, food guides and public health nutrition priorities in Culinary Nutrition Interventions. 4.3 Develop recipes, menus and other implementation tools for health and special diets in Culinary Nutrition and Culinary Medicine. 4.4 Address Culinary Nutrition and Culinary Medicine across the lifespan and with populations, in altered eating and diet-related

disease.

5.1 Apply knowledge of food and kitchen chemistry, flavour science, palate development and ingredient functionality to Culinary Nutrition Activity.

- 5.2 Conduct new product and recipe development through understanding of food, chemical and nutrient reactions, functional substitutions and food technologies in Culinary Nutrition
- Activity. 5.3 Apply theoretical understanding of food safety theory, food preservation, food and safety-related microbiology and food fraud to Culinary Nutrition Activity.
- 5.4 Incorporate insights from multimodal sensory perception. gastrophysics, and the science of pleasure, altered taste and compensatory strategies in Culinary Nutrition Interventions. 5.5 Conduct sensory evaluation and testing of food and recipes using validated, rigorous methods in Culinary Nutrition Activity.

Food Systems, Sustainability and Sovereignty

- 6.1 Use systems thinking and sustainability frameworks to understand elements of the food system, food regulations and governance as applied to Culinary Nutrition.
- 6.2 Support ethical sourcing, sustainable procurement practices and work with farmers, producers and food artisans in Culinary Nutrition Activity.
- 6.3 Advocate for food security, food justice and food sovereignty in Culinary Nutrition Interventions. 6.4 Promote food provenance with horticulture integrated Culinary Nutrition Activity in kitchen and community gardens, sensory gardens, edible landscapes, urban farms and with Produce
- Prescription Programs. 6.5 Implement strategies to maximise seasonality, reduce food waste, support the circular economy, and promote sustainable diets in Culinary Nutrition Activity.

GUIDING STATEMENTS

- 7.1 Embrace cultural foodways, food heritage and traditional diets, and facilitate ways of crosscultural exchange in Culinary Nutrition Activity.
- 7.2 Adopt methods in Culinary Nutrition research to explore and track historical and current dietary acculturation.
- 7.3 Use decolonising approaches to curriculum development and integration of First Nations foodways and Indigenous knowledges in Culinary Nutrition Activity.
- 7.4 Apply special dietary requirements for religious and cultural diets in Culinary Nutrition Activity.
- 7.5 Practice reflexivity and culturally safe care in Culinary Nutrition Interventions.

8.1 Design and deliver impactful, targeted, nonstigmatising trust building Culinary Nutrition campaigns with effective storytelling.

8.2 Implement contemporary and

- emerging communication strategies and technologies for Culinary Nutrition translation. 8.3 Track food, flavour, culinary and dining trends to inform targeted Culinary Nutrition Interventions.
- 8.4 Craft and publish compelling Culinary Nutrition food media, proven recipes and multi-media communication.
- 8.5 Create impactful Culinary Nutrition visual assets through graphic design, food styling, photography and videography.

1.1 Collaborate across professions, respect scope of practice, and foster a team-based approach to building competencies and practising as Culinary Nutrition Professionals, 1.2 Integrate additional competencies that are recognised in Culinary Nutrition and/or Culinary Medicine at a discipline- or profession-specific level.

1.3 Apply innovative, strategic planning and entrepreneurship to drive the evidence-base in Culinary Nutrition and/or Culinary Medicine research and practice.

1.4 Demonstrate ethical and professional conduct, an understanding of past and present practice, and a commitment to continuing professional development in Culinary Nutrition and/or Culinary Medicine. 1.5 Demonstrate leadership, engage in advocacy, and apply systems thinking in advancing Culinary Nutrition and/or Culinary Medicine.

1.6 Critically evaluate and apply current and emerging science and share new knowledge in Culinary Nutrition and/or Culinary Medicine.

Domain 3

Domain 4

Domain 5

Domain 6

References

Recommended citation: Stirling, E., Thomas, O., Eisenberg, D., & Croxford, S. (2025). The Interprofessional Framework for Culinary Nutrition and Culinary Medicine Competencies. Australian Catholic University.

Croxford, S., Stirling, E., MacLaren, J., McWhorter, J. W., Frederick, L., & Thomas, O. W. (2024). Culinary Medicine or Culinary Nutrition? Defining Terms for Use in Education and Practice. *Nutrients*. *16*(5), 603. https://doi.org/10.3390/nu16050603

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Croxford, S. (2018). Changes in culinary culture with migration and its effect on health in Turkish migrants. La Trobe. Thesis. https://doi.org/10.26181/21858579.v1

Downie, S., Walsh, J., Kirk-Brown, A., & Haines, T. P. (2023). How can scope of practice be described and conceptualised in medical and health professions? A systematic review for scoping and content analysis. *The International journal of health planning and management*, 38(5), 1184–1211. https://doi.org/10.1002/hpm.3678

Esplendori, G. F., Kobayashi, R. M., & Püschel, V. A. de A. (2022). Multisensory integration approach, cognitive domains, meaningful learning: reflections for undergraduate nursing education. *Revista Da Escola de Enfermagem Da U S P*, 56(e20210381). https://doi.org/10.1590/1980-220x-reeusp-2021-0381

Vidgen, H. A. & Gallegos, D. (2014). Defining food literacy and its components. *Appetite*, 76, 50-59. https://doi.org/10.1016/j.appet.2014.01.010

WHO (World Health Organisation). (2021). *Health promotion glossary of terms*. https://iris.who.int/server/api/core/bitstreams/96da8799-4938-4d66-b171-04770ed4b243/content

Front cover image from left to right: ACU Graduate Certificate in Culinary Nutrition Science and Master of Dietetic Practice students Ashlee Milecevic, Melinda Le Sueur and Melinda Kouch.

Internal image: Ethiopian fasting plate in the ACU Teaching Kitchen